Control4®

Composer Pro 3.3
User Guide

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Introduction

Control4® Composer Professional Edition (Composer Pro) is software you can use to set up and configure a Control4 home automation system. This document explains how to use Composer Pro. To learn about what's new in this release, and basic startup and configuration information, see the Composer Pro Getting Started guide in the Composer Pro *Help* menu or on the Control4 website.

Scope

This Control4 Composer Pro User Guide, which was formerly separated into two parts, is now compiled into a single manual. The User Guide covers these topics:

- Installing devices
- What's new in this release
- Configuring properties
- Configuring devices
- Customizing the Navigators
- Updating Composer and Director
- Example projects
- Troubleshooting the system
- Setting up the network configuration
- Creating device drivers
- Connecting and verifying devices
- Setting up the media
- Programming the system

If you've never used Composer Pro before, we suggest that you start by reading Composer Pro Getting Started, available in the Composer Pro application's Help menu or on the Control4 website in PDF. If you're already familiar with Composer Pro, you can skip through the Composer Pro Getting Started, and then continue with this document.

For information about what's new in this release, see What's new in this release.

Related documents and resources

Document Title	Location
Composer Pro Getting Started (200-00168)	*Composer Pro Getting Started*
Composer Pro User Guide (200-00005)	*Composer Pro User Guide*
Control4 System User Guide (200-00001)	System User Guide
Control4 Operating System Latest Release Notes	Latest release notes: *ctrl4.co/releasenotes*

Composer Pro overview

This document is for new Control4 dealers or installers who want to learn how to use Composer Pro in the Control4 Smart Home OS 3.3.0 (OS 3.3.0) or later, or for those who want to keep up with the latest changes. If you are already familiar with Composer Pro, you may only want to know what has changed from the last release. If this is the case, see "What's new in this release" or "Where to go from here" for more advanced information about Composer Pro, and then search for your subjects in the Composer Pro User Guide.

The Control4 system is a combination of Control4 and third-party controllable devices, for example, HDTVs, DVDs, CD players, speakers, home theaters, lights (and so on) that communicate with one another via TCP/IP, infrared (IR), serial, contact, or relay connections.

Composer Professional Edition (Composer Pro) is the software application that Control4 dealers and/or installers use to design and set up a Control4 system project for home automation in a consumer's home or business. The software runs on either a Windows 7, 8, 10, or Windows Vista computer, and provides a powerful graphical interface for object-based programming. When connected to a Control4 controller, the project's information is then communicated to Director on the controller. Director, in turn, uses the configuration information and device drivers to communicate to the devices in the home automation system.

> **Note:** Composer Pro 3.0 is not compatible with Windows XP

The sections in this *Getting Started* document provide basic information and steps for Control4 dealers and installers to become familiar with and start using the Composer Pro interface for initial design and setup of a Control4 system.

Information beyond the basics described in this guide (for intermediate and advanced users of Composer Pro) is provided in the Composer Pro User Guide.

Setting up the Control4 system—overview

Setting up a fully functional Control4 system includes the following major procedures.

For best results, Control4 recommends that you follow the procedures in this order:

1. **Install and connect the hardware**–When deploying a Control4 system, install and connect the essential devices:
   - A Control4 controller (for example, an EA-3)
   - A Windows-based computer to set up and configure the home automation system using Composer Pro
   - The device to be controlled (for example, touch screen, DVD player, speakers, lights, Dock for iPod, etc.)
   - A controller and PC connection to the home network
2. **Purchase the required licenses**–To use Composer Pro for your company or your employees, you'll need to purchase and assign licenses. See the document Managing Dealer Accounts on My.Control4.Com for details.
3. **Install the Composer Pro software**–Use the Composer Pro installation software to install Composer on a PC and activate it using your my.control4.com dealer user account.
4. **Connect to a Director**– Each time you start Composer on your PC, you either connect to Director running on a local or remote controller (live connection) or a virtual Director running on your PC (virtual connection). Director is the software on a controller that stores the Control4 system configuration and manages the control of each subsystem and device in the Control4 system.
   - Live connection: To make changes to a Control4 system in real time, connect to the Director through either *Local System* (over the home network) or *Remote System* (over the Internet).

     Note: Remote Access must be configured locally before using a remote connection to the controller. See "Setting up Remote Access."
   - Virtual connection: Alternatively, to create or edit the system configuration offline and save the project file, connect to Director through *Virtual System*. The saved .c4p project file can be loaded later into a controller through a local connection to ensure that Director has the updated system configuration.
5. **Plan and design the system**. To design a system in Composer Pro, you first create a project in the form of a project tree that represents the hierarchy of locations for the devices to be automated in the home-automation system (site > building > floors > rooms > devices) and the devices that reside in each room.
   - **Create a plan**. Creating a plan before you start your project in Composer Pro will help make your system design go much more smoothly.
   - **Design the system using System Design view**: Use the System Design view where you can view the project tree as you build the design.
6. **Make and test the connections**. In the Composer Pro project, you must define all of the physical connections of the devices to the system: control (IR and serial)and AV (audio, video). You must also define other connections: room control and network connections. You can use Composer Connections view to complete the connections.
7. **Register the system**. Control4 recommends that you register each system you install at customer.control4.com to maintain the system software through software updates and critical system patches.

Important: Only registered systems can use all of the media services available. System registration is one of the essential steps that lets you access the system remotely (remote access) for repairs, updates, and additions.

Composer Pro system requirements

Computer software and hardware

- Microsoft.NET 4 (the Composer install is launched automatically from the Control4 website).
- Microsoft operating systems supported (Windows 10, 8, 7, or Vista). Mac support when used with a Windows virtual machine such as Parallels or VMWare Fusion for Mac.
- 500 MHz or higher processor
- 256 MB RAM
- 90 MB available hard disk space
- Video card and monitor supporting a resolution of 1024x768 or higher
- Keyboard
- Mouse
- 1 to 2 Ethernet (CAT5 or CAT6) cables

Home computer network

- Wireless access point (WAP) or wireless router that supports 802.11 b/g/n (optional)
- TCP/IP-based (Ethernet) home network. This usually includes a network gateway, router or switch.
- 1–2 Ethernet (CAT5 or CAT6) cables
- A broadband Internet connection. During initial setup, a broadband Internet connection is required to update the Control4 system and retrieve the media's cover art. Also, a broadband Internet connection is required to support remote access to the system.

Control4 home automation network

- A Control4 controller (for example, an EA-3).
- Control4 Composer Professional Edition (Composer Pro) software, version 3.0.0.
- Note: A Control4 controller is set by default as a DHCP client. If the home network has a DHCP server in place (for example, a router that provides

DHCP services), then the controller automatically receives a valid IP address.

Note: Control4 recommends that you update to the latest software release.

- A wireless access point (WAP) that supports 802.11b/g/n (required to use a Control4 wireless touch screen).
- A valid electronic license to run Composer Pro. Control4 now requires activation using a my.control4.com account with a license to run Composer Pro. Re-activation is required every 30 days. See Managing Dealer Accounts on My.Control4.com on the Control4 dealer website or Knowledgebase to learn how to add and manage licenses from my.control4.com.

Installing the hardware and software

This section provides guidelines to install the devices and Composer Pro.

Installing and connecting the hardware

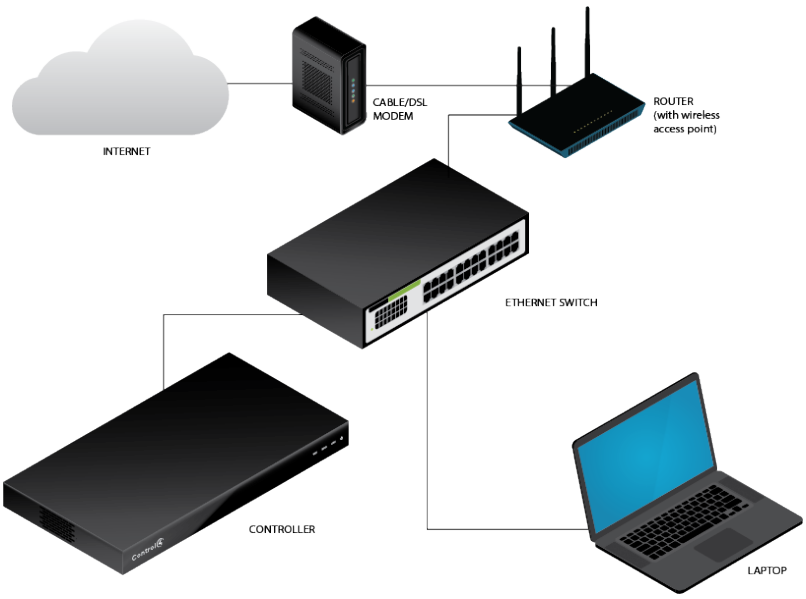
Before you can set up a Control4 home automation system in Composer Pro, all of the devices to be used in the system need to be installed and connected to the home network. Additional devices can be added and identified to the Composer Pro project if you install or replace devices in the future.

Follow these guidelines to get started:

1. Create a system specification, and refer to it so you can answer these questions.
1. What does the home have?
   - Any there any outer buildings, for example a detached garage, that will be automated? All buildings to be automated must be included in the project.
   - How many floors are there in each building? For example, the house has three floors and a basement; the garage has one floor.
   - What rooms are on each floor? For example, the third floor of the house has one Master Bedroom and two other bedrooms. The third floor also has one Master Bath and one Main Bath.
2. Which Control4 devices are or will be installed in each room (include manufacturers and model numbers)?
3. Which third-party devices are or will be installed in each room (include manufacturers and model numbers)?
4. If any of these devices has a choice of power sources, indicate how the device will be powered: AC, DC, or batteries.
5. If any of these devices has communication options, indicate how each device will communicate with the controller (how the device will be controlled): Ethernet, Power Over Ethernet (POE), Wi-Fi, Zigbee® Pro, IR, serial, contact, or relay.
2. Install and connect the Control4 devices as described in the installation or setup guide that ships with each device.

Tip: See also "Related documents and resources" in this guide for document locations.

3. Install and connect all third-party devices, for example, audio-video devices, door contacts, and security panels, as described in the installation guide that ships with each device.
4. Connect the Control4 controller and your PC to the home network. Initial setup of the controller requires a hard-wired (Ethernet) connection to the network, and an Ethernet connection is always recommended. A simple Control4 system and home network are shown below.



- Use the RJ-45 jack labeled ‘Ethernet’ on the back of the controller to connect it to the home network. If successful, the amber LED turns on and the green LED blinks. Read the controller’s installation guide to learn how the LEDs work.
- Use either a wireless access point (WAP) or Ethernet cable to connect the PC to the home network.

5. Confirm that the Control4 devices are getting network addresses from the gateway, router, or switch. See the Composer Pro User Guide for details.

Installing Composer HE software

Follow these steps to install your Control4 Composer HE software for the first time. If you are upgrading from a version earlier than OS 2.9.1, you must first upgrade to OS 2.9.1 to continue. Please refer to the specific version of this document for further information.

> Note: An Internet connection is required to perform this installation.

Follow these general steps for existing systems:

- Your dealer should purchase, install and activate the Home Edition license. The computer running Composer HE must be connected to the Internet, andyou must have a customer.control4.com account with a license to run Composer HE.
- Install Composer HE 3.2.4.

To install the Composer Pro software:

1. Obtain the Composer HE Installation software (available as web download from customer.control4.com).

> **Note**: Windows 7 or later and an Internet connection are required to perform this installation.

2. Start the Composer HE installation, and follow the on-screen instructions.
3. Select to update to the latest version of Composer.

> Tip: As new features and drivers become available, the Composer HE software and associated drivers can be updated.

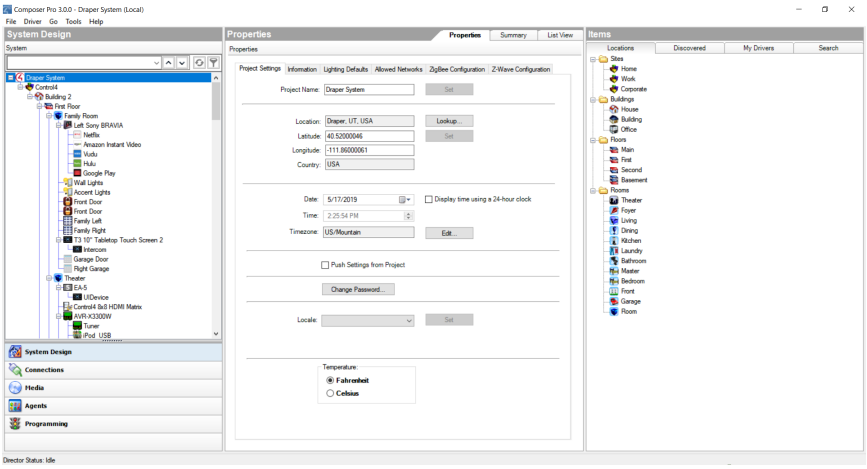
4. During the installation process, click **Continue Anyway** to allow the installation to proceed.
5. The next screen asks for your account login and password. This assumes that you already have an account on customer.control4.com with a Composer HE license. If you don't have an account, contact your Control4 dealer.

Exploring Composer Pro features

The Control4 Composer Pro interface (views) and wizards are designed to help you simplify the process of designing the system, identifying and configuring the devices, making the connections, and then customizing the system through programming. How you set up the devices in Composer Pro determines how they function in the system.

First page

When you start Composer Pro and connect to a Director, a similar screen like the following System Design view appears:



The Composer Pro interface contains menus, panes, a project tree, tabs, and objects. These components are explained in this document.

Composer Pro startup options

Start Composer Pro

You can start the Control4 Composer Pro application two ways:

- Double-click the **Composer** icon on your desktop (easiest way).



- Click Start > All Programs > Control4 > Composer 3.*0.0* > Composer 3.*0.0*.

Tip: For your convenience, in Composer 2.5 and later the Start menu also displays your projects, logs, and drivers.

When you start Composer Pro, the Composer startup screen displays:



This screen presents the following Director-connection options. Click one of the options to access the Composer Pro project and project tree (System Design view).

- **Virtual System**—Click this option to work on the project when you are disconnected from the network. If you do not have access to the controller, you can still set up a system using a "virtual" Director on your PC, and later upload your changes to the controller. Using a virtual connection, you can complete most design tasks, including making software connections and performing some programming tasks. You cannot identify network connections, test device control, or set up media virtually in this mode, however.

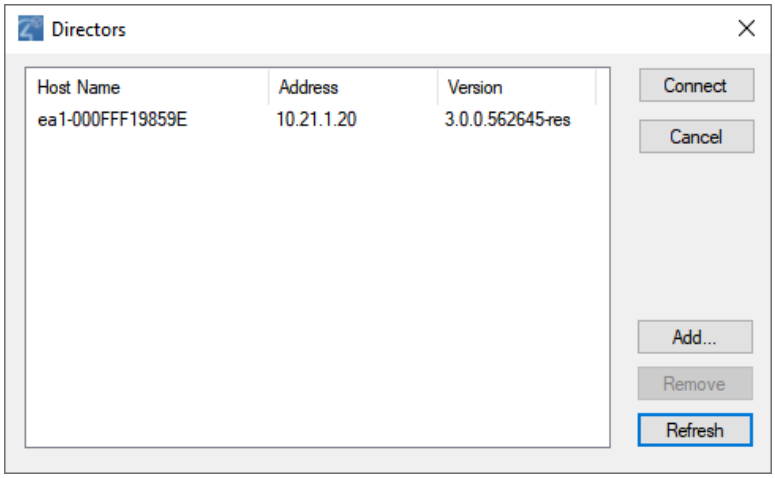
  Note: Use this option, for example, if you are installing Centralized Lighting products. Also, check **Install the Report Viewer** to add the Centralized Lighting reports. Your electrician will need these reports to install the panels and modules when they become available. See the documentation, plans, and videos on the Control4 website.

- **Local System**—Click this option if you have a direct connection to the home network (inside the firewall). This option gives you all the capabilities of the application: set up and design a project, connect the devices to the network, configure the media, and program the system.

- **Remote System**—Click this option to work from a remote location by establishing an Internet connection to the home network (outside the firewall). You can perform the same tasks as if you were connected using the *Local System* option.

- **System Manager**—Click this option to launch System Manager. System Manager can also be launched from Tools > System Manager, or from the Composer folder in the Windows Start menu.

  This Directors dialog appears when you click **Local System**. In this case, you select the network address associated with the controller, and then click **Connect**.



- **Connect**—Lets you connect to the Director that resides on the controller attached to the local network.
- **Cancel**—Cancels and closes the *Directors* dialog box.
- **Add...**—Lets you add the Director's address of the controller to which you are trying to connect.
- **Remove**—Lets you remove the selected Director from the list.
- **Refresh**—Lets you update the Directors list to display recently-added Directors.

Exit Composer Pro

You can exit Composer two ways:

- Startup window (where you start Director):click **Exit Composer**.
- File menu (in the Composer project): select **Exit**.

As you exit, Composer Pro prompts you to back up your project and media information to your local computer. This is not required except when using a *Virtual System* connection, but Control4 highly recommends that you back up your project every time you close Composer Pro.

Composer Pro views

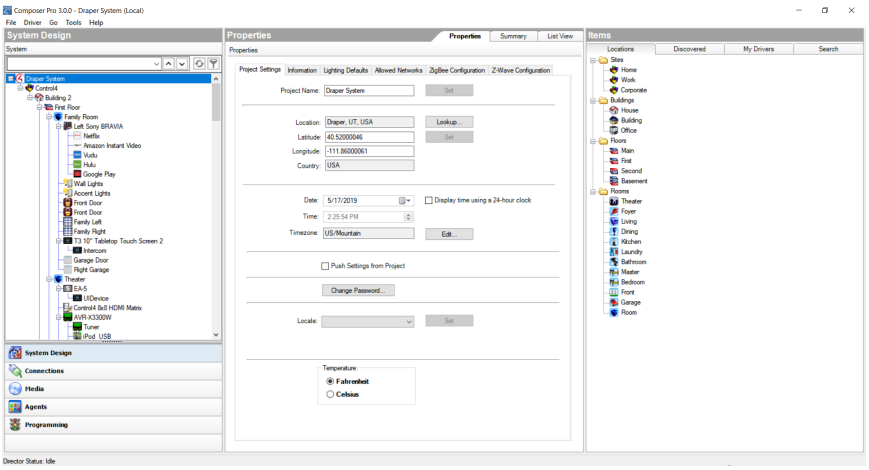
Available views

The Control4 Composer Pro application has five main views (buttons are located in the bottom left pane). When you select a view (see the figures below) the appearance, functionality, and configuration change for that view.

Also note the status bar at the bottom of the screen, which indicates the Director's network IP address and Director status.

> Tip: Collapse the views by clicking the dotted bar just above the views so you have more room to view the project tree.

Main menu:



Composer view buttons:



Click one of these buttons for the desired view.

- **System Design**—Build the project tree by adding locations and devices and define device properties.
- **Connections**—Make connections in the project between devices (Room, Control, AV, Network) and identify devices.
- **Media**—Add and scan stored or broadcast media.

- **Agents**—Set up an agent for use in the system and in programming. Agent types: Lighting Scenes, Wakeup, Scheduler, Variables, etc.
- **Programming**—Program events and actions to automate the system. Using predefined events and user-defined agents.

System Design view

Use the Control4 Composer Pro System Design view (the default view when you start Composer Pro) to define the Control4 system project for a customer.

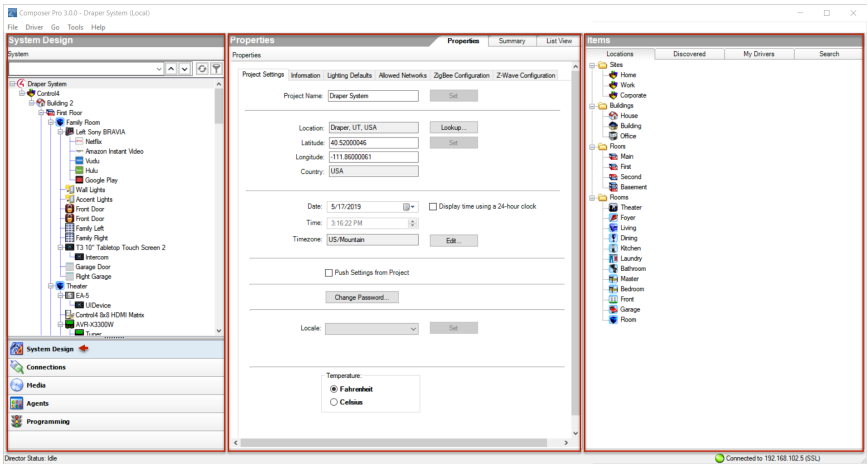
This view lets you set up the project tree by defining

- The location of the devices to set up in the project (building).
- The device you want to include in the project (device objects).
- The location of each device by room (room).

To access the System Design view:

1. Start Composer.

Take note of the three large panes in the screen below (System Design, Properties, and Items):



- **System Design (left pane)**—Contains the project tree where you build or update the project configuration with locations and device drivers. Select the room where you want the device driver to go, and then double-click a device driver in the Items pane (right side) to add it to the project tree.
- **Properties (center pane)**—Contains the Properties of the object you select from the project tree when you want to check or modify a device, project, and room. Refer to the sections below to view more information about the *Properties* pane.
- "Project Properties"
- "Room Properties"

- “Device Properties”
- **Items (right pane)**—Contains the items (or objects, device drivers) you use to build your project, such as locations (sites, buildings, floors, rooms) and devices (controller hardware, DVDs, TVs, receivers, lights, contacts, relays, etc.). If a device is not available in the My Drivers tab in this pane, use the **Search** tab to search for that device (see the Composer Pro User Guide for information about how to search for drivers). If you've created a new driver using the Driver Wizard or DriverWorks, you will find your new driver in the *Search* tab.

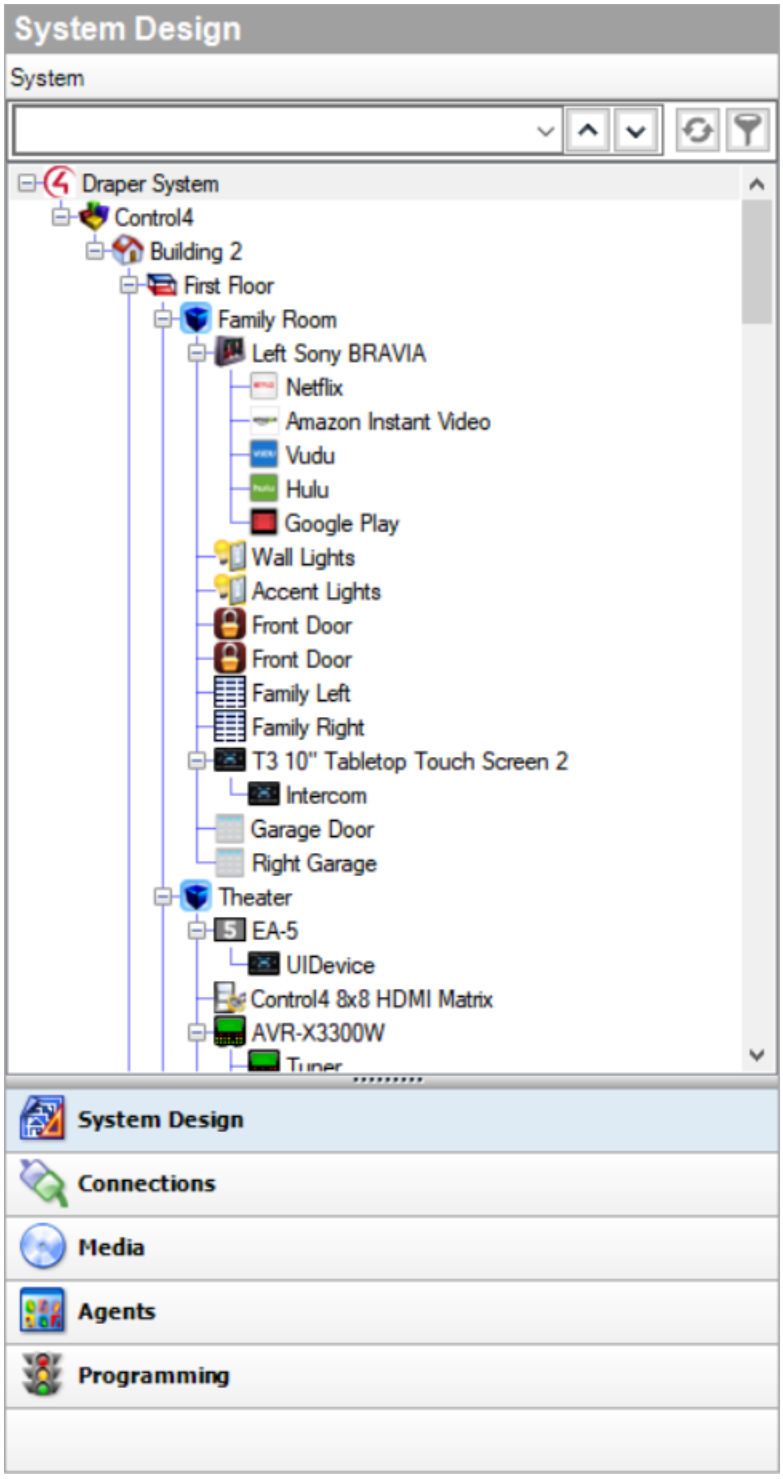
System Design pane

The System Design pane in the System Design view displays the project tree. You build the project by adding floors, rooms, and devices from the Items pane to the tree.

To access the System Design pane:

1. Start **Composer**.

Note: The example project tree below shows the project name (Main), site (Home), building (House), floors (Main), rooms (Family, etc.), and the devices already added to the project. If your project is new, the pane will show only the New Project icon and item. Rename your project by right-clicking the name and selecting **Rename**.



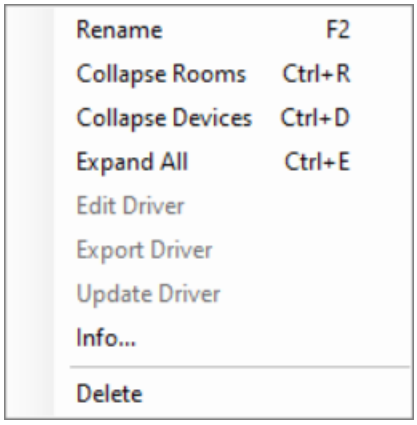
Use the project tree to:

- **Add Locations**—Lets you add locations (sites, buildings, and floors) to the project tree. Double-click to select an item from the **Items** pane > **Locations** tab to move

location items to the project tree. If you do not manually add the locations, Composer automatically adds generic locations.

- **Add Devices**—Lets you add devices (lights, VCRs, TVs, controllers, etc.) and their device driver to the project tree below the selected room. To add devices, click the **location** (where the device is installed) in the project tree, and then double-click a **device** in the **Items** pane > **My Drivers** or **Search** tabs (right pane) to move device to the project tree.
- For more information about how to create a project, see "Introduction."

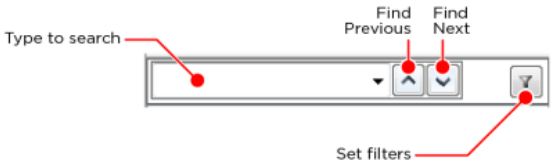
Right-click on a device, room, or other item in the project tree to bring up additional options for that item.



> **Tip**: You can use **Ctrl+R** to collapse rooms, **Ctrl+D** to collapse devices, or **Ctrl+E** to expand all even without right-clicking.

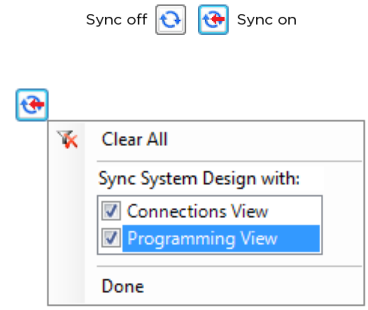
Project tree search, sync, and filter

To make it easier to find and manage devices in large projects, the project tree has search, sync, and filter controls.

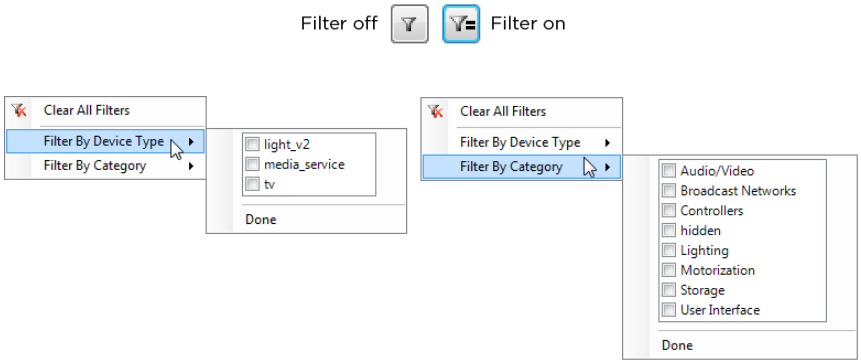


- **Search**—Type the device name to search for here. Click the **Find Next** button to jump to the next device of that name. Click the down arrow on the right side of the search box to select from previously used search terms.
- **Sync**—Use Sync to keep the same project device selected while switching between System Design, Connections, and Programming views. Click the

Sync button and select the checkbox for the views you want to keep synchronized with the System Design view, then click **Done**. To clear them, click the checkboxes or click **Clear All**.



- **Filters**—Use filters to hide or show only certain types of items in the project tree. Click the **Filters** button, then set filters by **Device Type** or **Category**. The *Device Type* list contains only device types already included in your project. Setting a filter under *Device Type* will clear any filters already set in *Category*, and vice versa. To clear all filters, click **Clear All Filters**.



Device Control window

The Device Control window in System Design lets you test and control a physical device (after identifying the device and making its connection) in Composer Pro to make sure it works in the system.

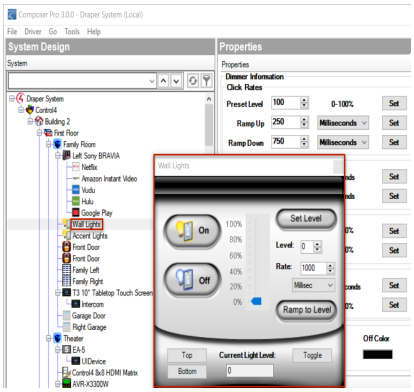
> Note: You must define the connections before you test or control the devices. See "Testing the device connections" for information about how to make the connections.

> Example: To use the Device Control for a dimmer, you click a button in the Device Control window to turn the dimmer on or off and change the light level. If the physical light changes also, you know the dimmer driver is added and the basic connections are made correctly.

To access the Device Control window:

1. Start **Composer**. The System Design view appears.

Double-click the **device** in the project tree to access the Device Control window (see below) for that device.

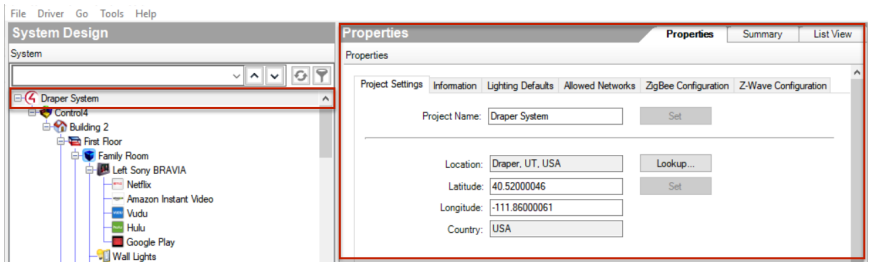


This window lets you change the configuration parameters (temporarily) and control a device. Later, you can set the parameters permanently in the Properties pane or Programming view.

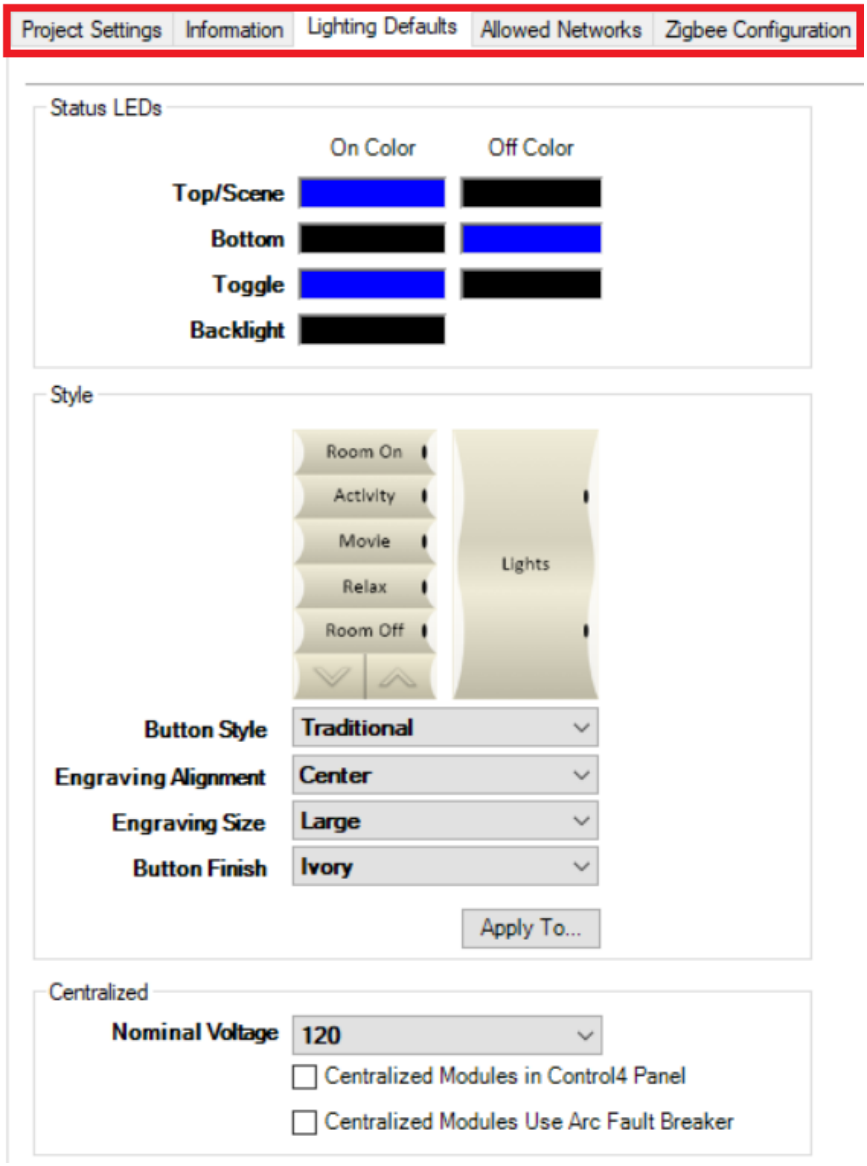
> Example: You can adjust and test the ramp rate of a dimmer to determine the desired ramp rate to set during programming.

Properties pane

In the System Design view, click the project name in the project tree to view the *Properties* pane (center pane).



The project Properties appear when you first start Composer Pro, or any time you select the project name (or root node) in the project tree. Different properties appear depending on the item you select.



This option lets you enter project-specific information; for example, the project name, location, and ZIP Code. Composer Pro automatically enters the latitude/longitude and date/time information after you provide the location and ZIP Code.

Properties Pane	
Project Settings tab	
Category	Boxes or Buttons
Project Name—Lets you enter/edit the name of the project.	N/A
Location—Lets you look up a location's latitude and longitude based on city, state, country, etc.	**Latitude/Longitude**—Lets the system calculate from the entered ZIP Code, the local latitude and longitude coordinate information. Knowing location information lets the system calculate local sunrise and sunset times. This is useful for programming lights to turn on at dusk and off at dawn. Using a ZIP Code to find the coordinates only provides a close estimate of latitude and longitude. If you want to enter exact coordinates, the fields can be edited. Also used for outside temperature on the touch screens. **Country**—Lets you select the country in which the project is located. **Lookup Button**—Lets you enter/edit the ZIP Code which identifies to the system the local cable, satellite, and broadcast channel programming. It also automatically provides latitude and longitude coordinate location.
Date and Time—Lets you set a date, time, and time zone for the Control4 system. By changing the time here and refreshing Navigators (File > Refresh Navigators), you reset the time on the entire system. However, Control4 systems with access to the Internet automatically synchronize the system clock using Network Time Protocol (NTP).	**Timezone**—Lets you set the appropriate time zone by clicking **Edit**. Changing the time zone causes the controller to reboot. **Display time using a 24-hour clock**—If checked, lets you use the 24-hour clock (0 to 2400 hours) rather than 12 am to 12 pm.
Project Settings Control—Lets you set a device in Composer that does not allow the setting to be overridden at the device.	**Push Settings From Project**—Check the box for devices to receive settings from the Composer project only. New settings in the Composer project override any settings at the device.
System Security—If set, all Navigators (Release 2.0 or later) must connect through a secure	Properties Pane: Information tab

Properties Pane	
connection.	
Localization—Lets you set the locale and character set for countries outside the United States.	**Locale**—Use the down arrow to change the locale.
Scale—Lets you select the temperature type.	**Fahrenheit** or **Celsius.**
Information tab	
Category	Boxes or Buttons
System Owner	**Name**, **Address, Phone, and Email**—Enter homeowner information into these fields.
Dealer Information	**Name, Address, Phone, Email, Primary Contact, Lead Installer, Original Install Date, and Date of Last Update**—Enter dealer information and project update dates into these fields.
Project Notes	Any notes the dealer wants to add can be stored here.

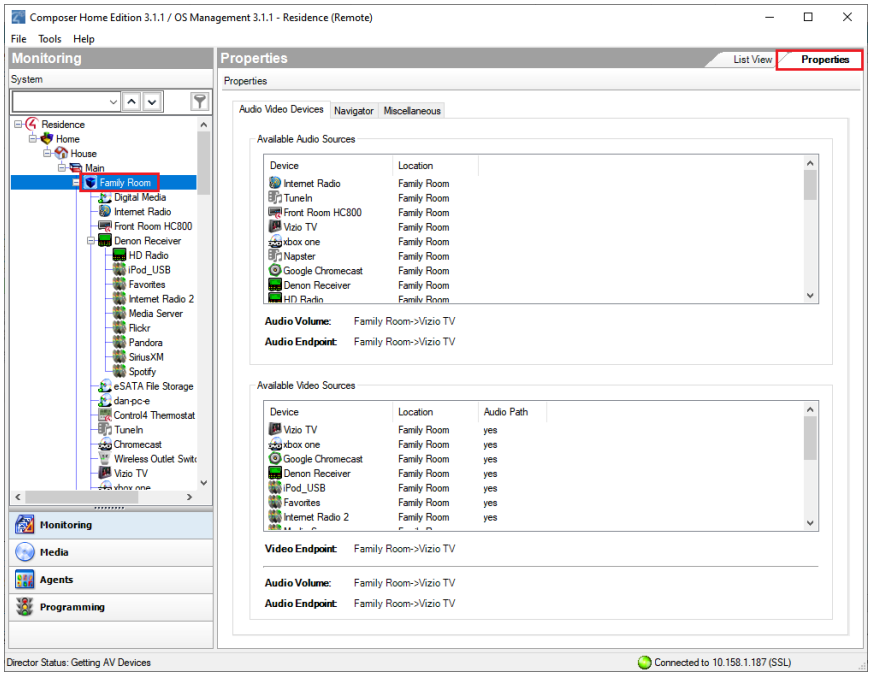
Lighting Defaults tab	
Category	Boxes or Buttons
Status LEDs—Lets you set default LED colors for switches, dimmers, and keypads.	**Top/Scene**—Set the default On and Off color for Top buttons and lighting scenes in the project. **Bottom**—Set the default On and Off color for Bottom buttons on devices in the project. **Toggle**—Set the default On and Off color for buttons configured to toggle lights or scenes in the project. **Backlight**—Set the default backlight color for devices with backlights in the project.
Style—Lets you set default engraving style settings for each device in the project.	**Button Style**—Set the default Button Style for devices in the project, **Traditional** or **Contemporary**. **Engraving Alignment**—Set the default alignment for engravings: **Left**, **Center**, or **Right**. **Engraving Size**—Select the default engraving text size: **Large** or **Standard**. **Finish**—Select the default button finish for devices in the project. Finish styles include: **White**, **Light Almond**, **Ivory**, **Brown**, **Black**, **Aluminum**, **Snow White**, **Biscuit**, and **Midnight Black**. Available finish styles may vary. **Apply To...**—Click **Apply To...** to apply the current lighting styles to desired devices in the project. Click next to a device, room, or the whole project to select the desired devices to change, and then click **Apply**.
Centralized—Lets you set default settings for Centralized Lighting devices in the project.	**Nominal Voltage**—Set the default voltage for all Centralized Lighting devices in the project. **Centralized Modules In Control4 Panel**—Set the default setting if your Centralized Lighting modules are in a Control4 panel or not. **Centralized Modules use Arc Fault Breaker**—Set the default setting if your Centralized Lighting modules use an arc fault breaker.
Allowed Networks tab	
Category	Boxes or Buttons
Subnets	By default, it is not possible to identify a device that resides on a different network (e.g., subnet) because

Lighting Defaults tab	
	Director actively excludes identification broadcasts received from devices on a different network. You can expand the list of allowed networks by adding one, or more, CIDR network specifications to the following list. For example: 192.168.2.0/24 For more examples see: https://en.wikipedia.org/wiki/Classless_Inter-Domain_Routing
Zigbee Configuration tab	
Category	Boxes or Buttons
Edit Zigbee Configuration	Click on this link to define, edit, and move Zigbee mesh configurations.
Refresh	Click on this link to refresh the Zigbee status view below.
Zigbee Network Status	Use this view to see the status of the Zigbee mesh(es) in your project. **Name**—Name of the device configured in the Zigbee mesh. **Controller Status**—The colored icon shows an at-a-glance status of the Zigbee network. Green for online, Yellow for offline, Red for error. **Zigbee Server**—The controller defined as the Zigbee Server will say “Enabled”. **Zigbee Status**—Shows the status of the Zigbee Server. “Running” means the Zigbee Server is configured and running. **Channel**—The current channel of the Zigbee mesh. **ZAP Status**—A controller configured as a ZAP will show as “Coordinator” or “Enabled”.
Z-Wave Configuration tab	
Category	Boxes or Buttons

Lighting Defaults tab	
Advanced	Use the **Learn, Network Update, Reset Defaults,** and **Send Node Info** buttons to manage your Z-Wave network. See the Z-Wave Setup Guide for more information (ctrl4.co/z-wave-sg)

Room Properties

The room *Properties* (System Design > Room > Properties) appear when you select a room in the System Design project tree.



The room *Properties* pane lets you view room-specific device and media information (for example, the iPod located in the Office is an available audio source in the Family room), and helps you troubleshoot any incorrect room connections.

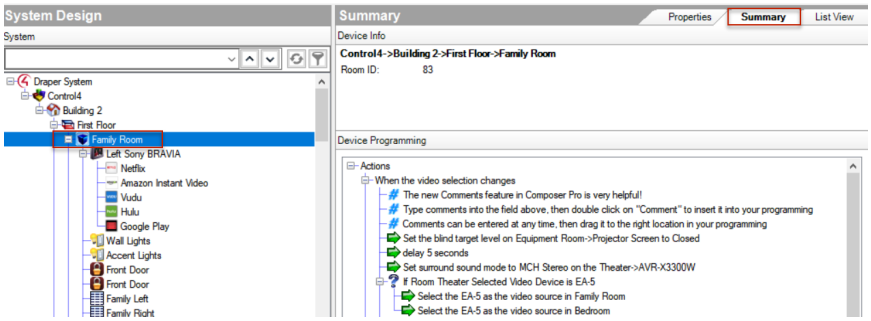
The **Audio/Video Devices** tablets you view the devices configured for each end point device and the devices that are available in the room.

> Example: If you can't play movies from a Disc Changer in a particular room, you can view the room's Properties to see if the disc changer shows up in the List view. If it does not, you are probably missing AV bindings in the path to the device. Detailed information about connections is available in the Composer Pro User Guide, or see "Connections view."

Properties Pane—Room Properties	
Category	Box or Button
Audio Video Devices tab—Provides information that lets you view all audio and video devices and control connections in a selected room.	**Audio Endpoint**—The device that is configured to play audio in the room. **Tip**: Which device needs to turn on and off to listen to any source of audio in the room? **Audio Volume**—The device that is configured to control the audio volume in the room. Tip: Which device do you need to send volume commands to in order to control the audio volume in the room? **Video Endpoint**—The device in the room that is configured to display the video in the room. Tip*:* Which video display device is in the room, or where does the video end up?
Navigator tab—Lets you hide and re-order device visibility for all Navigators (in Watch, Listen, etc.).	**Modify**—Lets you move the order of devices up or down, and hide or show them. Select the device in the *Menu* list.
Miscellaneous view—Lets you set the default audio and video volume for the room, for example, what the room will revert to after a power cycle. This is also where you set the IR Mask for the room.	**Enable Default Volume**—Select and use the up or down arrows to change the audio and video volume. **Mute When Paused**—Select this option to send a mute command when media is the room is paused. **Multi-Room Shared IR Settings**—Use the down arrow to select the IR.

Room Summary

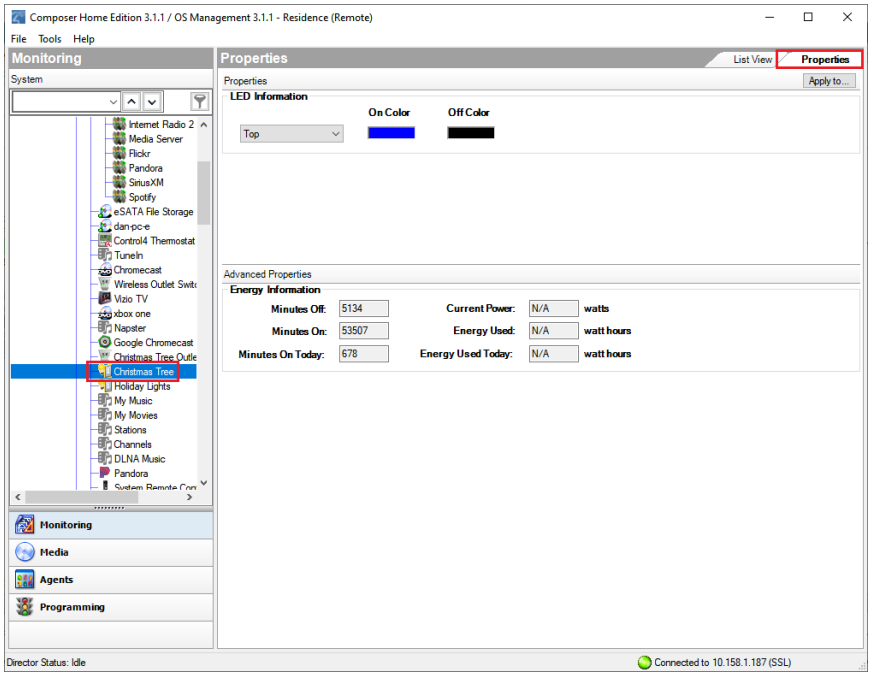
The room *Summary* (System Design > Room > Properties) appear when you select a room in the System Design project tree and click on the **Summary** tab..



This screen gives useful summary information for the room including room location in the project, Room ID (which can be helpful when reviewing project logs), and Device Programming that pertains to the room.

Device Properties

The device *Properties* (System Design > device > Properties) are visible when you select a device in the project tree. This option lets you modify the available (if any) user options for the selected device.



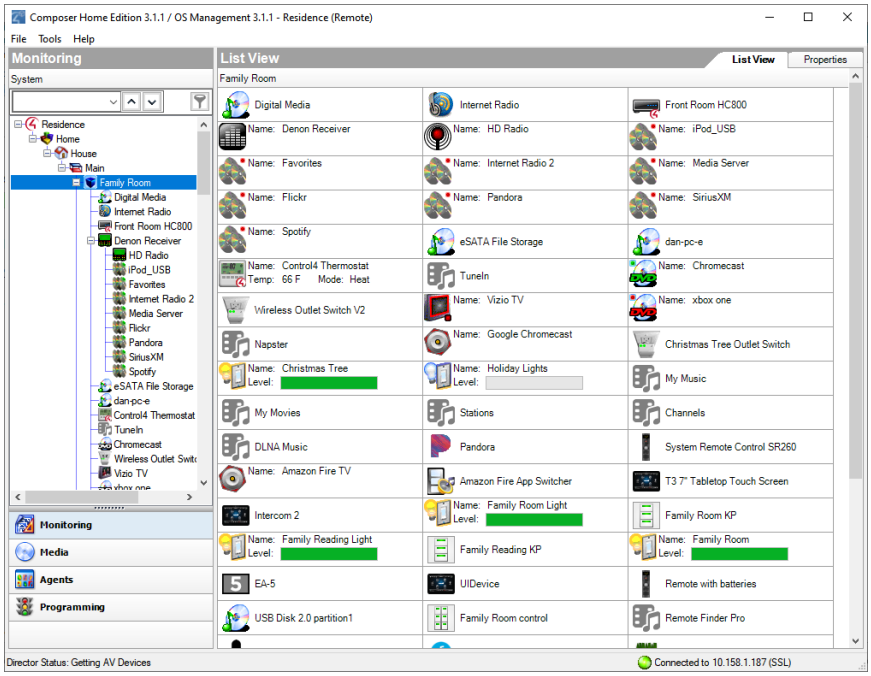
Properties Pane: Device Properties
Category
Properties—Lets you modify options (if available) that are common to all devices of that type. **Advanced Properties**—Lets you modify advanced options (if available) on some devices.

List View pane

Use the Control4 Composer Pro List View pane in System Design to view all of the devices in a room.

When you select a room or any device in a room in the project tree, and then click **List View**, all of the devices installed in that room display; for example, notice all of the devices installed in the Family room (shown below).

> **Note**: The List View shows all the devices in a given area and the current state of contact inputs or other devices. When selecting the site, building, floor, or room, all of the devices associated in that area are visible. If a single device is selected in the project tree, List View shows all devices that are in the same room.



To access the List View pane:

1. Start Composer.
2. In the project tree, click any object.
3. In the *Properties* pane, click the **List View** tab.
4. You can double-click a device in the List View pane to display its Device Control window.

Items pane

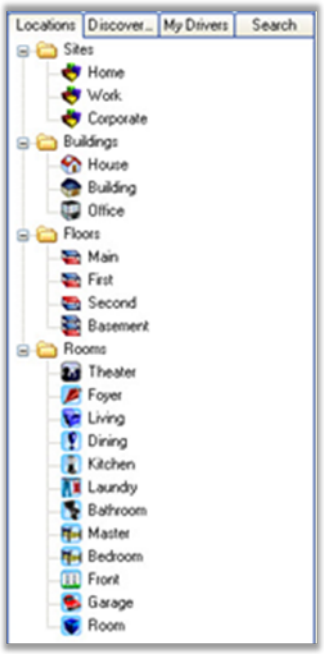
The Control4 Composer Pro Items pane lets you build the project tree either by:

- Dragging and dropping items from the Items pane to the project tree, or by
- Double-clicking the item in the Items pane (which adds it to the project tree).

> Note: In OS 2.3.0 or later, specific devices can be added and identified in the project tree automatically using the Discovered tab (via SDDP). See the figure below and the Composer Pro User Guide for details.

To access the Items pane:

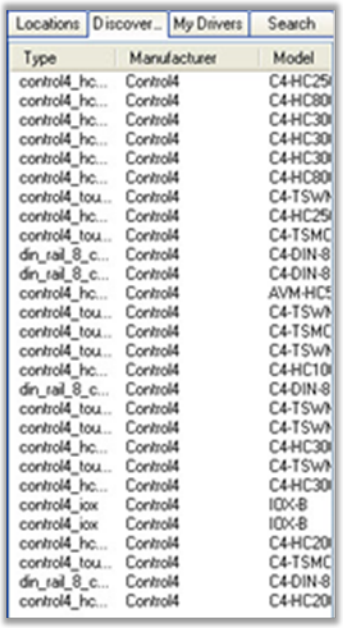
1. Start Composer Pro. The System Design view appears by default.
2. View the Items pane on the right side.
3. Click the **Locations** tab.



The *Locations* tab displays the list of available objects by their physical location in the home (site, building, floor, or room) that you can add to a project. Use the items in the *Locations* tab to organize the project tree by area.

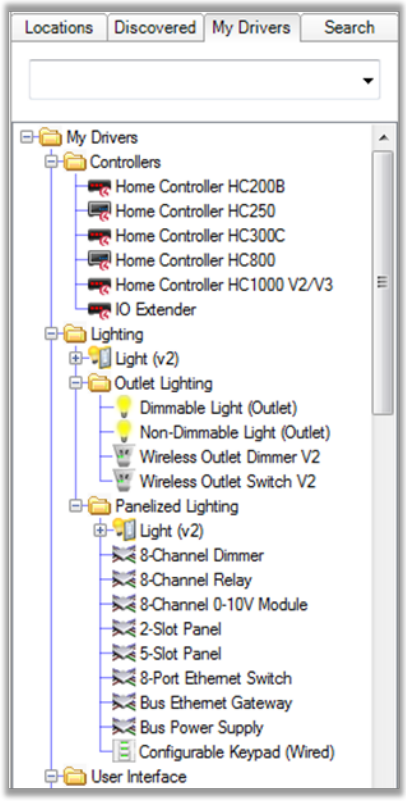
Example: The Sites object shows which sites (Home, Work, Corporate, etc.) you can add to your project tree as you begin to build your design.

4. Click the **Discovered** tab.



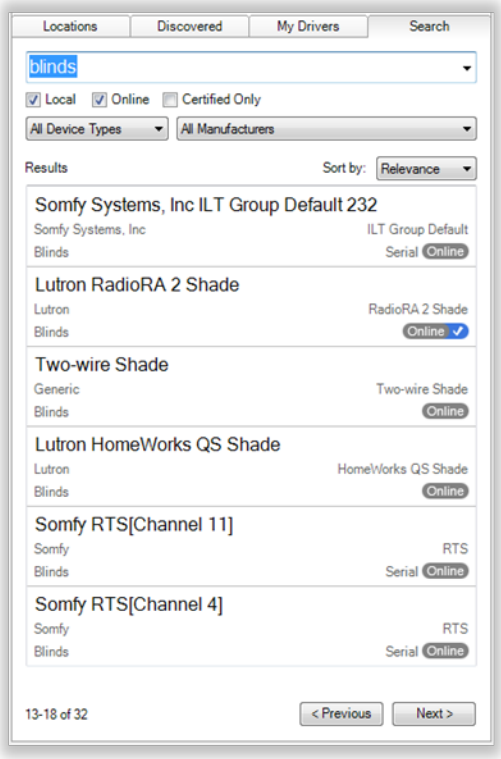
The *Discovered* tab (supported for devices added in OS 2.3 and later) lists the devices that can be automatically discovered by the system. You simply click where in the project (room) you want the device to go (left pane), and then double-click the device in the list; it will be added and identified automatically. See "Configuring devices" in the Composer Pro User Guide for details. This feature is ideal for smaller systems.

5. Click the **My Drivers** tab.



The *My Drivers* tab displays a list of device drivers you can add to the project tree. This is a list of common Control4 and third-party device drivers. If you can't find the driver you want, go to Step 6.

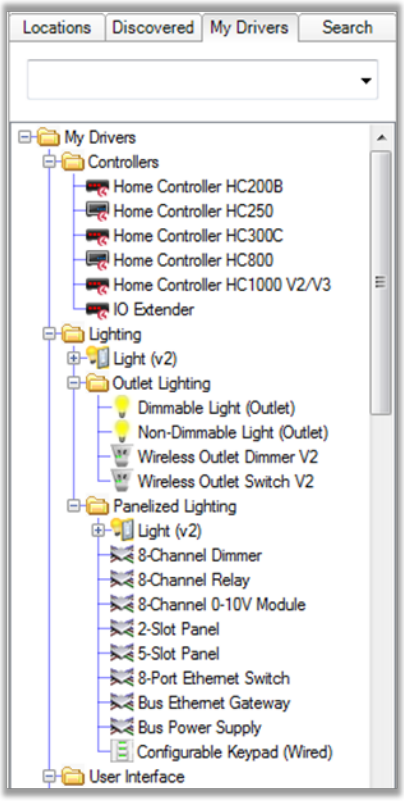
6. To locate a driver that is not in the common list, click the **Search** tab. If you can't find the driver you want here, you may need to create your own driver. See "Search tab" for details about how to use the *Search* function.



The *Search* tab lets you search for drivers that don't appear in the My Drivers tab.

My Drivers tab

Use the *My Drivers* tab to add Control4 and popular third-party device drivers to the project tree.



To access the My Drivers tab:

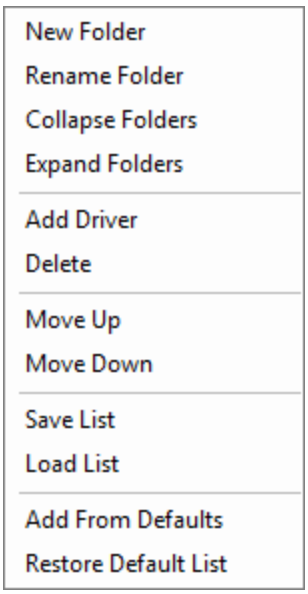
1. Start Composer Pro and connect to a Director.
2. In the project tree, click the room to add the driver to.

   In the Items pane (right side), click the **My Drivers** tab. A list of devices appears.
3. Click to expand a category, and type in the search box to search for a device name.
4. Double-click a device driver in the list to add it to the project tree. For information about configuring devices after adding them to the project tree, see "Configuring devices" in the Composer Pro User Guide.
5. The *My Drivers* list is only a set of common devices. If you do not see the device driver you need, you can find and add device drivers to the *My Drivers* list using the *Search* tab.

If you select a generic device, a dialog box with a list of devices appears. Select a specific model to add it to the project tree. If you can't find the device driver you need, you can either modify an existing one or create a new one. See the Composer Pro User Guide for details.

My Drivers options

If you right-click any device driver in the *My Drivers* list, the following options display:



- **New Folder**—Create a new folder in the *My Drivers* list.
- **Rename Folder**—Rename an existing folder.
- **Collapse Folders**—Close all folders.
- **Expand Folders**—Open all folders to expose the items.
- **Add Driver**—Add a driver to the *My Drivers* list..
- **Delete**—Remove an existing driver from the *My Drivers* list.
- **Move Up**—Move the item up the list.
- **Move Down**—Move the item down the list.
- **Save List**—Save the *My Drivers* list.
- **Load List**—Load a saved list.
- **Add from Defaults**—Add a driver from the default list.
- **Restore Default List**—Restore the device list to the default contents.

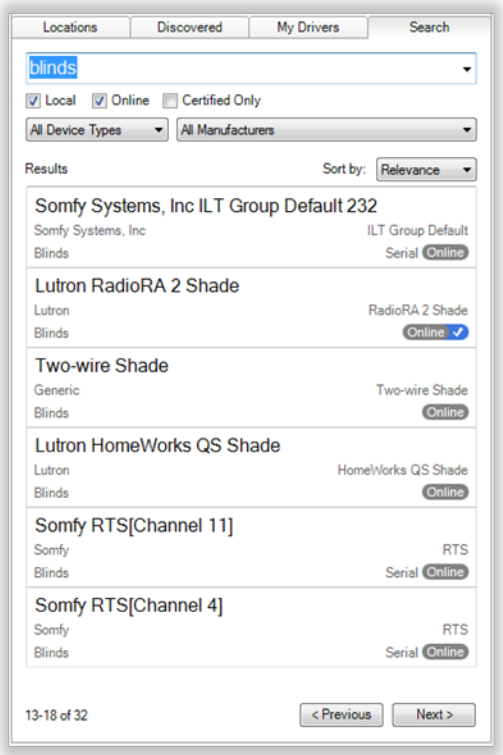
Search tab

Use the *Search* tab to search for and add device drivers to the project tree that do not appear in the *My Drivers* list.

To find a device driver using Search:

1. Start Composer Pro and connect to a Director.
2. In the project tree, click the room to add the driver to.

3. In the *Items* pane, click the **Search** tab.



To find a device driver:

1. From the project tree, select the room where the device resides.
2. In the *Search* tab, type the text to search for in the search box. As you type, matching options are displayed.
3. To narrow down the search, select the device type and the manufacturer from the respective filters.
4. Drag the driver to the project tree, or double-click the device driver to add it the project tree.

- [**search text field**]—Type the text to search for here. You can use the drop-down menu to select terms that were previously typed.
- **Local (default)**—The Local checkbox lets you view device drivers stored on your local computer.
- **Online**—The Online checkbox lets you view and download drivers from the online database.
- **Certified Only**—This checkbox specifies that only Control4-Certified drivers will appear in the search results.
- **Device Types**—Lets you select the device type (proxy), for example, AV Switch (includes audio switches), Blinds, CD, Disc Changer (includes DVD and

CD Changers), DVD, Light, Receiver, Satellite (includes DVRs), Cable TV, Television, Thermostat, Tuner, VCR and more.

- **Manufacturers**—Lets you select the manufacturer.
- **Sort by**—Lets you select the order that search results are displayed.
- **Results**—Detailed search results appear, including the manufacturer, model, and driver location.

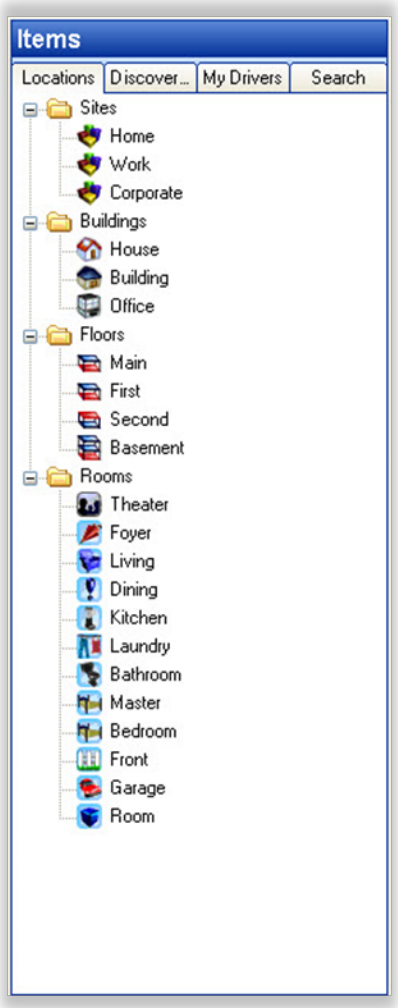
Locations tab

Use the *Locations* tab to add the list of available locations (site, building, floor, room, etc.) to a project.

To access the Locations tab:

1. In the project tree, click the site, building, or floor where you want to add the location.
2. In the *Items* pane (right side), click the **Locations** tab.
3. Double-click a location in the *Locations* tab to add it to the project tree.

Click **Sites**, **Buildings**, **Floors** or **Rooms** to expand the category.

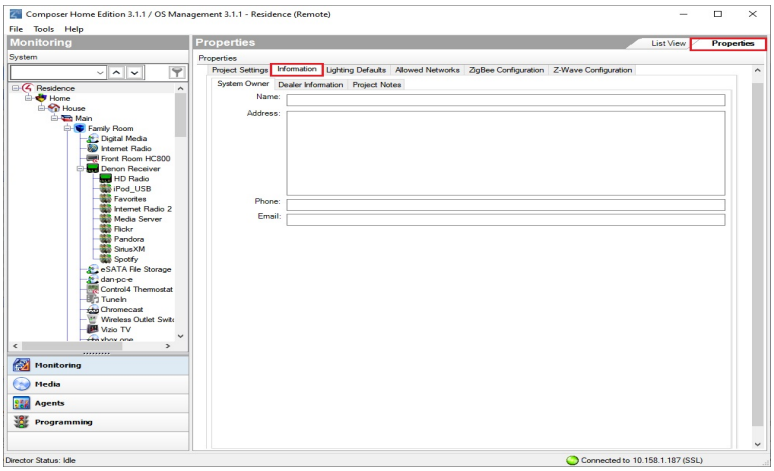


- **Sites**—Define the project site type. Defines the main location, and identifies the type of system you are designing, for example, a residence, commercial, or corporate site.
- **Buildings**—Place the buildings on the site (House, Building, Office, etc.). Defines the buildings located on the site. For example, a residence might have a separate Garage, Workshop, Shed, or Pool house. A Campus might have a building for each college.
- **Floors**—Add the floors in each building (Main, Second, etc.). Lets you describe the various floors in each building, for example, Main and Basement or First, Second, and Third floors.
- **Rooms**—Add the rooms on each floor (Bedroom, Bathroom, etc.). Lets you describe the various rooms on a floor, for example, Kitchen, Living Room, Great Room, Master Bedroom, Laundry Room, etc.

Info pane

Use the *Info* pane in System Design to view information about the system owner and Control4 dealer.

> Tip: Some of the information you enter here is added to the touch screens, Control4 apps, or on-screen navigators (More > Settings > About) in Release 2.0 or later. For example, the longitude and latitude display the outside temperature on a touch screen, Control4 app, or on-screen Navigator.



To access the Info pane:

1. In *System Design*, click the **Info** tab.
2. View, add or change existing information about the system owner or dealer in each box.
3. Check and change the data periodically as needed.

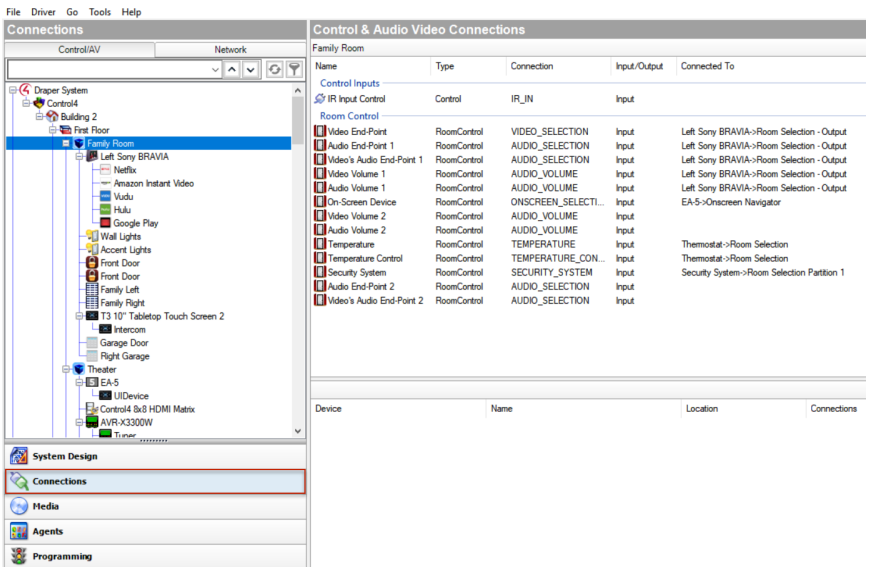
The Info pane lists:

- **System Owner information**
- Name
- Address
- Phone
- Email address
- **Dealer information**
- Name
- Address
- Phone
- Email address

- Primary Contact
- Lead Installer
- Original Install Date
- Date of Last Update
- **Installation Notes**—Use the *Notes* box to add any relevant details about a particular installation.

Connections view

Use the *Connections* view to define to the Control4 system the physical connections and addresses of each device added to the Control4 system. The connections are added automatically when you add the device, but you need to connect each device to other devices in the system. See the Composer Pro User Guide for details.



To access the Connections view:

1. Click **Connections** at the bottom of the left pane (see orange highlight).

   The *Connections* pane (left side) has two tabs:

   - *Control/AV*—Lets you define control and audio or video connections.
   - *Network*—Lets you identify devices with their IP address or network name.

   The *Control & Audio Video Connections* pane has three categories and several columns:

   - **Categories**:
   - **Audio/Video Inputs**
   - **Control Inputs**
   - **Room Control**

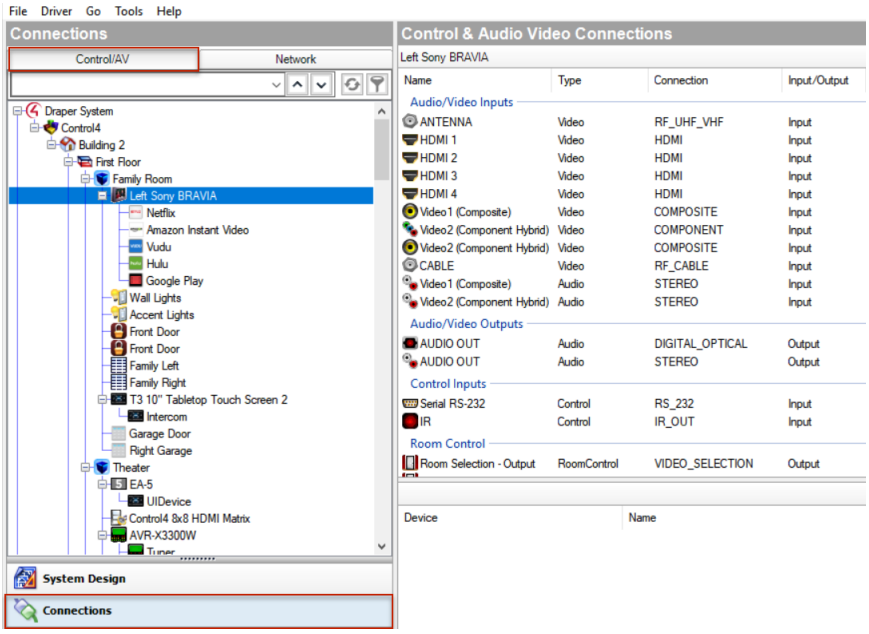
- **Columns**:
- **Name**—The name of the connection
- **Type**—The connection category, for example, Audio or RoomControl
- **Connection**—The connection type, for example, HDMI or Component.
- **Input/Output**—Shows whether the connection is for input or output.
- **Connected To**—Shows which device this connection is connected to.

The bottom pane has several columns:

- **Device**—The name of the device.
- **Name**—The name of the connection on the device.
- **Location**—The room where the device is located in the project tree.
- **Connections**—Lists the devices connected to this connection.

Control/AV tab

Use the *Control/AV* tab in the *Connections* view to define the physical connections between the Control4 controller and other devices you add to the Control4 system, including AV signals, IRs, relays, contacts, and/or serial connections.



To access the Control/AV tab:

1. Click **Connections** at the bottom of the left pane.
2. In the *Connections* pane, click the **Control/AV** tab.

The *Control/AV* tab contains two panes:

- The left pane displays the project tree.
- The right pane lists the actual device connections.

3. If you click an object in the project tree of the *Control/AV* tab, you are selecting either a room or a device to display the following types of connections in the *Control & Audio Video Connections* pane:

   - **Room Connections**—Lets you define the connections specific to the room which can include, for example, a thermostat that you can control from a touch screen, Control4 app, or on-screen Navigator. Room connections help you customize and design the devices to perform specific functions in the room.

   If you select a room (for example, **Family**) on the *Control/AV* tab, the available room connections appear in the pane under *Family* (the bar just below *Control & Audio Video Connections*). The Video, Audio, or Video's Audio End-Points and the Audio or Video Volume are all defined for the room.

   - **Control & Audio Video Connections**—If you select a device in the *Connections* > *Control/AV* tab, the available *Control & Audio Video Connections* pane displays the following panes:
   - **Available inputs and outputs**—The top pane identifies the available inputs and outputs of a device to make its connections.
   - **Connected items**—When you select an item in the top pane, the bottom pane displays the available connections for that input or output.

4. To make the actual connection, select the item in the top pane, and drag it to the associated item in the bottom pane.

Note: If you select a device on the project tree and nothing appears, the device doesn't have any control or AV connections; maybe it uses the network connection to communicate to the controller. In these cases, use the Network tab to identify this device's network address to the system. See "Network Tab" below.

The available input and output categories for the selected device display in this order:

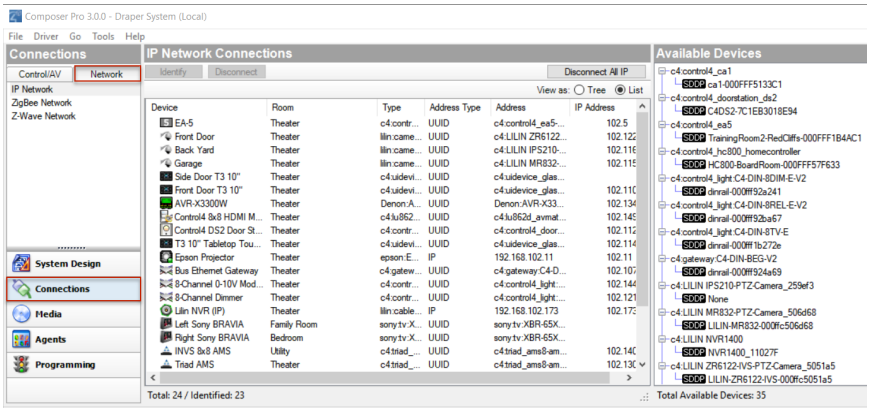
- **Audio/Video Inputs**—Shows the available audio and video inputs. In this category, the video connections are listed first, and then the audio connections.
- **Audio/Video Outputs**—Shows the available audio and video outputs. In this category, the video connections are listed first, and then the audio connections.
- **Control Inputs**—Shows the available input control connection.
- **Control Outputs**—Shows the available output control connection.
- **Room Control**—Lists the available room control connections.

If the connections you need do not appear, you can edit the driver to create the needed connections. From the *Driver* menu (in the Composer menu bar), select **Edit Existing Driver** to open the Driver Wizard.

> Note: Editing drivers is an advanced task and is out of the scope of this document. Details about the Driver Wizard are discussed in the Composer Pro User Guide or you can use the Driver Editor. Talk to your Control4 Sales Representative to find out how to order this tool.

Network tab

Use the *Network* tab in the *Connections* view to display a list of all devices in the system that have a network connection and use a network address. Click the **Identify** button (for releases older than OS 2.2 or to re-identify a device) to establish the network connection for any device that communicates to the controller using TCP/IP, Wi-Fi, Zigbee, or any other device that uses a network address.



To access the Network tab:

1. Click **Connections** at the bottom of the System Design pane.
2. In the Connections pane, click the **Network** tab. The *Network* tab displays the network type, for example, IP Network, along with the
   - *IP Network Connections* pane, and the
   - *Available Devices* pane.

   The *IP Network Connections* pane lists all devices for the selected network type. After identifying the network connection, the device's address appears in the *IP Network Connections* pane under *Address*.
   - Buttons
   - **Identify**—Select a device from the IP Network Connections pane and click **Identify** to have Composer identify the device. This causes Director to listen on the network for the device to broadcast its network address, Zigbee address, or network name. Once Director is waiting for the device to identify

itself, you must cause the device to broadcast its address on the network. The *Identify* window gives a description on how to make a device identify itself.

- **Disconnect**—Select the device, and then click **Disconnect** to remove the connection.
- **Disconnect All**—Click **Disconnect All** to remove all of the connections.
- Columns
- **Device**—The name of the device.
- **Room**—The room in which the device resides.
- **Type**—The device type recognized by the system.
- **Address Type**—The type of address used, for example, Zigbee.
- **Address**—The deviceaddress.

After identifying the network connection, the device address appears. If a device does not have an address next to it, it needs to be identified to the system.

The Available Devices pane shows the list of devices that the network has discovered. Each device shows up under the service type. It also displays the total number of devices found and the number of connected or unconnected devices of each type.

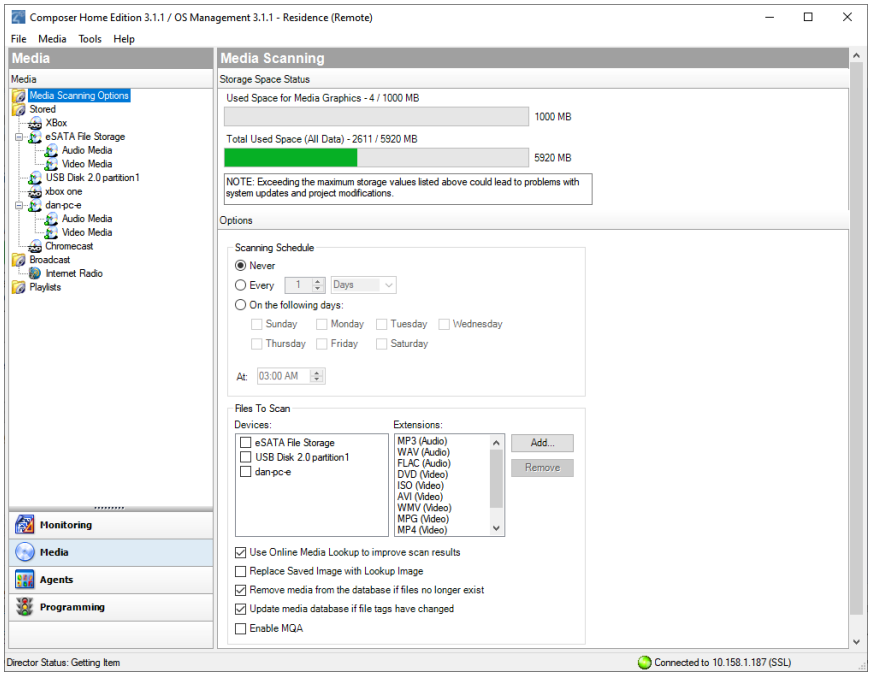
> Tip: Throughout the Control4 system, devices are identified using various types of addresses, for example, Zigbee, Zigbee Pro, IP, UDP, etc. These types of addresses are known as “network addresses.”

Media view

Use the *Media* view to select the stored or broadcast media on touch screens, Control4 apps, and on-screen Navigators. The Media view lets you add media selections to the Control4 system: stored music and media collections from a network-attached storage device (NAS) or other devices, for example, a Dock for iPod, DVD player or disc changer, broadcasts, channels, and stations.

To view and select the media from the Navigators, you first need to add and scan the media to the Control4 controller (for example, an EA-3 controller). With MP3, WMA, FLAC, or AAC files that you add and scan, you can create playlists saved to the controller (if it has a hard drive) in the media database. See the Composer Pro User Guide for details.

Other Media Managers: You can use other media managers, for example, iTunes, Windows Media Player, and Media Monkey to stream MP3s, WMAs, or MP4s. And your customers can use Composer Media Edition (Composer ME) or Composer Home Edition (Composer HE) to add media files to Control4.



To access the Media view:

1. Click **Media** at the bottom of the System Design pane.
2. In the *Media* pane, view the media devices. In the *Media* view, the left-side selections change the right-side views.

The system can access and use several types of media and supports various Media Scanning options:

- **Stored** media (e.g., DVDs) includes the possible media types that store media:
- **Controller**—Lets you store MP3s, WMAs, or MP4s in the digital audio database of the controller (if you have a controller with a hard drive).
- **CD**—Lets you store CD cover art, albums, artist ratings, and genre (Rock, Jazz, Country, etc.).
- **DVD Player** or **Disc Changer**—Lets you store DVD and CD (when DVD supports CD) selections by viewing cover art, title, info, results, media, and disc list.
- **MP3s** on **Digital Audio Player**—Lets you store MP3 — HDD music cover art, album, artist rating, and genre (Rock, Jazz, Country, etc.).
- **External or Network File Storage Devices**—Lets you store MP3, WMA, MP4, FLAC, or AAC formats on an external hard drive, USB drive, or server.
- **Screen Saver**—Lets you store the custom images to be used as screen savers on the Navigators.
- **Internet radio**—Lets you assign a particular Internet radio station with cover art.

- **Broadcast** media (for example, Cable/Satellite) includes the possible media types:
- **Direct TV**—Lets you view DIRECTV channel options, including station ID, genre, rating and music channel.
- **Dish Network**—Lets you view Dish Network channel options, including station ID, genre, rating, and music channel.
- **Cable TV**—Lets you view Cable channel options, including station ID, genre, rating, and music channel.
- **UHF/VHF**—Lets you view the UHF channel options, including station ID, genre, rating, and HDTV.
- **AM/FM/XM**—Lets you scan AM, FM, and XM radio stations.
- **Playlists** includes the possible media types:
- **MP3 on Digital Audio Player**—Lets you play and view MP3 or MP4 — HDD music cover art, album, artist rating, and genre (Rock, Jazz, Country, etc.).
- **CD**—Lets you play and view CD cover art, albums, the artist ratings, and genre (Rock, Jazz, Country, etc.).
- **Controller**—Lets you play MP3, WMA, MP4, FLAC, or AAC formats from the controller (if supported).
- **External or Network File Storage Devices**—Lets you play MP3, WMA, MP4, FLAC, or AAC formats from an external hard drive, USB drive, or server.
- **DVD Player or Disc Changer**—Lets you play DVD and CD (when DVD supports CD) selections and view cover art, title, info, results, media, and disc list.

Possible buttons

One or more of these buttons may appear in the center pane depending on which category you select:

- **Edit**—Lets you edit the information for an existing album or movie.
- **New**—A dialog box opens. You can add information for a new album or movie, etc.
- **Delete**—Lets you remove an existing item from the list.
- **Add**—Lets you add media to your system, for example, MP3, WMA, MP4, FLAC, or AAC files.
- **Scan**—Lets you scan the selected media type or storage location for music or media information
- **Configure**—Lets you select the storage device on which the media you're configuring resides.

Right-click options

Right-click on a device in *Stored* media or *Broadcast* media to bring up various options:

- **Clear Media List**—Use *Clear Media List* with caution because it clears all media from the device—and for a controller, you will have to start over by adding each album again.
- **Export Media List and Export Playlists**—Lets you save an XML file of your lists; if you ever clear your project you won't have to rebuild the lists.
- **Import Media List and Import Playlists**—Lets you recover your media lists after you've cleared your project.
- **Import DVD List from File**—Lets you import an Excel list of DVD titles for a Disc Changer.
- **New Playlist**—Lets you create a playlist which appears in the Playlists type.
- **Delete Playlist**—Lets you delete an existing playlist.
- **Rename Playlist**—Lets you rename an existing playlist.

Right-click on **Playlists** to display *New Playlist*.

Right-click on **a playlist name** to display these options:

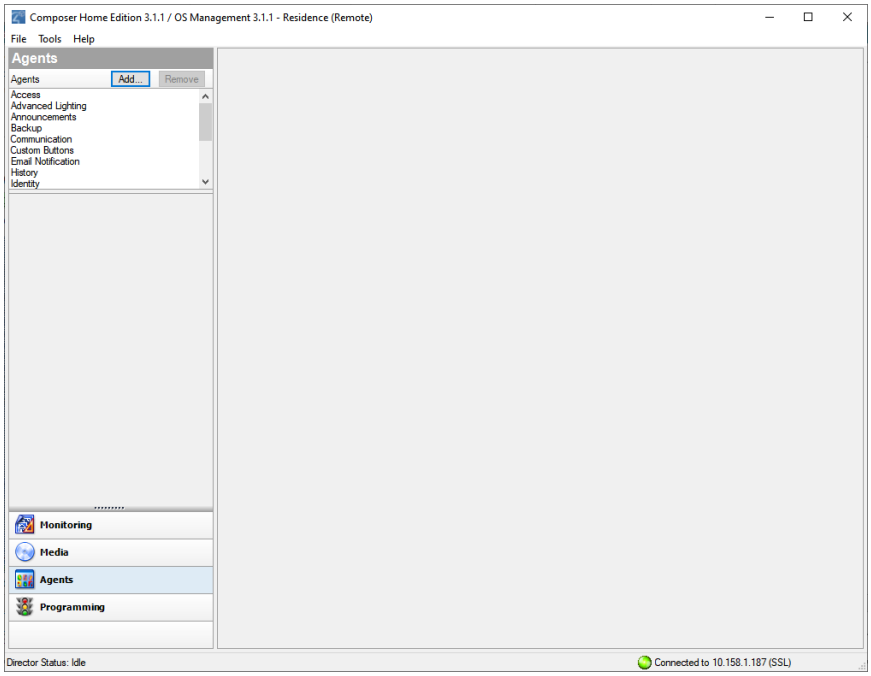
- Export Playlists
- Import Playlists
- New Playlist
- Delete Playlist
- Rename Playlist

Right-click on the individual **songs** in the window below the albums to edit song information or delete individual songs.

Agents view

Use the *Agents* view to perform more complex programming by module.

> Note: See Programming with agents for help configuring and using these agents.



To access the Agents view:

1. Click **Agents** at the bottom of the System Design pane.
2. In the *Agents* pane, view the list of agents and their variables.

   Available agents include:

   - Access
   - Advanced Lighting Scenes
   - Announcements
   - Backup
   - Communication
   - Custom Buttons
   - Email Notification
   - Guest Services
   - History
   - Identity
   - Light Properties
   - Lighting Scenes
   - Macros

- Media Scenes
- Media Sessions
- Navigator
- Push Notification
- Scheduler
- Screen Saver
- Timer
- Variables
- UI Configuration
- Wakeup/Goodnight

> Example: The Scheduler agent lets you program using dates and times. See Using the Scheduler agent for examples.

Common buttons available on some agents in the *Agents* view:

- **Add**—Lets you add agents to your system.
- **Remove**—Lets you remove agents from your system.
- **New**—Lets you create a new instance for customizing the selected agent in the *Agents* pane. For each specific instance of the agent, you provide a unique name and customize it according to your needs.
- **Delete**—Lets you remove an existing instance of the selected agent in the *Agents* pane.
- **Save**—Lets you save the agent-specific information. Not all agents require a manual save option. In most cases, the agent information saves automatically.

Programming view

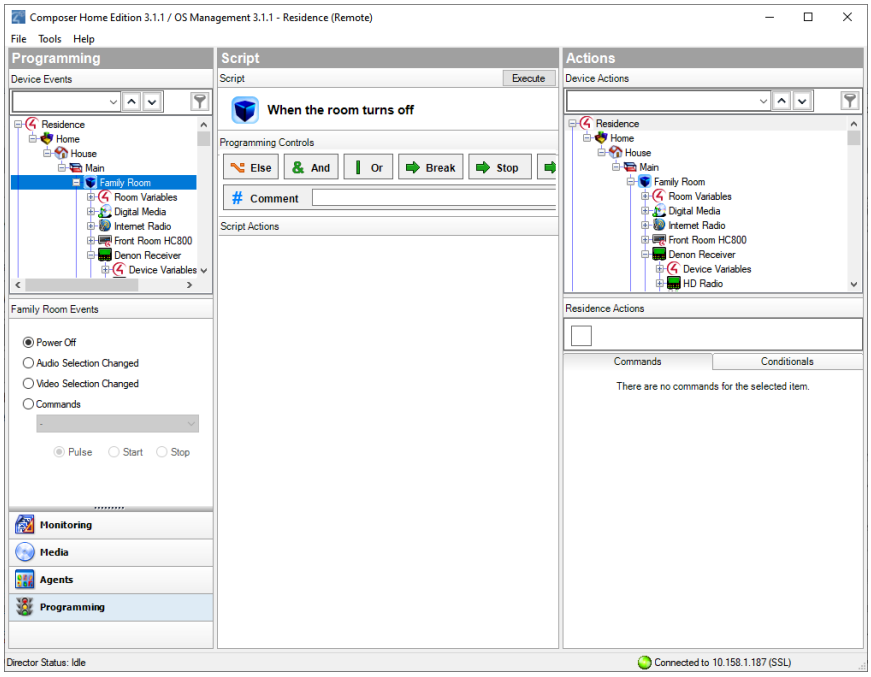
Use the *Programming* view to have the Control4 system control devices by identifying to the system any device behavior or configuration options that you want to occur automatically. The Programming view lets you create a program script using the drag-and-drop method.

> Note: Programming is an advanced feature in Composer Pro. Detailed information about programming is explained in the Composer Pro User Guide. This section discusses some basics.

All programming is based on events in the Control4 system. For example, a door that opens is an event. When an event occurs in the system, it can trigger other programmed actions to run.

> Example: When the Bathroom door opens (event occurs), program the Bathroom light to turn on (action taken).

Another example is shown in the figure below. Note the text in the *Script* pane (center pane). The event is "When the Family > Left Dimmer top button is pushed," and the action is "Open the Garage > Garage Door (Sensor)." The event came from the *Events* pane, and the action came from the *Actions* pane.



To access the Programming view:

1. Click **Programming** at the bottom of the System Design pane.
2. In the *Programming* pane, view the list of *Device Events* (see below) and events for the object selected.

   The *Programming* view consists of several panes:

   - **Programming**:
   - **Device Events (left pane)**—Displays all devices that have associated events in the project tree.
   - **<Device> or <Room> Events (left pane)**—Displays the available events for the currently selected device or room in the *Device Events* project tree. If there are no events for that device or room, none are displayed.
   - **Script (center pane)**—Displays the script associated with the currently-selected event from the *Device Events* pane. You drag-and-drop an action from the *<Project Title> Actions* pane to arrange the order of actions and nest them in the *Script* pane.
   - **Actions**:

- **Device Actions (right pane)**—Displays all available device options with associated actions you can use to write your script.
- **<Project Title> Actions (right pane)**—Displays the *Command*, *Conditionals*, and *Loops* tabs. You move commands, conditionals, and loops into the *Script* pane from this pane.

To add an action to the script:

1. Select the device in the *Device Action* project tree (right pane).
2. Select the type of action you want in the *Actions* pane.
3. Click the green arrow.
4. Drag and drop the action to the *Script* pane.

- **Commands tab**—Use this tab to select commands (delete, add, etc.) to use for your script.
- **Conditionals tab**—Use this tab to select conditionals ('if' statements) to use for your script.
- **Loops tab**—Use this tab to select loops ('while' statements, etc.) to use for your script.

Composer Pro menu options

When you start Composer Pro and connect to Director, the menu bar appears at the top of the Composer screen.



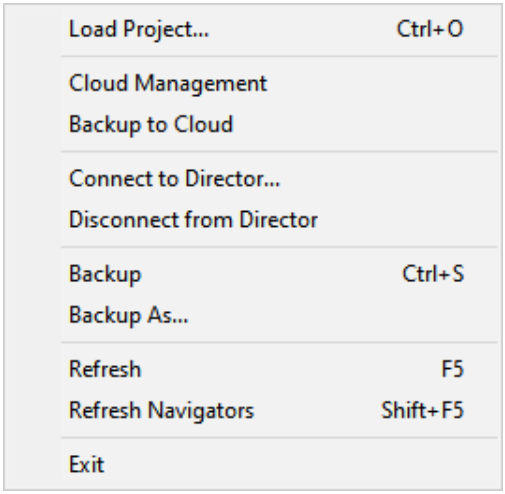
The menu bar provides the following menu items:

- **File**—Lets you perform typical file management tasks, clear or load projects, connect or disconnect to the local Director, update both the Composer and Navigator software, and exit Composer.
- **Media**—(only appears when the Media view is selected)—Lets you perform tasks regarding music and media lists.
- **Driver**—Lets you create, copy, edit, add, or manage drivers to enable devices to work on the system.
- **Go**—Lets you access the various Composer Pro views, including System Design (Ctrl+1), Connections (Ctrl+2), Media (Ctrl+3), Agents (Ctrl+4), and Programming (Ctrl+5).
- **Tools**—Lets you view Network Tools, System Manager, Zigbee Health, Device Logs, Detective Suite, Reports (if installed), System Diagnostics, Account Services, and Update Manager.
- **Feedback**—Leave feedback for Composer or Driver Suggestions.

- **Help**—Lets you view this document in help form plus version information.

File menu

Access the *File* menu from the menu bar on any Composer screen.



From the *File* menu, you can perform project file management tasks:

- Manage the project (clear, load, back up, etc.).
- Manage cloud backups.
- Connect to Director.
- Refresh Composer Pro.
- Refresh the Navigators: touch screens, Control4 apps, or on-screen Navigator.
- Validate Project

The file management options apply to the files you back up on your computer called *project files* (project name plus a .c4p extension). Project files are saved by default to the My Documents directory under Control4/Projects.

When you set up a Control4 system, you create project configuration information. This information is created live on the controller hardware, or backed up to a project file on a computer that lets you save specific information about each system, including devices, connections, configuration, programming information, and media. The project configuration is automatically stored on the controller hardware to which you are connected from your computer.

Backing up the project lets you save a copy of the project on your computer which is always recommended whenever you make changes in Composer Pro or update the system.

The following options are available:

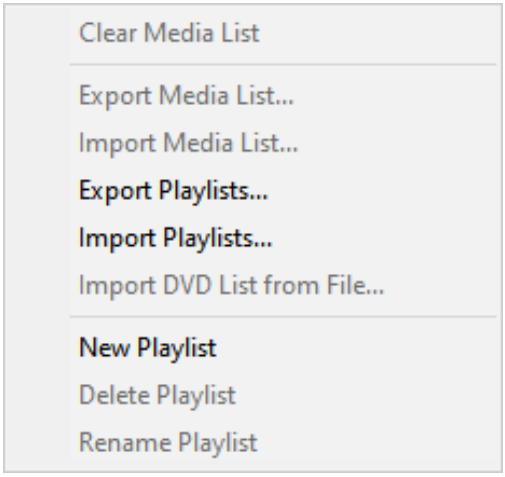
- **Clear Project**—Removes any project configuration from the hard drive on the controller. Composer Pro prompts you for a backup before erasing the project configuration information to present a blank project. Use this option with caution.

- **Load Project**—Loads a selected project into the currently-connected controller. Composer Pro prompts you for a backup before it clears the project configuration information, and replaces it with a selected project you can browse to and load.
- **Cloud Management**—Manage online backups saved from the registered system. You can load a cloud project to the controller, delete a cloud project, add a project to the cloud, show a history of cloud backups for this project, and save a cloud project to your local computer.
- **Backup to Cloud**—Creates a backup of the project and saves it to Control4 online services. Requires a valid 4Sight subscription.
- **Connect to Director**—Connects you to a Director residing on the controller. When you connect, project configuration information from the controller is presented to the screen in Composer Pro.
- **Disconnect from Director**—Disconnects you from a Director. Composer prompts you to back up your project before disconnecting you from the currently-connected Director. This option is available when connected to a Director.
- **Back up**—Backs up the current project to your computer. The first time you back up your project, Composer prompts you for a filename. It also prompts you to back up any media information. If you select this option, the current project becomes an option in the File > Load Project list.
- **Back up As**—Backs up the current project, and prompts you to enter the name of the file. It also prompts you to back up any media information. If you select this option, the current project becomes an option in the File > Load Project list.
- **Refresh**—Refreshes the current Composer Pro project.
- **Refresh Navigators**—Refreshes the Navigators connected to the system. Note: Control4 for PCs and tablets must be updated in that app. Control4 for iPhone, iPod touch, iPads, and Androids will update if online.
- **Validate Project**—Performs a check for project file integrity.

Media menu

Access the *Media* menu from the menu bar in the *Media* view.

Note: The Media menu becomes available when the Media tab is selected (on the left menu).



From the *Media* menu, you can create, delete, and rename playlists. You can also clear, export, and import media lists. A Media List is the list of media information associated with the selected device, for example, all DVDs with associated cover art, title, notes, etc., for each DVD in a disc changer.

The media has been scanned or manually added to the media database. After you add an item to the media database, the cover art and information about the media can be viewed and selected from any of the Navigators (touch screens, Control4 apps, and on-screen navigators, etc.).

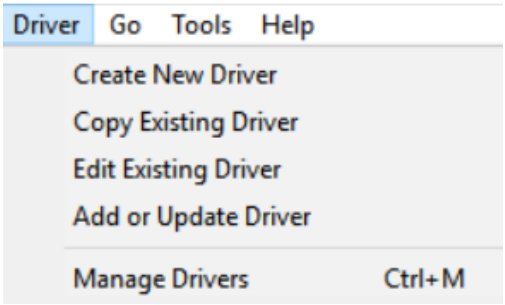
The following options are available:

- **Clear Media List**—Clears the media list of the selected device from the media database.
- **Export Media List**—Exports a media list for the selected device from the controller to a PC.
- **Import Media List**—Imports a media list from the PC to the controller.
- **Export Playlists**—Exports a playlist from a controller to a PC.
- **Import Playlists**—Imports a playlist from the PC to a controller.
- **Import DVD List from File**—Imports an Excel list of DVD titles for a Disc Changer.
- **New Playlist**—Creates a new playlist from a controller to a PC.
- **Delete Playlist**—Removes a playlist.
- **Rename Playlist**—Renames a playlist.
- **Tag media files**—Used for OS 2.0 or later conversion of media files so all media players can see the same tags.

Driver menu

Access the *Driver* menu from the menu bar on any Composer Pro screen.

Note: You may prefer to use the new Driver Editor tool released in 2012. Check with your Control4 Sales Representative for details.



From the *Driver* menu, you can create, copy, or edit drivers. You can also manage the local database of drivers and add other drivers from the online database as needed.

> Note: Creating a new device driver is an advanced procedure. See "Creating device drivers" in the Composer Pro User Guide for details.

The following options are available:

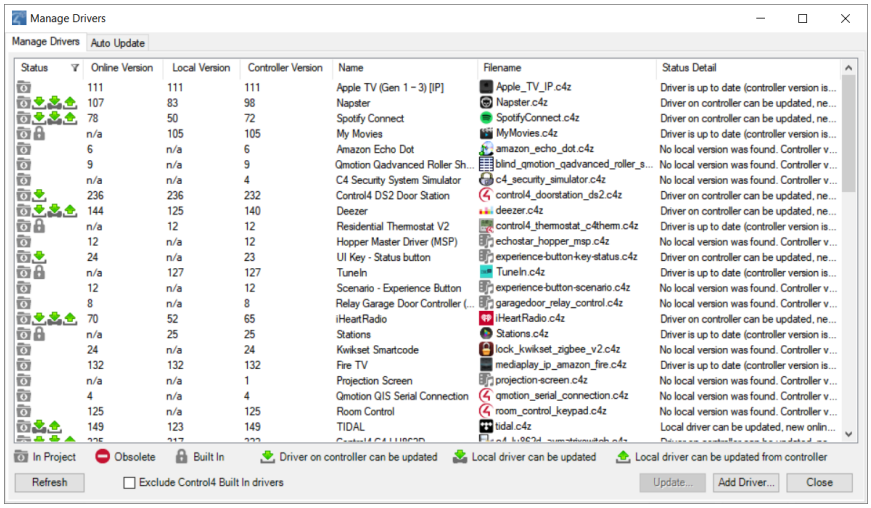
- **Create New Driver**—Launches the *Driver Wizard* and lets you create a new driver based on the typical features of a particular device type, such as DVD players, and TVs. See "Create, copy, and edit drivers with Driver Wizard."
- **Copy Existing Driver**—Launches the *Driver Wizard* and lets you copy an existing driver model. For example, if a driver exists for a device from a particular manufacturer, but it isn't the same model, you can modify the driver for the model you need. See "Create, copy, and edit drivers with Driver Wizard."
- **Edit Existing Driver**—Launches the *Driver Wizard* and lets you modify an existing driver. This is mostly for testing purposes. After you create a driver, you can test the driver by adding it to the Control4 system to see if it functions correctly. The Edit feature allows you to make modifications when necessary. See "Create, copy, and edit drivers with Driver Wizard."
- **Add Driver**—Lets you search the local database to add a .c4i driver if it doesn't exist in the project. Director will load the new driver, but you will have to add the driver to the project. You can use *Update Driver* to replace an existing one. This option is used mostly with DriverWorks. See Composer Pro User Guide for details.
- **Manage Drivers**—Lets you manage drivers in your local database and the drivers on the My Drivers tab. See "Manage Drivers dialog."

> Tip: You can also right-click the driver in the project tree to: Rename, Edit Driver, Export Driver, Update Driver, or Delete a driver. For OS 2.0 or later, use the same procedure for Update Driver as with Add Driver (see above). However, Update Driver updates your driver if it IS in your project. Note: If the

> driver connection IDs change, the driver will need to be connected again. Double-check your connections after you update your driver.

Manage Drivers dialog

Access the *Manage Drivers* dialog from the *Driver* > *Manage Drivers* menu item on any Composer Pro screen.



From the *Manage Drivers* dialog, you can organize the device drivers (or drivers) in your local database. You can sort by *Device Type*, *Name*, *Manufacturer*, *Model*, *Driver Status*, *Creator*, *Created Date*, and *Modified Date*.

Buttons

- **Add**—Lets you add drivers from the Control4 online database to the local driver database (Local Database). When the dialog appears, from the pull-down menus, select the **Device Type** and **Manufacturer** of the device you want to download, and then click **Search**. Check the driver you want to add to the local driver database, and click **OK**. This adds the device driver to your local database.
- **Delete**—Lets you delete a driver from the local driver database.
- **My Drivers**—Lets you add the selected driver to the *My Drivers* list. In the *Manage Drivers* dialog, you select a device or use the **Shift** (to add multiple drivers) or **Ctrl** keys (to add multiple drivers all in a row).
- **Notes**—Lets you add notes about your drivers.
- **Exit**—Lets you exit the Manage Drivers dialog.

Other options

- **Sort**—Lets you sort and find drivers by column and by *Device Type, Name, Manufacturer, Model, Creator, Created Date,* and *Modified Date*. Click the

top of each column to sort accordingly. Click on the column **head** to sort the column.

Create, copy, and edit drivers with Driver Wizard

To enhance device support in Composer Pro and in the Control4 system, a device needs a corresponding driver, known as a device driver.

If you want to add a device to the Control4 system, and it does not have a supporting driver (or one that you can find in the online database), you can use the built-in *Driver Wizard* in Composer Pro to create a driver prior to setting up the device.

You can access the wizard from the *Driver* menu > *Create New Driver*.

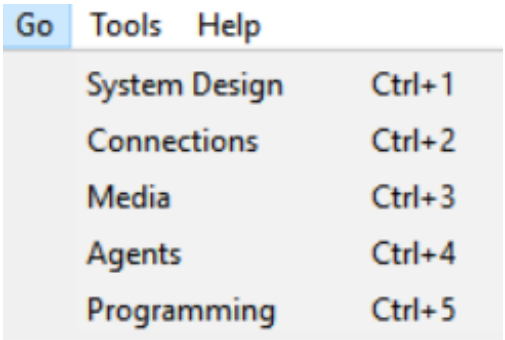


The *Driver Wizard* lets you add device support to the system for infrared (IR) or serial drivers.

For more information and example implementations, see "Overview of creating device drivers" and "Using the Driver Wizard" in the Composer Pro User Guide.

Go menu

Access the *Go* menu from the menu bar on any Composer Pro screen.



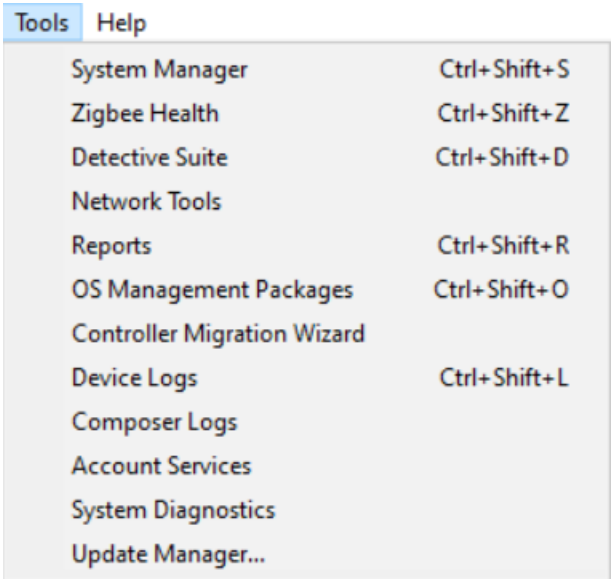
From the *Go* menu, you can access the various Composer Pro views: *System Design* (Ctrl+1), *Connections* (Ctrl+2), *Media* (Ctrl+3), *Agents* (Ctrl+4), and *Programming* (Ctrl+5). This is an alternative to using the buttons (left side at the bottom).

The following options are available:

- **System Design**—Lets you build the project tree and identify the devices in the Control4 system. Access this view with the keyboard shortcut **Ctrl+1**.
- **Connections**—Lets you identify all connections (Room, Control, AV, Network). Access this view with the keyboard shortcut **Ctrl+2**.
- **Media**—Lets you add and scan stored or broadcast media. Access this view with the keyboard shortcut **Ctrl+3**.
- **Agents**—Lets you set up agents for use on the system and programming. Agents include: Lighting Scenes, Wakeup, Scheduler, Variables, etc. Access this view with the keyboard shortcut **Ctrl+4**.
- **Programming**—Lets you program devices and agents on the system. Access this view with the keyboard shortcut **Ctrl+5**.

Tools menu

Access the *Tools* menu from the menu bar on any Composer Pro screen.



From the Tools menu, you can access tools for checking the device connection status.

The following options are available:

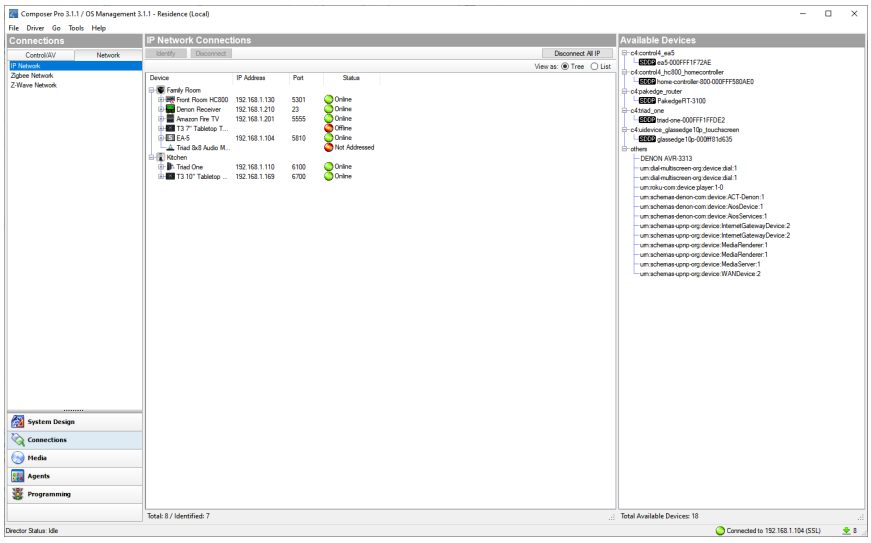
- **System Manager**—Launches a tool to connect to and configure Control4 Controller hardware and devices. See “ System Manager.”
- **Zigbee Health**—Open the Zigbee Health diagnostic view. See"Zigbee Health."

- **Detective Suite**—Launches a suite of diagnostic tools: Bindings, Discovery, Performance, Programming, and Zigbee.
- **Network Tools**—Launches the *Connections > Network* view. Composer shows the status of all network devices on the *IP Network* and *Zigbee Network*. The *Network* view shows you which devices in your project are identified and communicating to the network.
- **Reports**—Lets you select one of the Centralized Lighting reports to run: Panel Report, Module Report, or Load Schedule Report. See "Reports" in the Composer Pro User Guide for details.
- **Device Logs**—Download a snapshot of device logs from controllers, touchscreens, or Triad One streaming amplifiers.
- **System Diagnostics**—Assists you in gathering system information to help you determine if any issues encountered are configuration problems, performance issues, or potential defects. The System Diagnostics tool is valuable also for logging information and sending email to Control4 Technical Support. See "System Diagnostics."
- **Account Services**—Facilitates system registration which is required for software updates and to use the media services throughout the Control4 system. It is also required in conjunction with a customer account to enable Remote Access, which allows secure access to your system via the Internet. See "Account Services."

Network Tools

The *Network Tools* menu option shows the *Connections > Network* view which offers network information on IP and Zigbee devices.

From the Tools menu, select Network Tools.



The *Network* tabs describe the following:

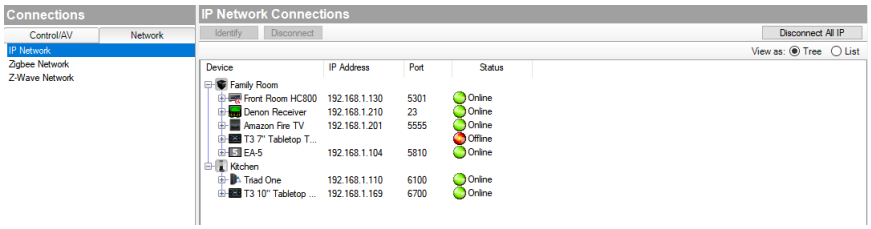
- **IP Network**—Lists the devices on the IP network.
- **Zigbee Network**—Lists information about the Zigbee devices.
- **Z-Wave Network**—Lists information about the Z-Wave devices

The icons denote the following:

- **Green**—Indicates that an address is identified and the device is *online*. For example, a dimmer is identified and communicating to the Control4 system.
- **Yellow**—Indicates that an address is identified and the device is *offline*. For example, if the System Remote Control goes to sleep, the status turns yellow. This indicates that the System Remote Control has been identified, but it is offline.
- **Red**—Indicates that a device is not identified or has been offline for a long period of time. In this case, go to the **Connections** view > **Network** tab and identify the device to the system.

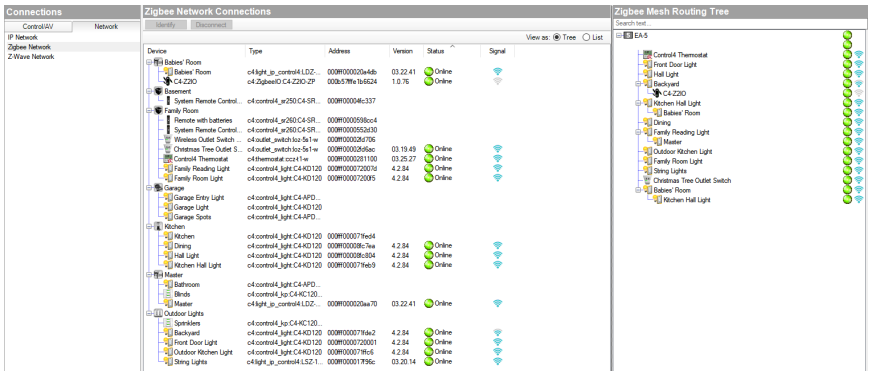
The *Network Tools* tabs are shown below.

IP Network tab



This shows the IP devices on the network, network addresses, and status.

Zigbee Network tab



This tab displays Zigbee devices, addresses, online states, and signal strengths

You can view the Zigbee network items two ways using these radio buttons:

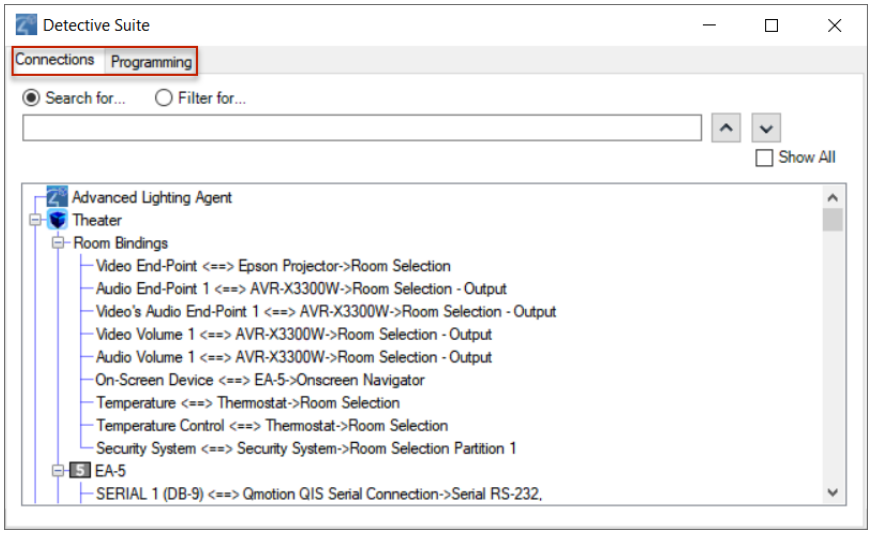


- **Tree**—Takes the devices that are in the project and lists them in a room tree view.
- **List**—Takes the devices that are in the project and lists them in one list.

Detective Suite

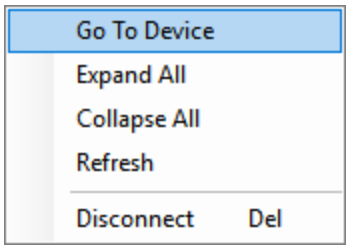
Use the *Detective Suite* in Composer Pro to perform diagnostic tests on the system.

From the *Tools* menu, select **Detective Suite**. The following window appears with tabs for *Connections* and *Programming*.



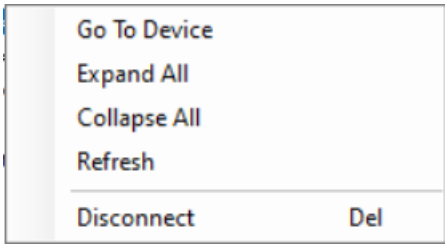
Tab descriptions:

- **Connections**—Lists all the connections in the project. Lets you search by keywords, and expand by room or the whole house. In the *Connections* tab, if you right-click on an item, more menu options are available.



- **Go To Device**—Goes to the selected connection in the *Connections* view of Composer.
- **Expand All**—Expands all the items and rooms in the list.

- **Collapse All**—Collapses all the items and rooms in the list.
- **Refresh**—Refreshes the connections and rooms in the list.
- **Disconnect**—Disconnects the selected connection.
- **Programming**—Shows programming that has been created. Lets you search by keywords, and expand by room or the whole house. Can expand the events to include actions. In the *Programming* tab, if you right-click on an item, more menu options are available.



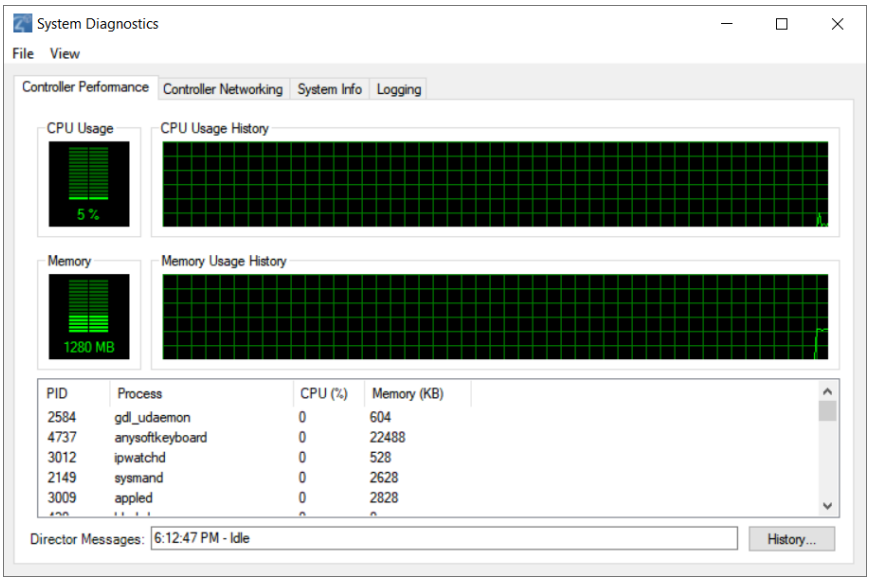
- **Go To Device**—Goes to the selected event in the *Programming* view of Composer.
- **Expand All**—Expands all the items and rooms in the list.
- **Collapse All**—Collapses all the items and rooms in the list.
- **Collapse to Events**—Collapses all the items and rooms in the list to only show events with programming defined.
- **Refresh**—Refreshes the connections and rooms in the list.
- **Remove**—Removes the programming script items from the selected event.

System Diagnostics

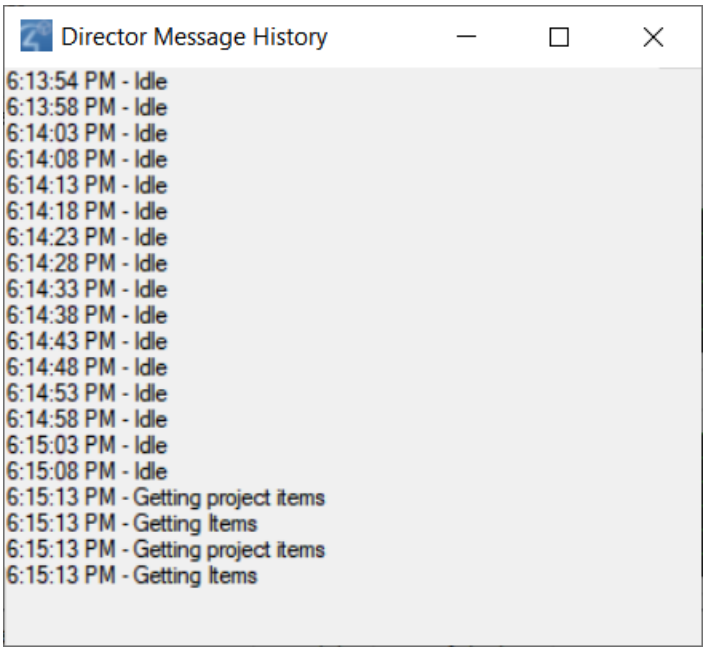
From the *Tools* menu, click **System Diagnostics**. Use these screens to help you diagnose system problems and activity.

- **Controller Performance tab**—Lets you view controller performance information, including CPU and memory usage. Process data is listed in the

bottom pane.

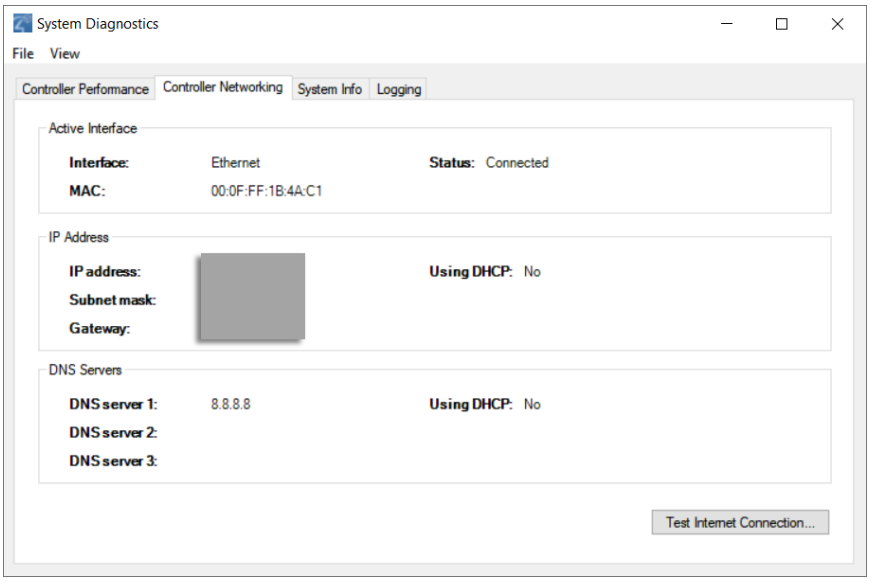


- **History button**—Lets you view the history of CPU and memory performance.

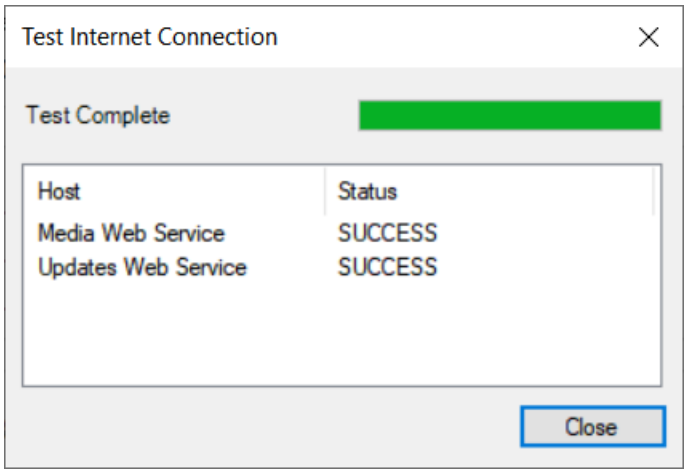


- **Controller Networking tab—**Lets you view controller networking information, including network type, connection status, MAC address, IP

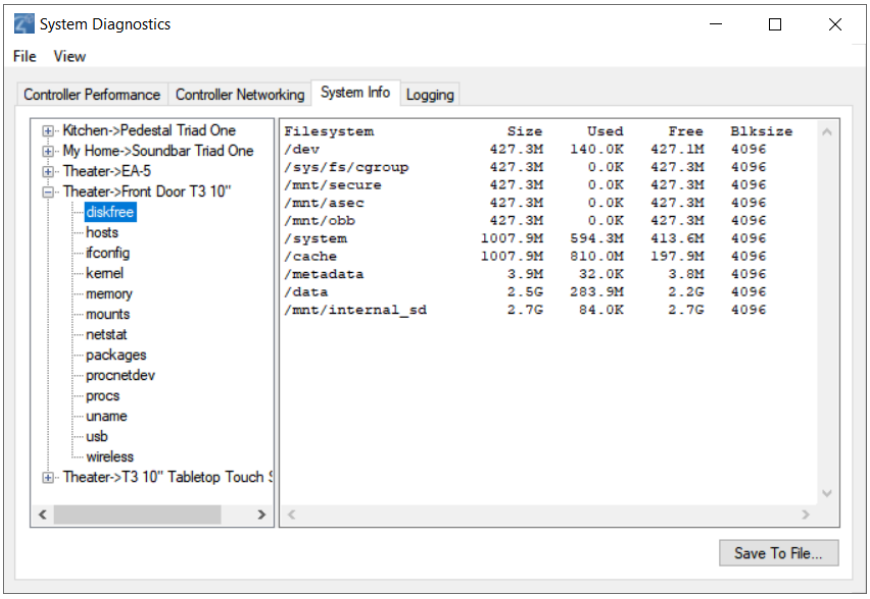
address, Subnet mask, Gateway, DHCP status, and DNS server information.



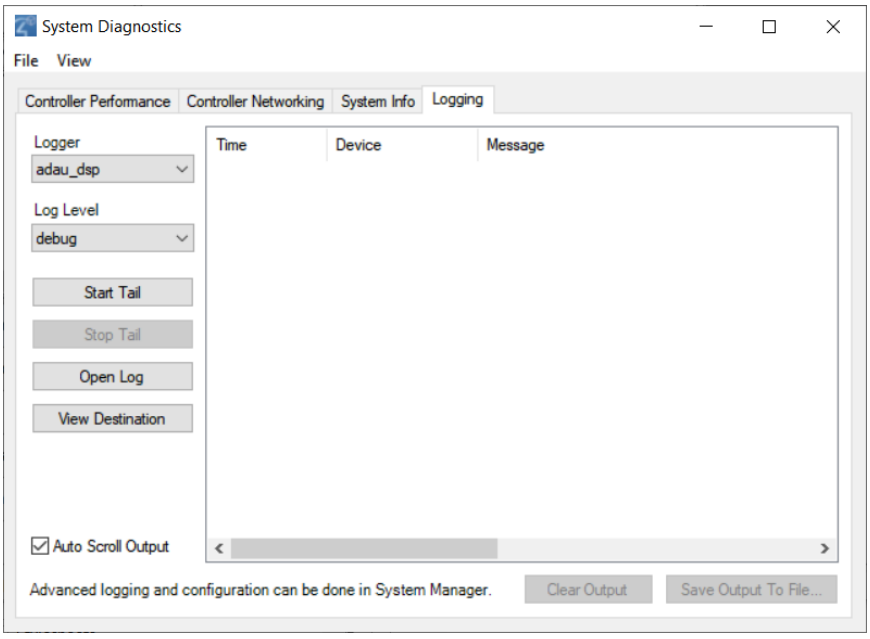
- **Test Internet Connection button—**Lets you test the current Internet connection. After viewing, click **Close** to exit the dialog box.



- **System Info tab—**Lets you view system information in a tree view. Click **Save To File** to save this information.

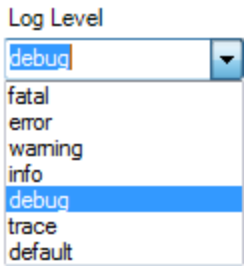


- **Logging tab—**Lets you log system problems.



This logging feature lets you:

- Change the logging level of any of the program loggers on the operating system. Select from **fatal**, **error**, **warning**, **info**, **debug**, **trace**, and **default**.



- View the selected log in real time ("Tail"). To start the tail, select the log, then click **Start Tail**. To stop the tail, click **Stop Tail**.
- Open the current log file of the selected program logger. To open the log, select the logger, then click **Open Log**.
- View all the logs available on the device at that location.
- Click **Auto Scroll Output** to scroll through the log entries, or click **Clear Output** to clear all entries.

Account Services

From the *Tools* menu, select **Account Services** to set up a customer.control4.com account and register a controller, remove a controller from registration, or check in for a service connection. To register the controller, see Registering the Control4 system.

You can also check the current account status and service level. Select the **Status** tab. You can view:

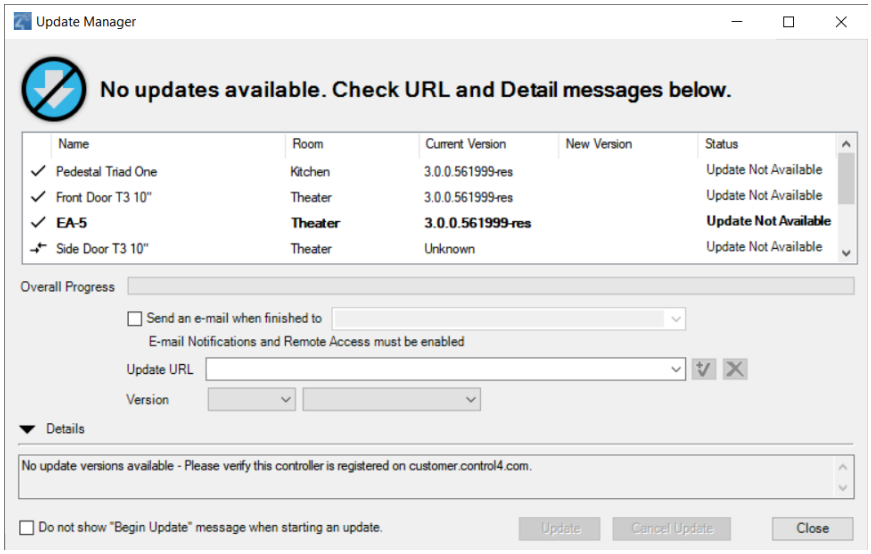
- Account Status
- Customer Account
- Customer Email
- Service Level
- VPN Status

Update Manager

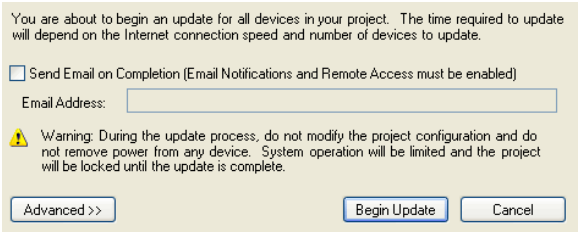
To continue to improve our products, periodically the Control4 team needs to develop updated versions of Composer Pro and Director and provide those updates to you. Use *Update Manager* to update your Composer software and the system.

To update Director:

1. From the *Tools* menu, select **Update Manager**.



2. Click **Update**.



3. Click **Begin Update**.

To update the system software:

1. Click **Update** to update the system. After you begin the updates, you cannot modify your project. Do not remove any power cords or Ethernet cables until the updates are completed. You can have an email message sent to you when the update completes to notify you when you can modify the project again. See "Programming with agents" in the Composer Pro User Guide to set up notifications.
2. To view the project, you can close the **Update Manager** dialog without interrupting the update, but you cannot make any changes.
3. Click **View Logs** in the *Update Manager* dialog to view the update messages.
4. Click **Cancel Pending** to cancel the device downloads. This action cancels a download from the device.

Note: You cannot cancel an update after the device download has finished and the firmware update on the device has begun.

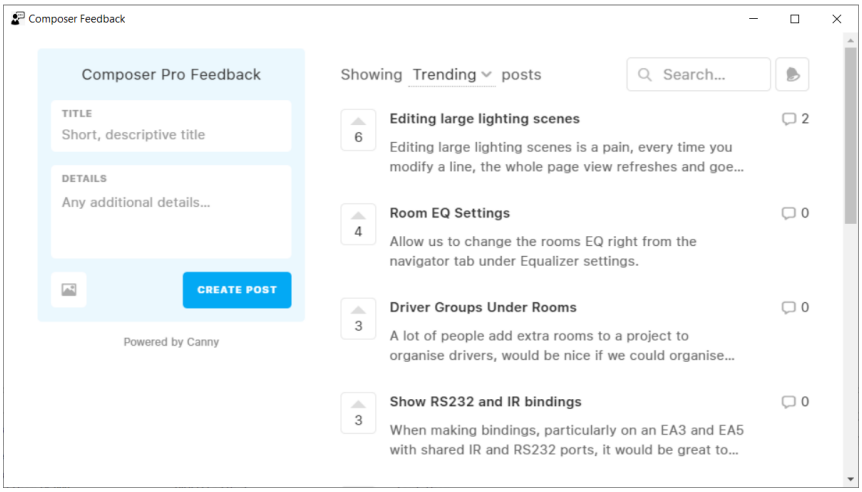
Feedback menu

From the *Feedback* menu, you can leave feedback, vote on feedback from others, or view Top, Trending, or New feedback. Feedback is organized by Composer

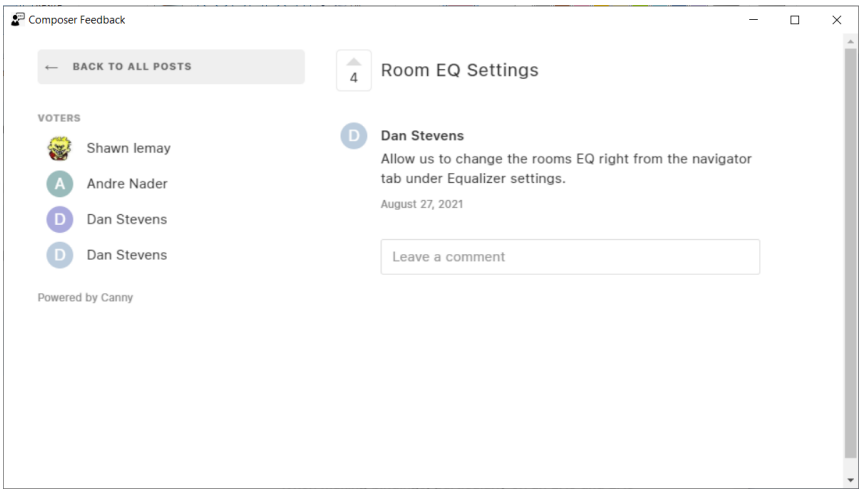
(suggestions related to features in Composer) and Drivers (suggestions related to drivers and their documentation).

To use the Feedback menu:

1. Click on the Feedback menu and click on **Composer** or **Driver Suggestions**.
2. In the feedback window, you can create a post by adding a **TITLE**, **DETAILS**, and clicking on **CREATE POST**. When a post is created, the feedback menu automatically searches for feedback that is already posted, and rather than create a new post, recommends you add a vote to an existing post and add comments.
3. You can show existing Feedback by Trending posts, posts with the most votes, or newest posts.
4. You can search for feedback by using the search window. Votes can be added to existing feedback by click on the up arrow.



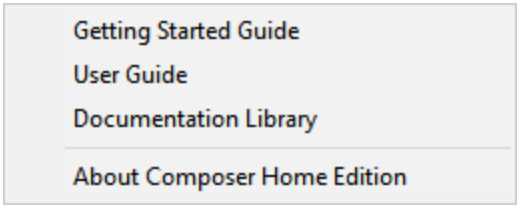
5. You can view the feedback detail by clicking on the feedback post. You can upvote the feedback on this page and leave a comment..



Help menu

From the *Help* menu, you can:

- Access the online *Help* topics, *Index*, and *Search* function for this *Composer Pro Getting Started*.
- Access a PDF of the *Composer Pro User Guide*. Note*:* Use the links in the *Composer Pro Getting Started* help topics to access the PDF for the *Composer Pro User Guide*.
- Check the Composer Pro and Director versions.
- Contact Control4 Technical Support.



The following options are available:

- **What's New**—Opens a link to the What's New section in this document.
- **Chat with Support**—Opens a link to contact Chat Support.
- **Getting Started Guide**—Displays this *Getting Started Guide*.
- **User Guide**—Opens a link to the *Composer Pro User Guide*.
- **Documentation Library**—Opens a link to the documentation library on the Dealer Portal.
- **Knowledgebase**—Displays the Control4 Knowledgebase login. The Knowledgebase contains documents, articles, and other sources for reference.
- **Change Logging**—Displays the Composer Logging windows to change Composer logging options.
- **Reset Composer Layout**—Resets saved Composer layout options. This can be useful if a window or section of Composer is not displaying correctly.
- **Check for Updates**—Checks for available updates to Composer Pro. Select the **Check for version of Composer at startup** option to have Composer automatically check for updates.
- About Composer—Displays the Composer and Director versions.

Composer Pro Properties

Access the Properties panes from the System Design view.

There are three categories of properties in a Control4 system: Project, Room, and Device properties.

- Project Properties
- Room Properties
- Device Properties

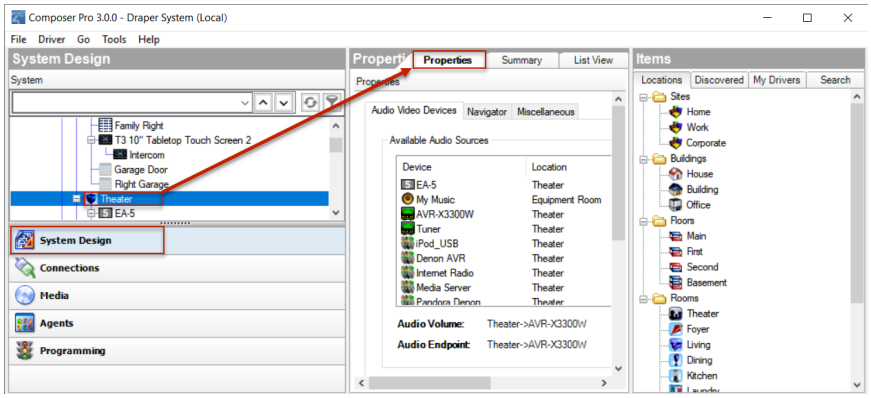
Accessing properties from the project tree

You can use the Control4 Composer Pro Properties pane to view:

- Devices
- Connections
- Status information
- Project or customer information
- Configuration information for devices and rooms

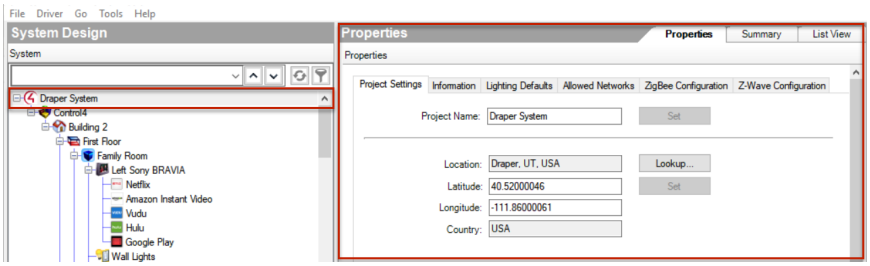
To access the Properties pane:

1. After adding the device and making the connections, select the **device** from the project tree in the *System Design* view.
2. Click the **Properties** tab. The properties for the device appear in the *Properties* pane.

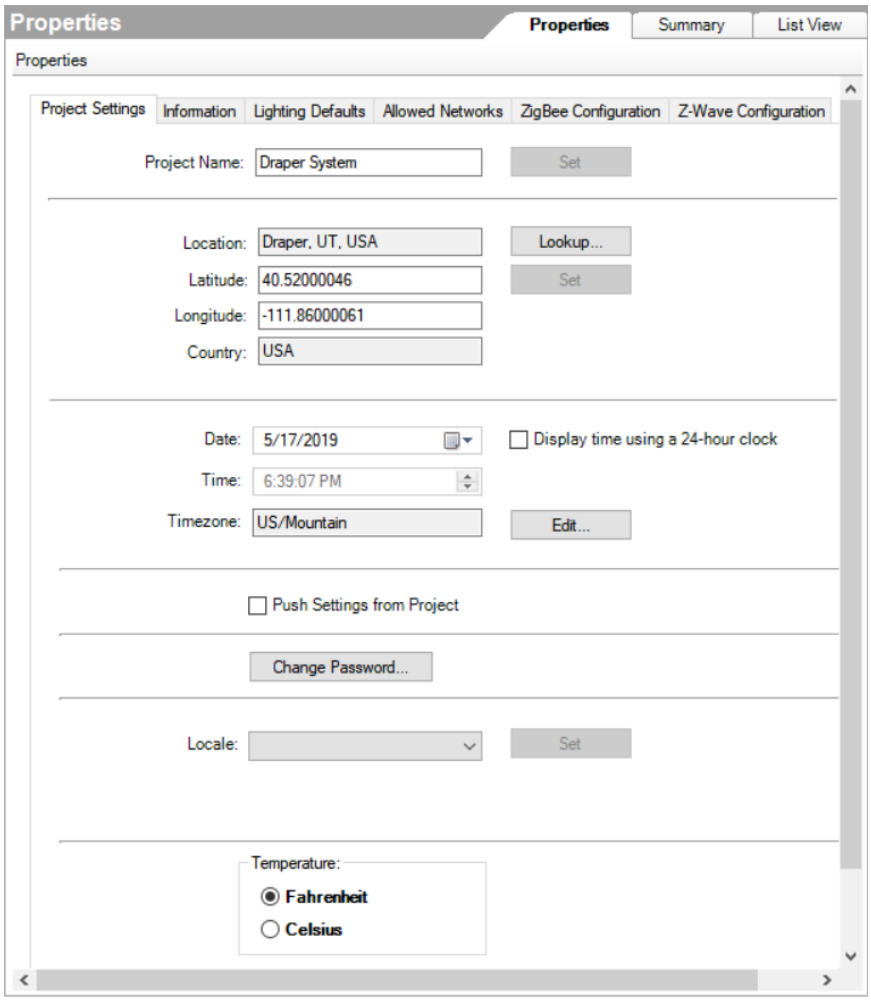


Properties pane

In the *System Design* view, click the project name (top level name) in the project tree to view the project *Properties*.



The project Properties appear when you first start Composer Pro, or any time the project name (or root node) is selected in the project tree and the System Design view.



This option lets you enter project-specific information; for example, the project name, location, and ZIP Code. Composer Pro automatically enters the latitude/longitude and date/time information when you provide the location and ZIP Code.

Basic Composer Pro tasks

You can perform simple but important tasks in Control4 Composer Pro (see below), or you can take a deeper dive into intermediate or more advanced tasks (the Composer Pro User Guide will show you how).

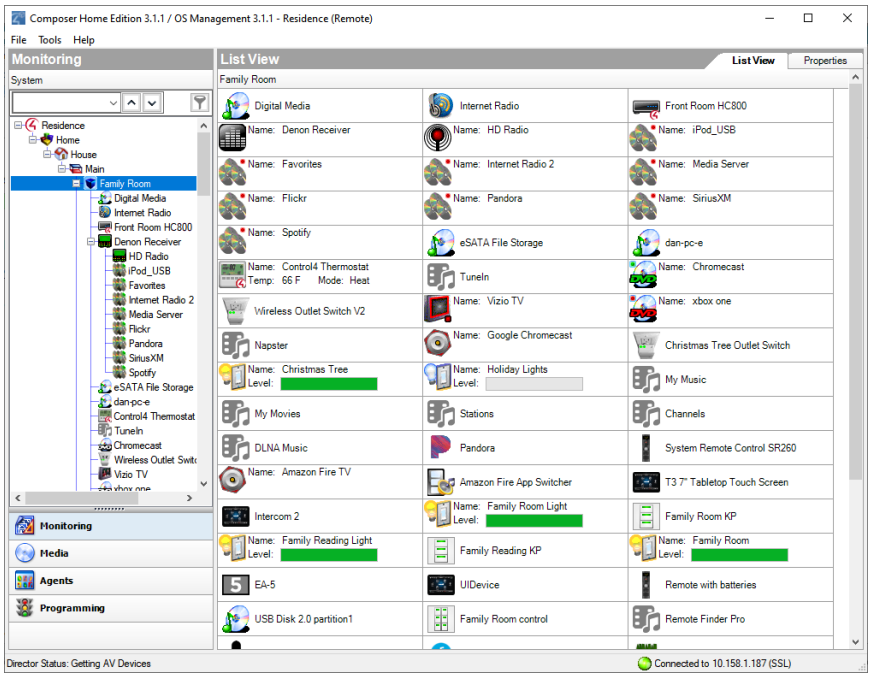
Accessing the List view from the project tree

Use the *List View* tab to view the devices in your project (by room). Ensure that the devices are added and identified to the project.

To view the list:

1. Click **System Design**.
2. Select a **room** in the project tree.

3. Click the **List View** tab; the status of each device associated with that room displays in the *List View* pane.



Removing items from the project tree

Use the project tree in *System Design* to remove devices, rooms, buildings, etc.

To remove items from the project tree or other lists in a Composer project:

1. **Right-click** the item to remove in the project tree, and then select **Delete**.
2. Click **Yes** to confirm.

Clearing a project

To erase all project configuration information, use the *Clear Project* menu option.

> Note: Control4 recommends that you create a backup file of your project first before you use this function. To back up the project, go to the File menu, and then select **Back Up**. Give the project a filename; the file saves to the My Documents folder by default.

To clear out a project:

1. From the File menu, select **Clear Project** to erase the project configuration information.

Exiting Composer Pro

Use the **Exit** command to close Composer Pro.

To exit Composer:

1. From the File menu, select **Exit**.

2. Composer asks you if you want to back up your configuration information.

> Note: Control4 recommends that you always save a backup copy of your configuration.

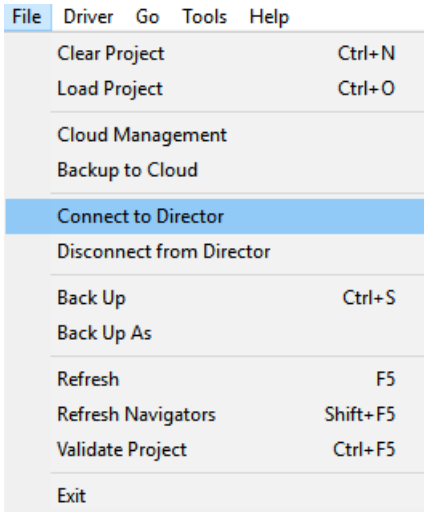
Getting project configuration information from a controller

Use the *Connect to Director* link to view configuration information.

To get existing project configuration data from a controller:

1. Verify that your PC and the controller are connected to the same network.
2. From the Composer Startup screen, click **Local System** or from menu bar, click **File** > **Connect to Director** (see below). The project configuration appears unless it is a new project.





Loading a project's configuration from a computer to a controller

Use *Connect to Director* to load configuration information.

To load the project configuration from a computer to the controller hardware:

1. Verify that your PC and the controller are connected to the same network.

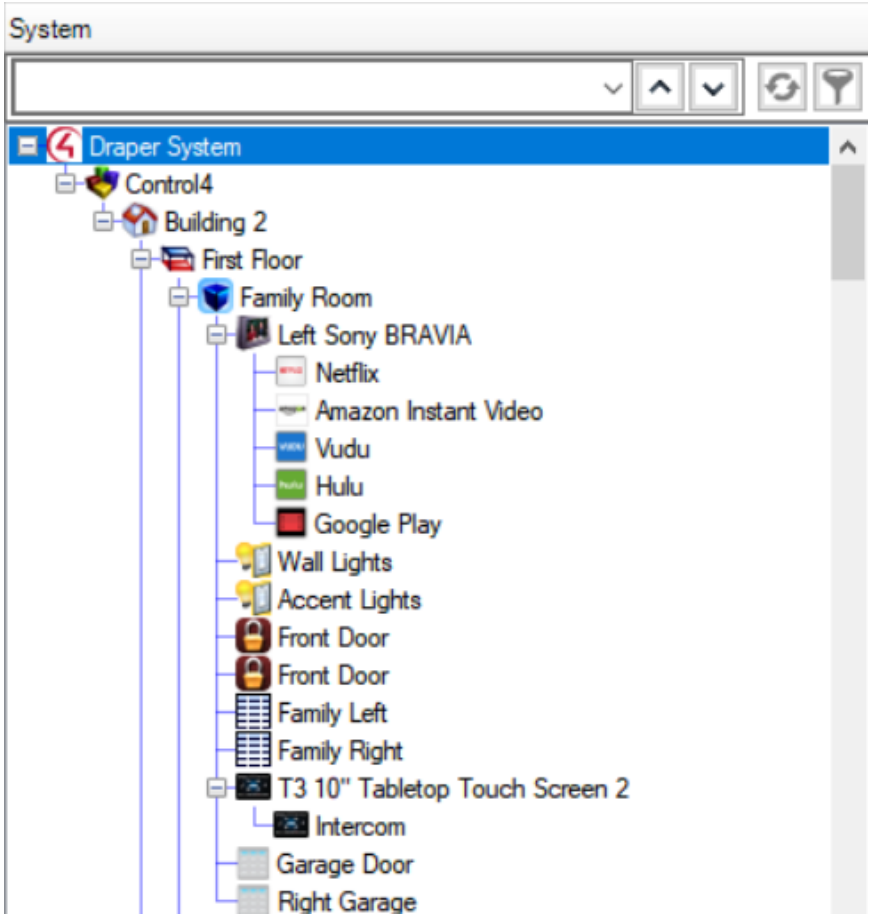
2. From the startup screen, click Local System, or from menu bar, click File > Connect to Director (see below).



3. From the *File* menu, select **Load Project**.
4. Click **Yes** when prompted to back up the project. Browse and select the project file.

Example: SmithProject.c4p

5. When you see the new project displayed in the *System Design* view, the project is loaded to the controller, and you are connected.



Backing up a Composer Pro project

Use the *File* menu to back up your project. Control4 recommends that you do this whenever you change anything in a project or if you update the software.

The *File* menu in the Composer screens provides the following options for backups:

- **Back Up**—Backs up the current project to your PC. The first time you back up, it prompts you for a filename. It also prompts you to back up any media information. If you select this option, the current project becomes an option in the File > Load Project list.
- **Back Up As**—Backs up the current project, and prompts you to enter the name of the file. It also prompts you to back up any media information. If you select this option, the current project becomes an option in the File > Load Project list.

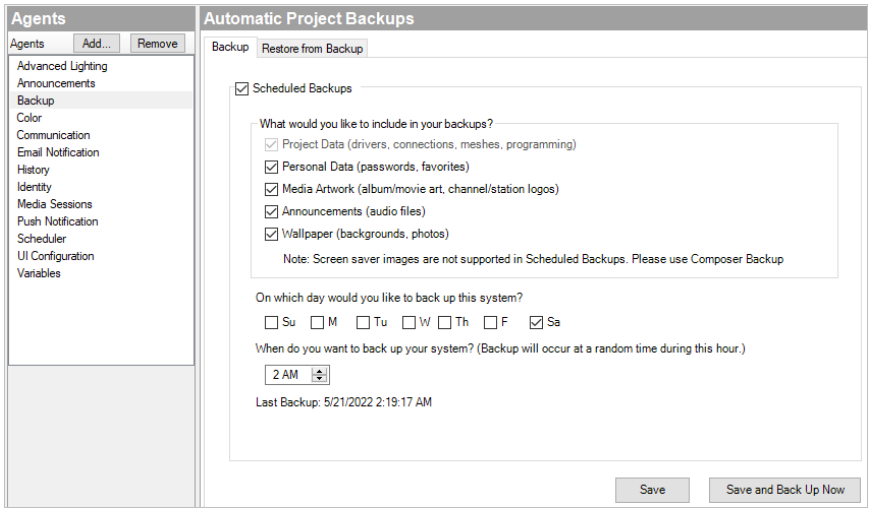
Any time you exit Composer by clicking **File** > **Exit**, Composer Pro asks you if you want to back up your project. If you've made changes, it's a good idea to do so.

Automatic Project Backups

The Backup Agent allows you to schedule backups on specific days and times. The last time a backup occurred is displayed at the bottom of the window.

To configure the Backup Agent:

1. Open the *Agents* view and select **Backup** from the Agents pane.
2. Verify **Schedule Backups** is checked.
3. Select the data to be backed up.
4. Select the day(s) you want to have an automatic backup.
5. Set the time you want the backup to occur, then click **Save**.



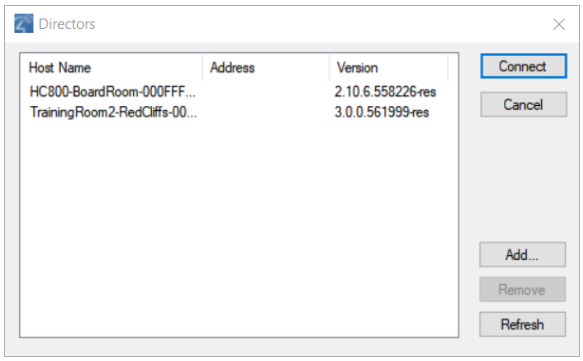
Backing up and loading from a virtual to a local or remote Director

Use the *Connect to Director* option to back up a Director.

To back up and load configuration information from a virtual Director to a local Director:

1. From the Composer *File* menu, select **Connect to Director**.

2. When prompted, click **Yes** or **No** if you want to back up the media information.
3. A *Directors* dialog box appears listing the available Director IP addresses. Select the address of the controller to which you are connecting.



4. Click **Connect**. You are now connected to a local Director.

Backing up a project's configuration and media

Use Composer Pro to back up project information. When connected to the controller, changes are immediate.

To save a project configuration to your computer, and then use the Back Up and Back Up As options:

1. From the File menu, select **Back Up**.
2. Type a filename to back up the project, or use the same name, if you prefer.
3. When prompted, click to select the options to back up media information and personal information, then click **Save**.

Validating the project

Use Composer Pro to validate the integrity of the project file. You can validate a project while connected to a Director or Virtual Director.

To check project integrity after connecting to Director (or Virtual Director):

1. From the *File* menu, click **Validate Project**. Composer displays any errors.
   If no errors are found, nothing else will be displayed.

Composer Pro Version Independence

With the release of Composer Pro 3.1, Composer Pro now connects to Director running on the primary controller through a set of versioned APIs. The change allows Composer Pro to connect to any controller running OS 3 or newer. But most importantly, Composer Pro can now be released independently from Control4 OS releases which clears the path to accelerated enhancements, features, and fixes to Composer software.

Prior to this release, Composer Pro, Control4 OS updates, and Drivers and Agents were all released at the same time. When a revision to one of these components was published, they were all updated together. This was necessary because these components communicated with each another through conventional Application Programming Interfaces, or APIs. When any API was added, changed, removed, or in some cases just used differently, all other components had to be revised to match. Here's a simplified view of the prior relationships among these components:



With the release of Composer Pro 3.1, communication between Composer Pro and Drivers and Agents were made part of a versioned API. Now, new features can be added to Composer software while still allowing Composer to communicate to Drivers and Agents through a versioned API.

Here's what things look like now:



For systems running Control4 OS 3 or higher, versioned APIs between Composer Pro and Drivers and Agents allow the two components to be version-mismatched. In other words, Composer Pro is now version-independent of Drivers and Agents, which in turn makes it version-independent of Director.

Note: While Composer Pro and Drivers and Agents communicate through a versioned API, the OS's built-in Drivers and Agents communicate with Director through conventional APIs. This means that for the time being, Drivers and Agents must continue to be version-matched with Director. APIs for Control4 and 3rd-party drivers that are based on the Driver Wizard or the DriverWorks SDK are

independent of the OS version. Developers of drivers which use the DriverWorks SDK APIs may designate a minimum-OS version.

Connecting Composer Pro to a Virtual, Local, or Remote System

Composer Pro gives users three connection options at startup. The same three options are presented after disconnecting:



Virtual System

Virtual System, also known as Virtual Director, is a software emulation of the software that runs on the primary Control4 controller (Director). Selecting Virtual System will connect Composer to a Virtual Director running on the same PC. There's no need to be connected to the local network (LAN) or to the internet to establish this connection.

Local System

Selecting Local System allows Composer to connect to a Control4 controller running Director on the same LAN as the host PC. Neither the PC running Composer or the controller have to be connected to the internet to establish this connection.

Remote System

Selecting Remote System allows Composer to connect to a Control4 controller running Director—that is also registered to Control4 account—located on a different LAN than the host PC. The PC running Composer and the controller both need to be connected to the internet.

Composer Pro makes new decisions when connecting

When connecting Composer Pro to a Virtual, Local, or Remote System, Composer Pro now connects through a set of versioned APIs, if applicable, and allows you to manage those APIs when you connect.

Connecting to a Virtual System with versioned APIs

Each release of Composer Pro comes with the latest set of Drivers and Agents and Virtual Director. Connecting to Virtual System is straightforward for any version of Composer Pro, and as long as the user has not uninstalled its Drivers and Agents, the matched set of components will always be available.

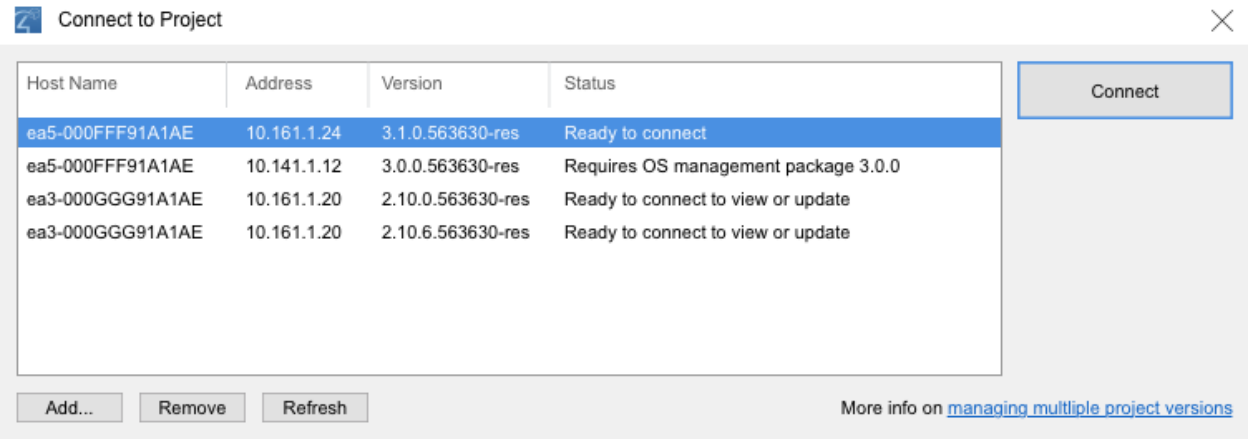
Connecting to a Local or Remote System with versioned APIs

When connecting to a Local System or Remote System, the user must select the controller on the LAN or WAN to connect to. The Connect to Project (formerly, the Directors) screen presents a list of controllers to choose from, along with their IP addresses and OS version numbers.

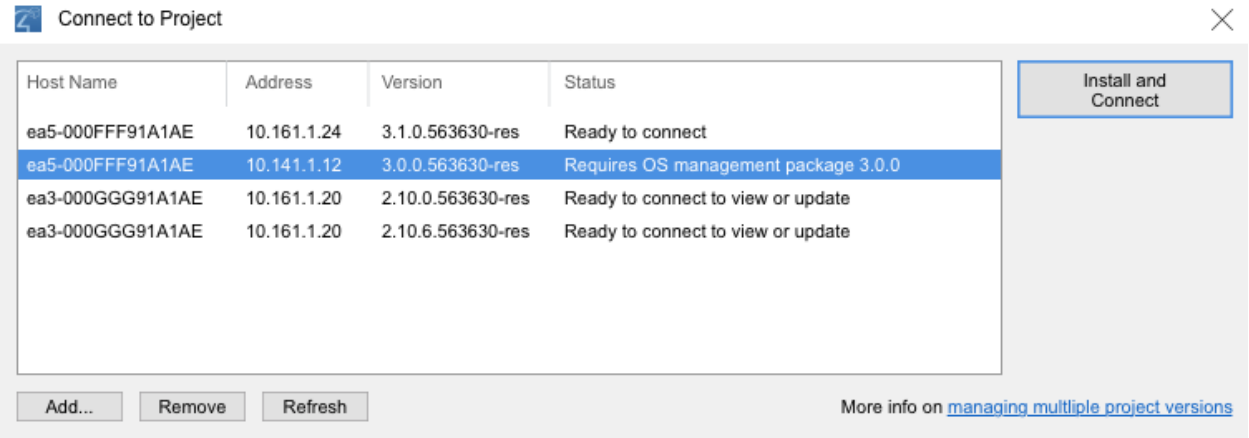
In prior releases, if the user selected a controller with an incompatible version, Composer would alert the user and then open the project in a read-only "compatibility mode."

With Composer Pro 3.1, the following changes have been made to the way the Connect To Project selection screen works:

1. If the major component of the OS version number (for example, the '3' in version number '3.1.0') of the controller matches that of Composer Pro:
    - If the minor and revision components of the version number also match that of the Drivers and Agents installed on the PC, Composer Pro will display "Ready to connect" in the Status column for the controller, and a single action button labeled "Connect":

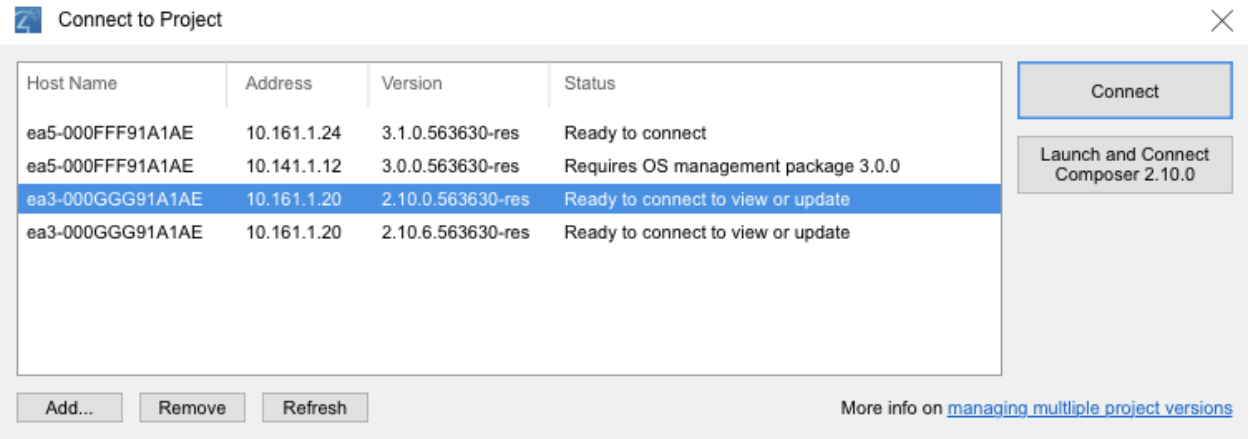


- If the minor and revision components of the version number DO NOT match that of the Drivers and Agents installed on the PC, Composer Pro displays “Requires OS management package [version#]” in the Status column, and a single action button labeled “Install and Connect”. If the PC is connected to the internet, Composer Pro will download and install the correct drivers before connecting to this instance of Director. If the PC is not connected to the internet, Composer Pro will use the OS management package that matches itself and connect to the project in compatibility mode.

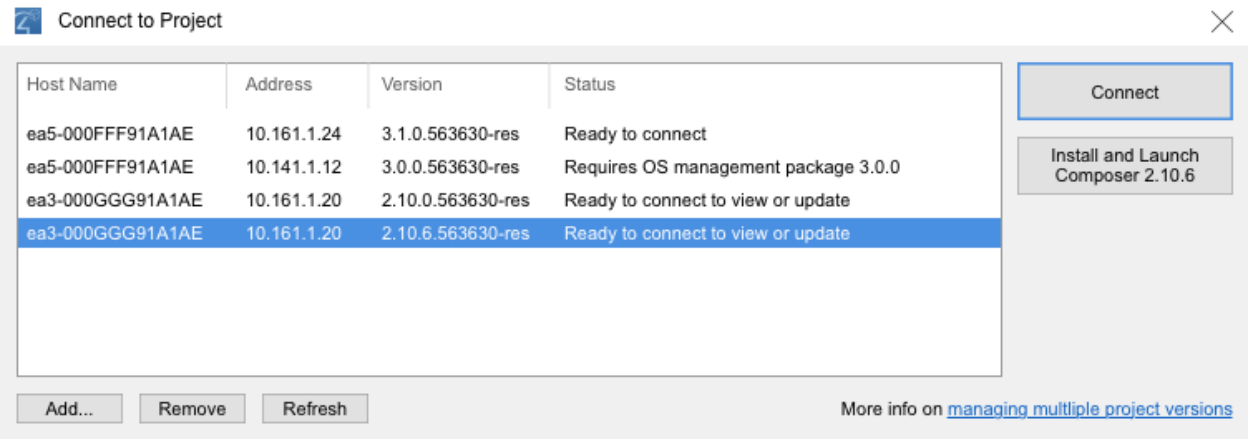


2. If the major component of the version number (for example, the ‘2’ in the OS version number ‘2.10.0’) of the controller DOES NOT MATCH that of Composer Pro (for example, ‘3.1.0’), Composer Pro displays “Ready to connect to view or update” in the Status column. Composer Pro displays an action button labeled “Connect”, which when clicked, connects to the project in compatibility mode. In addition,

- If version 2.10.0 of Composer Pro is already installed on the PC, Composer Pro displays an additional action button, “Launch and Connect Composer 2.10.0”, which launches Composer 2.10.0 and connects to the project in full access mode.



- If version 2.10.0 of Composer Pro is NOT installed on the PC, Composer Pro displays an additional action button, “Install and Connect Composer 2.10.0”, which downloads and installs Composer 2.10.0 before launching it and connecting to the project in full access mode.



Connecting to a Director

Each Control4 controller (for example, an EA-3) ships with pre-installed Director software. The Director communicates with Control4 and third-party products to enable home automation so devices can communicate with each other and Director.

Connecting Composer Pro to a Virtual, Local, or Remote System

Composer Pro gives users three connection options at startup. The same three options are presented after disconnecting:



Virtual System

Virtual System, also known as Virtual Director, is a software emulation of the software that runs on the primary Control4 controller (Director). Selecting Virtual System will connect Composer to a Virtual Director running on the same PC. There's no need to be connected to the local network (LAN) or to the internet to establish this connection.

Local System

Selecting Local System allows Composer to connect to a Control4 controller running Director on the same LAN as the host PC. Neither the PC running Composer or the controller have to be connected to the internet to establish this connection.

Remote System

Selecting Remote System allows Composer to connect to a Control4 controller running Director—that is also registered to Control4 account—located on a different LAN than the host PC. The PC running Composer and the controller both need to be connected to the internet.

Connecting to a virtual system

If you connect to a virtual Director, you are working in Virtual Director mode. This means you are not connected to the Control4 controller and the home network, and changes are **not** automatically saved in real time to the Control4 controller.

Saving changes when working virtually

The only way your changes are saved is to manually use the **Back Up As** or **Back Up** option from the *File* menu to save the project file. The project file saves by default with a **.c4p** extension to your My Documents directory on your computer.

Using Virtual mode

After you have designed and set up a system in Virtual Director mode, you can load the project to the controller.

The **Load Project** option is available from the *File* menu. This mode is useful, for example, if you are using a laptop PC, and you can't connect to the network.

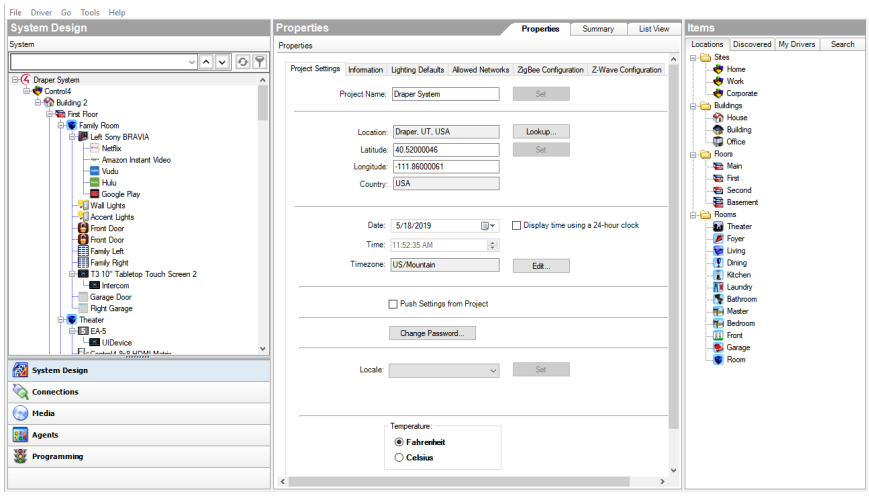
- If you change the project, you can connect to the network and synchronize your changes to the controller when you're ready.
- If you design and set up a system in Virtual Director mode, you can later load the project to the controller. In the *File* menu, the Load Project option is available for synchronization.

To connect to a virtual Director:

1. Start Composer and connect to a Director.
2. At the Composer Startup screen, click **Virtual System**. Virtual Director lets you work in Composer while disconnected from a Director. Composer opens to the main Composer view in Virtual Mode.



The *System Design* view appears by default.



Connecting to a Director on a local network

When you connect to a Local Director, you are making 'live' changes on the controller. Every time you connect to the Director on that controller, your project opens.

> Tip: You also have the option to make a backup of the project on your computer by using the **Back Up As** or **Back Up** option from the File menu to save the project file. When you back up a project file, it is backed up by default to the My Documents directory on your computer.

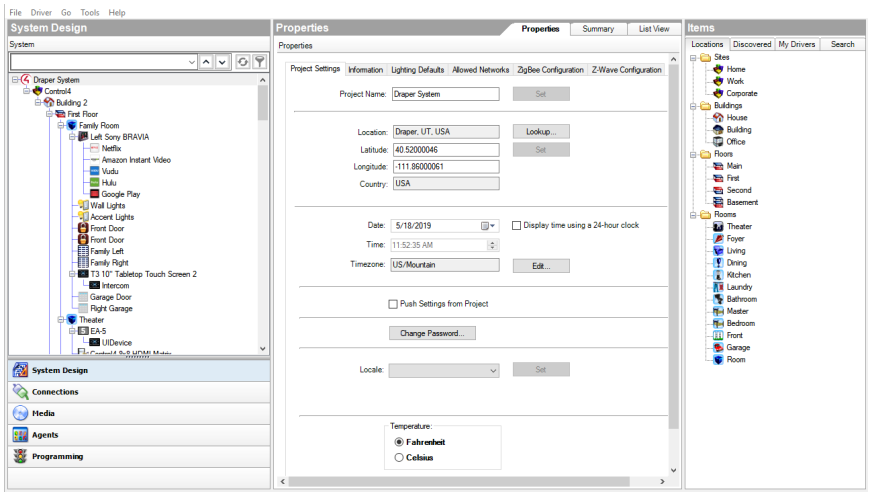
To connect to a Director locally:

1. From the desktop, double-click the **Composer 3.0** icon.
2. At the Composer startup screen, click **Local System**. Local Director connects you to the home network while working in Composer Pro.



3. From the Director dialog box, select the Director's network address for the controller you are setting up, and then click **Connect**.

4. Make a note of the network's **IP address**. Composer Pro opens to the Composer System Design view.



Setting up Remote Access

Use a Control4 Navigator to enable or disable Remote Access. This feature lets you access your Control4 system for updates using the Internet from a remote location. Note: You can also set up Remote Access when you create an account at customer.control4.com.

Prerequisites

- Register the system at customer.control4.com. This process can be completed by the installer or homeowner as long as the system a Navigator, touch screen or on-screen configured in the system.

To set up Remote Access for OS 2.6 or later:

1. At one of the touch screens or on-screen Navigators, select S**ettings > Service Connection**.
2. Select **Yes** under Remote Service.

Notes:

After you enable remote access, if the user has a 4Sight subscription for this system, then the user can enter their email address and password and securely log in to their Control4 home network from any Internet connection in the world.

When the user logs in, the homeowner can use the Web Navigator to monitor and control their lights, change their temperature (warm or cool the home remotely), or check whether any doors or windows were left open. You or the user can refer to this Internet information in the Control4 System User Guide.

If this system and controller are registered on customer.control4.com, the system is accessible for remote access (without a 4Sight subscription) after a

request by the Control4 Installer or Control4 Technical Support representative has been made to access the system. After OS 2.4.0, this check-in is no longer required to initiate a remote service connection.

Connecting to a Director using Remote Access

If you connect to a Remote System, you are making "live" changes to a remote system controller, where changes are communicated over an Internet connection rather than a local network connection. This type of connection is not available, however, until the initial configuration and registration are completed.

> Note: The customer may revoke access rights through my.control.com at any time, but this is not recommended as it interferes with routine Control4 updates.

Requirements

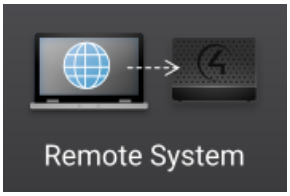
- The customer must be registered at customer.control4.com and remote access must be enabled. (See "Registering the Control4 system" or " Register the controller from a Navigator.")
- A PC with Composer initially installed must be in the same local network as the controller when remote access is set up.

Before you can use the Remote System option, you must configure the system to support remote access (see "Registering the Control4 system").

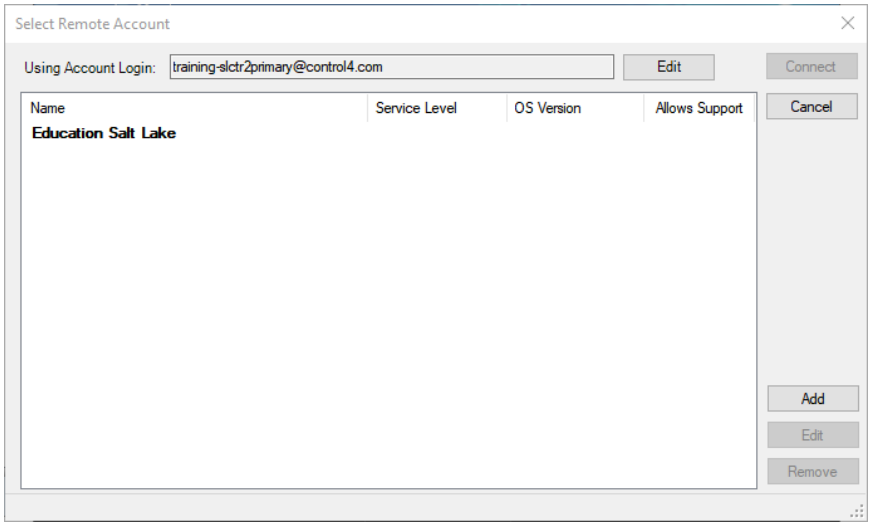
Connecting using Remote Access

To connect to a Remote Director:

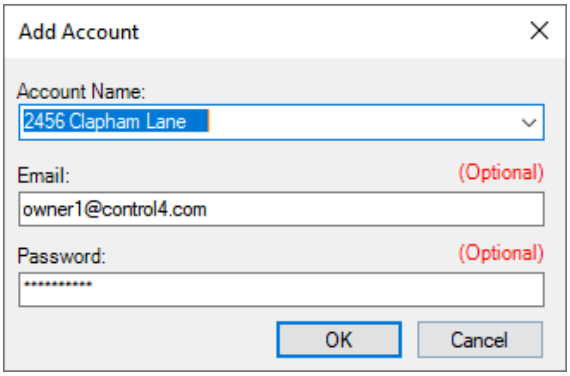
1. Using a PC with Composer Pro installed, verify that the PC has an Internet connection.
2. From the desktop, start **Composer**.
3. At the Composer startup screen, click **Remote System**. Remote Director connects you to the home network while working in Composer from a remote location.



4. Enter your Email Address and Password in the *Account Name* dialog box. This should be the login information from your account on your dealer my.control4.com account.
5. When the *Select Remote Account* dialog box appears, select the account you want to access, and click **Connect**.



If the account name doesn't appear under *Name*, click **Add** to add the account name, and Username (Email address) and Password if they are different from your dealer account login credentials, and click **OK** in the dialog box that appears. This is the Account Name you created during registration at customer.control4.com. After you do this, select the account from the *Select remote account* dialog box, and click **Connect**.



The next screen shows that your account, the User Email Address, and the Password are being verified. This may take several minutes to complete as it is accesses a remote connection.

When authenticated and connected through the Remote Access service, a list of Directors available for connection appears.

6. Select the Director you want to connect to, and then click **Connect**.

When connected, Composer opens and the main Composer view connects to the controller remotely. Composer functions normally as if you were connected to Local Director, allowing you to configure, program, and troubleshoot the Control4 system.

Ensuring that Director and Composer are compatible

Verify that the Control4 controller software (Director) and the Composer software are on the same version before beginning to design a project, or any time you use Composer to ensure the best communication between the two.

To check compatibility:

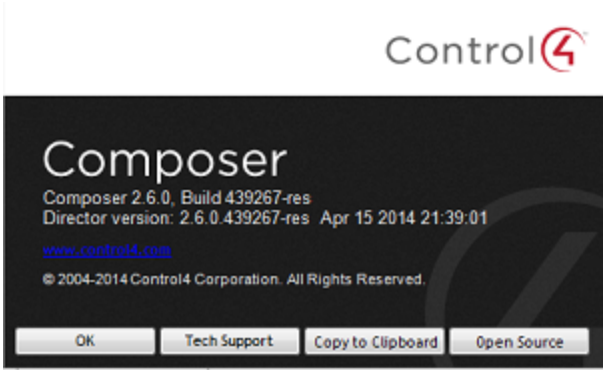
1. In the Composer menu bar, click **Help** > **About Composer**.
2. From the dialog that appears, compare the Composer and Director version numbers. For the Control4 system to run properly, these numbers must match. If they don't match, update Composer and/or Director to get to the same version. See the Composer Pro User Guide for information about updating your system, or see "Update Manager."

Example:

Composer version: 3.0.0.562742

Director version: 3.0.0.562742

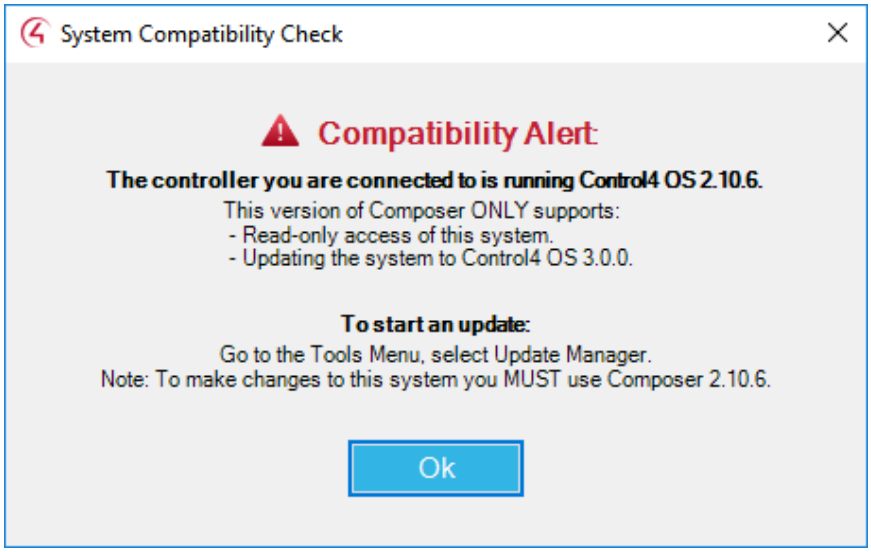
Note that the two versions in the screen below are the same.



System Compatibility Check

When connecting to a system, Composer Pro performs a capability check to ensure that the Composer version and OS version are compatible. Use the System Compatibility Check to review which version of Composer must be used to modify your system.

System Compatibility Check


System Compatibility Check
Compatibility Alert:
The controller you are connected to is running Control4 OS 2.10.6.
This version of Composer ONLY supports:
- Read-only access of this system.
- Updating the system to Control4 OS 3.0.0.
To start an update:
Go to the Tools Menu, select Update Manager.
Note: To make changes to this system you MUST use Composer 2.10.6.
Ok

Designing the Control4 system

Become familiar with the Control4 Composer Pro design options before you start to build your first project and project tree. The project tree represents the hierarchy of locations (sites, buildings, floors, and rooms) AND devices in each room. You will add all types of controllable devices to the Control4 system, including audio/video, multi-room audio, lighting, motorization, sensors, relays, and more.

Here are some sections that might interest you as you prepare to design a system:

- “Introduction to Designing a Control4 System”
- “Ways to Create a Project in Composer”
- “Purpose of Device Drivers”
- “Adding Items to the Project Tree”
- “Using Composer Views to Build a Project”

In most cases, it’s good to make a list of the actual devices to be used in the project, the manufacturer and the model number. You will need this information as you build the project. Also, before you start, create a plan for your project.

> Tip: It might be worth your while to check out some cool project management programs called "Smart Office" and "Control Integration" by Simply Reliable. These products help you manage your projects, from creating home automation proposals to integration of devices, into a Composer project. There's also a service called Blackwire Designs (blackwiredesigns.com) that can help with design and networking infrastructure.

Introduction

Designing a Control4 system in Composer Pro is similar to designing a house. You start with the plan; then you build the foundation; you build the framework; and then you add the electrical, plumbing, walls, carpets, paint, etc. to finish the home.

To give you a 'bird's eye view' about how to design and implement a Control4 system:

- Create a plan. This includes the devices to be used, where they will reside in the home, and how the network will be set up. For example, to plan a Centralized Lighting project, you’ll need to obtain the blueprint plan and where all of the lighting devices and panels will be located in the home, ensure that all of the lighting legs are clearly identified, determine what types of loads will be controlled by the centralized system, and where the panels will be located (see Control4 University on control4.com for more information).
- Physically install and connect the Control4 and third-party devices that need to communicate to the network. Note: Many Control4 or third-party devices

may be installed already.

- Physically connect these devices to each other and to the controller(s) used in the project so they all communicate with the controller and the home network.
- In the Composer Pro software, build the project tree using the System Design view. This includes adding objects to the project tree that represent the physical buildings, rooms, and devices. Note: You can connect a physical device, and then add it to Composer one at a time if you prefer.
- In Composer Pro, identify and *virtually* connect all of the devices. In addition to the hardware connections, you have to connect your devices the same way in the Composer software also.
- Customize the behavior of the devices in Composer and on the Navigators. To customize the devices for specific functions, you program events and actions, Lighting Scenes, agents, and so on for your customers' needs. Many custom functions can be performed on the touch screens and on-screen Navigators. See the Control4 System User Guide and Control4 Quick Start Guide for more information.

Designing a fully functioning Control4 system includes these major steps:

- **Use Existing or Custom Device Drivers**. Every device in the Control4 system needs a corresponding device driver so that controlling the device is possible. When designing and implementing a Control4 system, each time you add a device to a room, a corresponding device driver must be added to the Composer project in the project tree. Device drivers for Control4 products come pre-installed in Composer. In addition, device drivers for hundreds of third-party devices are available through an online database, and easily can be added to the project when the driver is available. If a driver for the model you need does not exist, you can use the Driver Creation Wizard (available through a menu option) or DriverWorks (a free add-on utility) to create a custom driver. See the *Composer Pro User Guide* for details.

  Tip: If you can't find the device driver you need, you can start with an existing device driver, and modify it for your device using the Driver Creation Wizard or Driver Editor.

- **Make the connections**. In the Composer project, you identify all physical device connections to the Control4 system, including control, AV (audio, video), network, and other connections (there are several types of connections). Identifying a device to the system means the controller acknowledges that the device exists on the home network and can communicate with it and the other devices in the network. Use the Connections view in Composer for this.

- **Register the system at customer.control4.com**. Control4 strongly recommends that you register each system you install at my.control4.com to maintain the system software easily through online downloads. Only registered systems can use all of the media services available. In addition, system registration is one of the essential steps in enabling remote access to the system.
- Set up the media. You identify existing media on the system using the Media view in Composer. The Media view helps you search or scan for movies, videos or music in stored media and auto-generate a list of local broadcast channels, stations, playlists, etc. After you have searched for or scanned in the existing media, you can test Media access through the navigation devices (also known as Navigators).
- Configure the properties. You will want to set individual device properties according to your customers' wishes, because most devices have some settings that can be configured (for example, dimmers that ramp up and down).
- Program events and actions. You define interactions between system events and the actions of other devices. For example, when a projector turns on, it can trigger other devices (lights, etc.) in the Home Theater to dim down or turn off.
- Create the variables and agents for use in programming. Advanced programming setup options are available to you, including string, Boolean, device properties, variables, delays, and agents. Using these options, you can configure, for example, a 3-way switch, turn equipment on and off with proper delay times, create Lighting Scenes, and perform other desired programming between devices. Advanced programming is discussed in the Composer Pro User Guide.
- Customize the Navigators. You complete the registration process and enable Remote Access. You can work with your customers also to set up screen savers and other custom functions on their Navigators.
- **Centralized Lighting design**. Designing for a Centralized Lighting system is a bit more complicated than designing a typical control system. For details about Centralized Lighting, see the Centralized Lighting Products section on the Control4 website, and take available training classes.

Purpose of device drivers

Every device in the Control4 system needs a corresponding device driver so the device can be controlled by the Control4 system. When you design a system in Composer, the corresponding device driver is added to the project each time you add a new device to a room.

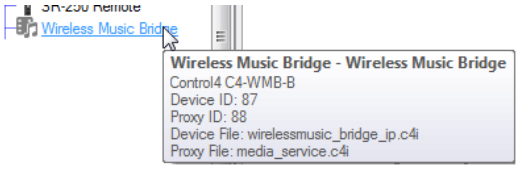
Device drivers for Control4 products come pre-installed in Composer. Device drivers for hundreds of third-party devices are available through an online database and can be added easily to the project. If a driver for the model you need does not exist, you can use the Driver Wizard to create a custom driver.

> Note: Creating a device driver is an advanced skill in Composer. For detailed information about how to create a driver, see "Creating device drivers" in the Composer Pro User Guide.

Adding items to the project tree

To add items to the project tree or other lists in a Composer project, use one of these methods:

- **Double-click**—After selecting a location in the project tree, double-click an item in the Items pane to add it to a selected location in the project tree.
- **Drag and drop**—Drag and drop items (such as building, floors, rooms, devices, etc.) from the Items pane to the desired location in the project tree. When dragging-and-dropping items, drag the item directly on top of the room or location (such as site, building, floor) in the project tree (left pane) where you want the item to reside.
- **Hover**—After you've added an item to the project tree, you can hover over it for a pop-up of important identifying information.



> Example**:** Drag a device (for example, a television) directly on top of the Theater room to ensure it resides in that room.

Building a project in System Design

Using the *System Design* view, you create the foundation of the Control4 system by building a project tree in *System Design*.

> Tip: Before you begin to build the system, you may want to assign all of the devices that will be used in the Control4 system unique and meaningful titles if you used a planning worksheet. That way, they will be easy to identify when you connect them to the home network.

To build a new project tree in System Design:

1. Start Composer Pro and connect to a Director. A new project opens in the *System Design* view by default.

2. In *System Design*, click the **Properties** tab, and enter the following information:
   - **Name**—Enter homeowner's name or other project name.
   - **ZIP Code/Postal Code**—In Lookup, enter the homeowner's ZIP Code.
   - **Latitude and Longitude**—Populated automatically when you enter a ZIP Code or postal code.
   - **Date**—Update as needed.
   - **Time**—Update as needed.
   - Click to select the project tree.
3. **Add the locations** to the project tree, including sites, buildings, floors, and rooms.

   Composer Pro requires this location hierarchy: Site > Building > Floor > Room. The devices will be added to the rooms later.

Tip: You do not have to add every level in the hierarchy manually. If you begin building your project tree by adding a room, Composer Pro automatically adds a Building and Floor object for you. You can easily rename these objects in the tree later.

1. In the project tree, select a location (site, building, or floor) where a room exists.

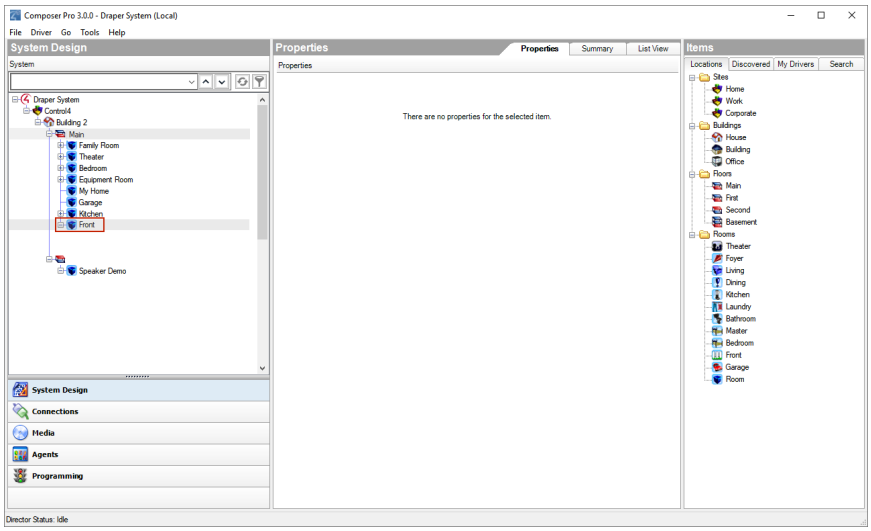
Example: The Master Bedroom is on the Second floor, so you would click **Second** to select it. Go to the Items pane and double-click or drag-and-drop **Master Bedroom** to copy it to the project tree.

2. In the Items pane > Locations tab, double-click the **room** you want to add. The room displays in the selected location in the project tree. The room is given a default name, but you can rename it any time by right-clicking on the object in the project tree, and choosing **Rename**.
3. Repeat these steps until you have included all of the floors and rooms on each floor in the home to complete your project.

Example: Add three rooms to the Main floor which already has a few rooms and the Garage.

4. Click **Theater** in the Items pane > **Locations** tab to add a Home > **House** > **Main** > **Theater** to the project tree.
5. Select **Main** in the project tree, and then click **Bedroom** to add it to the Main floor.

6. With **Main** still highlighted in the project tree, click the **Front** room to add it to the Main floor.



4. Click the **room** and **add** the devices. For example, add the **controller** in a room of the project tree.

Important: Ensure that the devices you select have exact and meaningful titles; for example, “Wireless Dimmer” could be renamed to **East Wall Wireless Dimmer** for easy recognition later. If you have several devices, such as wireless dimmers, in the same room give them a unique name.

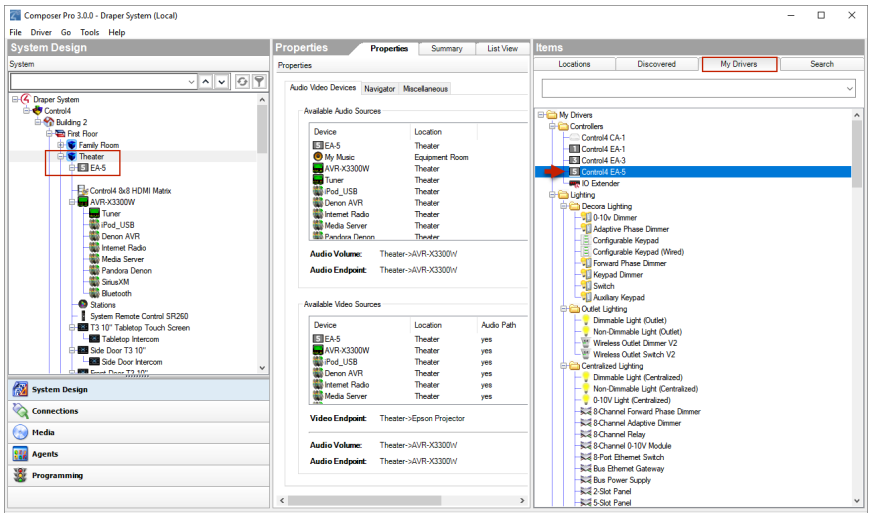
Tip: You can right-click the driver in the project tree to: Rename, Edit Driver, Export Driver, Update Driver, or Delete a driver. Use the same procedure to Update Driver as for Add Driver (see “Driver menu”).

Note: If you installed this version of Composer on a computer that has an older version of Composer, right-click in the white space below the My Driver tab and select **Restore Default List**. This action updates the My Drivers list.

1. Click the room in the project tree.
2. From Items pane > My Drivers tab, double-click a controller to move it to the selected room (all devices to be added must be selected from the My Drivers tab).

Example: Select the **Theater** room, and then double-click the **controller**. The controller and associated Digital Audio objects appear in the project tree. Digital Audio is a component that resides on the controller, but shows up as a separate object in the project

tree. Digital Audio provides the functionality to play media.



5. Add the Control4 lighting devices and Navigators to the selected room if they reside there.

> Example: Add the following devices to the Theater room.

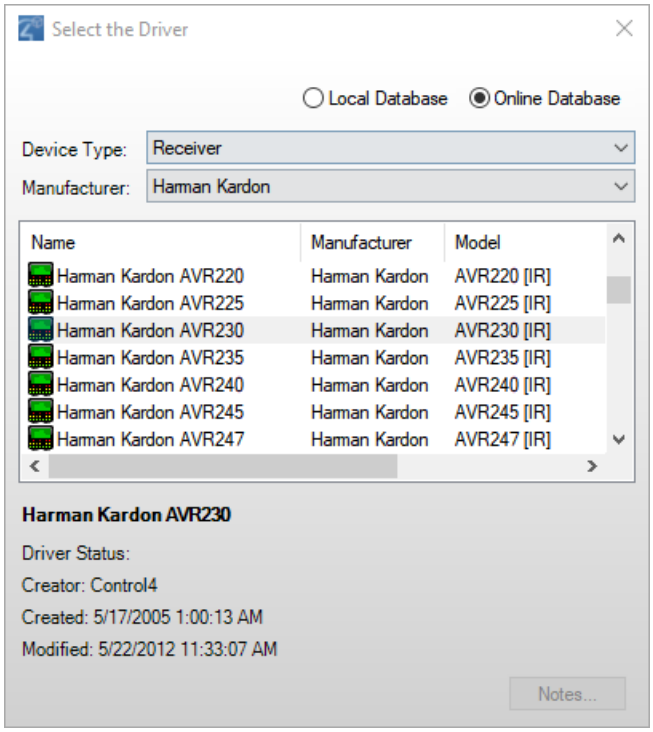
1. Double-click **Wireless Dimmer**, and then rename it to **Dimmer**.
2. Double-click **Wireless Switch**, and then rename it to **Light Switch**.
3. Double-click **Wireless Outlet Switch**, and then rename it to **TV Outlet Switch**. (This will be used to control the power on a TV that uses an On/Off toggle switch.)
4. Double-click System Remote Control SR-250.
5. Double-click **6 Button Keypad**.

   Note: If you have a wireless touch screen, add it now to your project.
6. Add all applicable audio and video devices to the selected room.

Here are three examples to follow.

> Example 1: Add a receiver to the Theater room

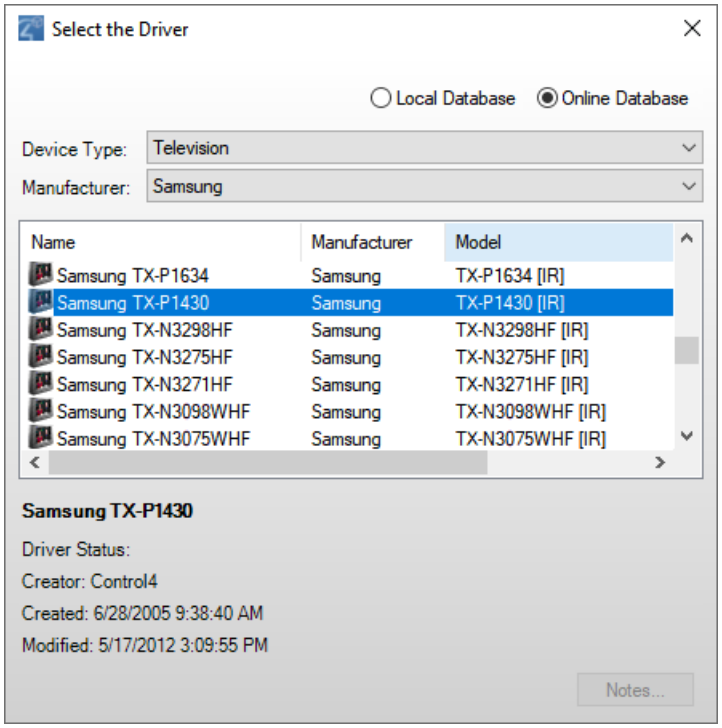
1. Select the **Theater** room in the project tree.
2. Double-click **Receiver** in the Audio/Video section of the My Drivers tab. A dialog box displays with Local Database selected and the receiver drivers that are currently available in the local database.
3. Select the receiver's **manufacturer** and **model**. In the dialog box, select **Online Database**, select the manufacturer **Harmon Kardon**, and then double-click **AVR230[IR]**.



Note: The Receiver object is added to the tree, along with a Tuner. The next time you add a receiver to this project, the AVR230[IR] will appear in local database driver list.

Example 2: Add a TV to the Theater room

1. Select the **Theater** room in the project tree.
2. Double-click **Television** in the Audio/Video section of the My Drivers tab. A dialog box displays with local database selected, and the TV drivers currently available in the local database.
3. In the dialog box, select **Online Database**, select the manufacturer **Samsung**, and then double-click **TX-P1430[IR]**.



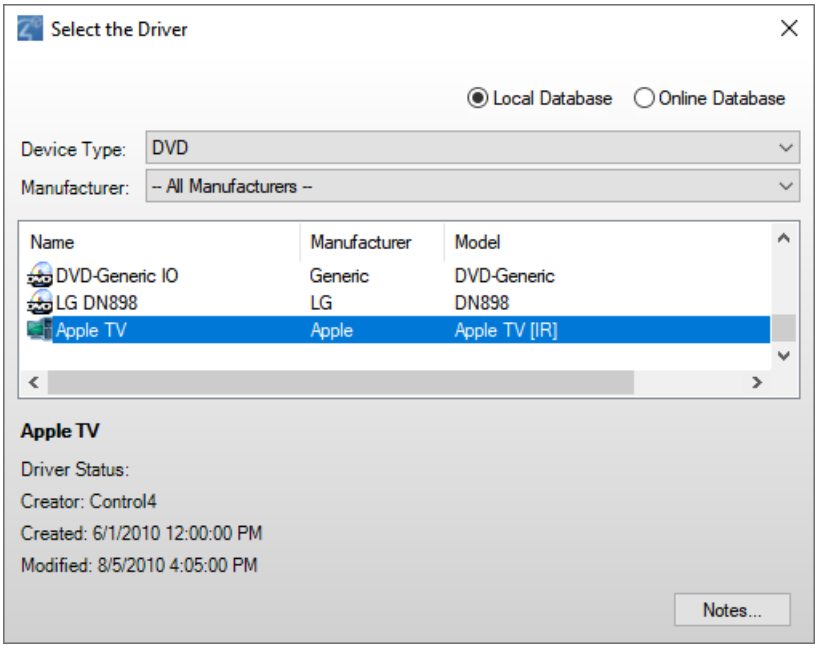
Notes:

The UHF/VHF object is added automatically to enable you to scan for UHF/VHF broadcast channels.

The next time you add a TV to this project, the TX-P1430[IR] appears in the local database driver list.

Example 3: Add the DVD player to the Theater room

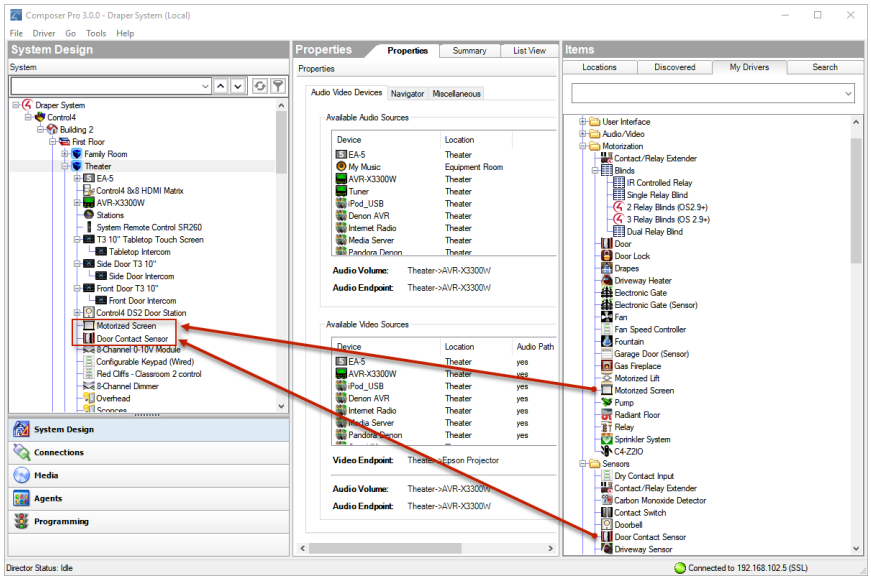
1. Select the **Theater** room in the project tree.
2. Double-click **DVD** in the Audio/Video section of My Drivers tab.
3. In the dialog box that appears, select **Online Database**, select the manufacturer **Apple**, and then double-click DVD **Apple TV [IR]**.



7. **Add Motorized devices or Sensors**, if applicable, to the selected room.

Example: From the My Drivers tab, add a **Motorized Screen** and a **Door Contact Sensor** to the Theater room from the online database.

1. Select **Theater** in the project tree.
2. In the *My Drivers* tab under *Motorization* (scroll down), double-click **Motorized Screen**.
3. In the *My Drivers* tab under *Sensors* (scroll down), double-click **Door Contact Sensor**.



8. **Add an HVAC**, if available, to the selected room.
    - Add a Security Panel, if available, to the selected room.
    - Add an IP Camera, if available, to the selected room.
    - Add a pool and spa controller, if available, to the selected room.
    - Add Network File Storage, if available, to the selected room.
    - Repeat Steps 6–8 as needed for each room.
9. Identify and the test the connections. See the Composer Pro User Guide for configuration and connection information.

Composer Pro design methods

Planning a Composer Pro project: Create a plan

Before you start to work on a new Control Composer project (especially if you're new at it) it's best to create a plan.

> Tip: Some of our dealers use a variety of design tools, for example, AVSnap, Microsoft Visio, AutoCAD, and conceptdraw. AVSnap seems to be the cheapest and the most popular tool.

Here are some suggestions:

- If you haven't done so yet, we strongly recommend that everyone who installs and configures Control4 products take the 'Tech 1 Training' class provided by Control4. Send an email message to training@control4.com or go to http://dealer.control4.com/dealer/training (dealer login required) to find out how to enroll.
- Sign up for the Control4 Online Training sessions.
- Check out the Control4 Troubleshooting Guides, Best Practices, and other materials on the Training site in the dealer portal.
- Check the Control4 Knowledgebase and dealer forums.
- Review the documentation on the Control4 dealer website.
- Check out the Training web page on the dealer website.

Home automation design methods

Prerequisites to creating a design

Before you begin to create a design for a Control4 system, it’s a good idea to create a plan so you know all of the devices in each room, how many rooms there are, how many floors, buildings, the home network structure, and so on.

Guidelines of system design

Consider the following items before you start to design a project for a Control4 automated home.

- **Use existing or custom device drivers**—Every device in the system needs a corresponding device driver so the Control4 system can control the device. When designing the system, each time you add a physical device to a room, for example, a DVD player, the corresponding device driver must be added to the project in the project tree. Device drivers for Control4 products are installed in Composer Pro. Device drivers for hundreds of third-party devices are available through an online database, and can be added easily to the project when the driver is available. If a driver for the model of a device does not exist, you can use the Driver Creation Wizard (available through a menu option) or DriverWorks (a free add-on utility) to create a custom driver.
- **Connect and identify the devices to the network**—In the Composer project, you identify all physical connections to the system, including control, AV (audio, video), network, and other connections. Use to the Connections view in Composer to complete this task.
- **Register the system at my.control4.com**—Control4 recommends that you register each system you install at customer.control4.com so you can maintain the system software using the online downloads.

  Important: Only registered systems can use all of the media services that are available to Control4 customers. System registration is one of the essential steps in enabling remote access to the system.
- **Set up the media**—Identify any existing media on the system using the Media view in Composer. The Media view helps you search or scan stored media and auto-generate a list of local broadcast channels and stations. After you've searched or scanned in the existing media, you can test the Media access through the navigation devices (also known as Navigators), and you can create playlists also.
- **Configure properties**—Manage a device's settings in the Properties pane.
- **Program events and actions**—Define interactions between system events and the actions of other devices in the *Programming* view. For example, when a projector turns on, it can trigger other devices in the Home Theater to turn on or off causing an event to occur.
- **Create variables and agents for use in programming**—Advanced setup options are available in Composer: string, Boolean, device properties, variables, delays, and agents. Using these options, you can configure, for example, a 3-way switch, turn equipment on and off with proper delay times, create lighting scenes, and other customized programming between devices.

- **Customize the Navigators**—Complete the registration process and enable remote access. Work with your customers to set up screen savers and other custom functions.

Using Composer views to build a project

Composer Pro lets you set up a Control4 system using different Composer views for different tasks. In Composer views, you can add devices, make connections, set up media, and program the system using devices and agents.

In Composer views, you have the flexibility to follow any setup path you choose as long as a controller is the first device you add to the project.

> Note: Before you start to create a project, you will need to understand how to use the views.

To use Composer views:

1. Start Composer Pro and connect to a Director.



2. The *System Design* view appears by default. Notice that the *System Design*, *Properties* and *Items* panes appear in the screen. Each view has its own set of panes.

Making and testing the connections

Connecting the hardware

Before you can design and build a project in Composer Pro, first start by installing the devices and connecting the cables on every device that will be a part of the Control4 system. Otherwise, the devices will not be acknowledged by Composer and Director.

If you purchased equipment from Control4, ensure that you've carefully read the installation or setup instructions and/or user guides included in the box. These instructions will show you how to attach the cables, and in some cases, how to set up and use the device in Composer Pro.

Testing the device connections

When you test a Control4 device connection, you are ensuring that the connection is successful so you don't encounter any problems with devices not functioning later on. You must perform this action for customer satisfaction. For information about identifying devices and device connections, see the Composer Pro User Guide.

The following types of connections may need to be tested on the Control4 system:

- **Network connections**—Defines the devices that use a network address. Network connections include IP and Zigbee or Zigbee Pro devices.
- **Control connections**—Defines the control connection between a device and the controller. Control connections include contacts, relays, serial, and IR-controlled (infrared) devices.
- **Audio and video connections**—Defines the devices that have audio and/or video signals.
- **Room connections**—Defines the video, audio, or video/audio end points and the video/audio or audio volume for the selected room.

Testing network connections

In the *Connections* view, click the **Network** tab > **IP Network**. The list of devices appears.

Make sure there is a network address for every item in the list. If there is not, see "Cannot identify the device to the network" in the Composer Pro User Guide.

Testing control and AV connections

In the *Connections* view, click the **Control/AV** tab. This list of devices appears.

Testing room connections

In the *Connections* view, click the **Control/AV** tab. This list of devices appears in the Room Connections pane.

Registering the Control4 system

Every system must be registered at customer.control4.com to maintain the system software through online downloads, and to use all of the media features in the system (for example, the Control4 online media database for scanning music). System registration is also one of the essential first steps in enabling remote access to the system.

After you complete the initial Control4 system setup (adding devices to a project, identifying them automatically for devices released with OS 2.3.0 or later, and making software connections for each device), you are ready to register the system and set up the media. "Setting Up the Media" is discussed in the Composer Pro User Guide.

You can register the system either from Composer or by using a Navigator. See the sections below.

Register the system at customer.control4.com

Control4 recommends that you register each Control4 system you install at customer.control4.com to maintain the system software easily through online downloads. Only registered systems can use all of the media services available.

System registration, which includes setting up a customer.control4.com account, is required to use most of the media services that are available in the Control4 system, for example, scanning media into the system (so that you don't need to manually add individual music files).

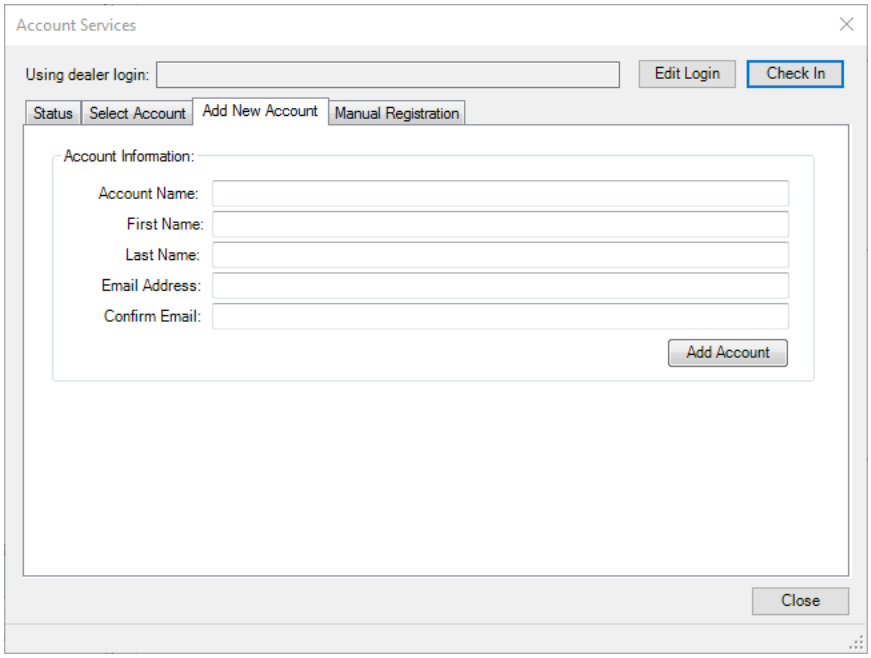
You can register the system now through Composer, or later through a Navigator if you customize the Navigator. You may have already registered the system in Composer to set up media. If not, you can register the system using any Internet connection and one of the Navigators that is connected and identified.

Register the controller from Composer Pro

Composer Pro lets you register the controller to a customer account without having to log in to the customer's account. You can now create a new account and register the controller in one step, register to an existing account found under your dealer of record, or manually register the controller using the 10-digit code from the customer's account page under *Controller registration*.

To set up a new customer.control4.com account and register this Control4 system:

1. In Composer Pro, go to **Tools** > **Account Services**.
2. Click the **Add New Account** tab to create a customer.control4.com account and start the registration process for the user.

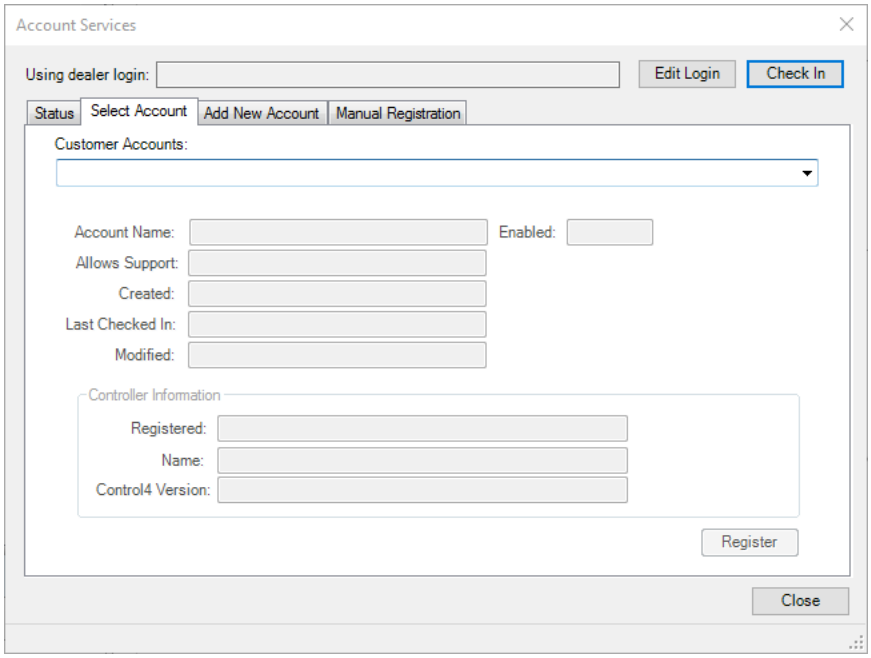


3. Complete the *Account Information* form for the user, and then record the Account Name and Email Address for the user's future reference.
4. Click **Add Account** to create an account for this Control4 system and register the controller to the new account.

To register the system to an existing customer account:

1. In Composer Pro, go to **Tools** > **Account Services.**

2. Click **Select Account** and select the existing account you wish to register to in the list of *Customer Accounts*.

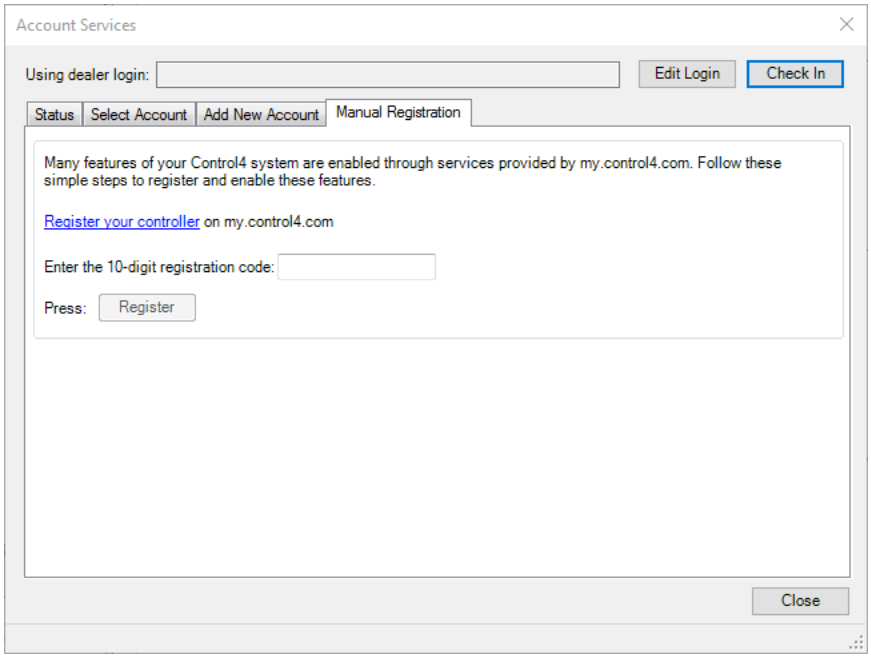


> Note: If the existing customer account does not show up in the Customer Accounts list, have the customer log in to their account and verify their dealer of record is pointing to your dealer account.

To manually register the system to an existing customer account:

1. In Composer Pro, go to **Tools** > **Account Services.**

2. Click **Manual Registration**.



3. From the customer.control4.com account page, copy the 10-digit registration code found under My Devices > Controller Registration > Register New Controller. This code is time sensitive and must be used within **10 minutes**. It provides a temporary code used to exchange the security parameters and create a secure connection between customer.control4.com and the controller.
4. On the Account Services page, click the text box and paste the **10-digit registration code** in the box.
5. Click the **Register** button on the Account Services page in Composer (now enabled) to complete the registration. The Current Status changes to 'Registered.'

Setting up a 4Sight subscription

Use the Internet to set up a 4Sight subscription. This feature enables a Control4 system user to log in to the Internet and manage their Control4 system on the web. Consumers will need 4Sight to use Anywhere Access also.

> Note: 4Sight subscriptions are sold separately.

Prerequisites

1. Design and set up the project.
2. Register the Control4 controller and the system owner.

When a 4Sight subscription has been obtained for the Control4 system, this setup can be done by the homeowner or installer. The installer or a Control4 representative should be able to provide information about how the homeowner can set up a customer account. The Control4 System User Guide or Account Setup provides that information for the homeowner.

To set up a 4Sight subscription at customer.control4.com:

1. Obtain a **4Sight subscription code** for the system (sold separately).
2. Log in to customer.control4.com using the homeowner/user email address and password.
3. From the My Account tab, select the **Subscriptions** view.
4. Enter the **4Sight subscription code** provided by your Control4 representative, and then click **Activate**.

> Tip: Scroll down and view **Account Subscriptions** to see which subscriptions you already have.

Managing and assigning Composer Pro licenses

Use my.control4.com to set up additional Composer Pro Licenses for dealers and their employees who use Composer Pro. You must do this before you run Composer Pro.

Notes

- Controller registration is separate from a Composer Pro License.
- You cannot assign Composer Pro Licenses to consumer accounts; these are for dealers and their employees only.
- Thirty days after the license is activated, you will be notified to renew the license. You can choose not to, or you can extend the period another 30 days.

Prerequisites

- Composer Pro must be installed or updated to the current release.
- A valid dealer account must be set up.
- A valid dealer sub-account that the dealer account manages can also be used.
- Access to my.control4.com.

You can find comprehensive information about this subject in Managing Dealer Accounts in my.control4.com.

Where to go from here

This Control4 *Composer Pro Getting Started* guide gave you:

- An overview of Composer: how to install and start it, how to access a Director, and includes a preview of the Composer interface (views, menus, properties, panes, etc.).
- An overview of how to start designing your project with suggested tools.
- An overview about connections and how to test devices.
- How to register the Control4 system.
- How to set up a 4Sight subscription.
- How to set up Remote Access.
- Examples about how to build a system in System Design.

More detailed and advanced sections (Composer Pro User Guide) are outside the scope of this document but you can find them on the Dealer Portal.

The advanced sections give you specific details about:

- Setting Up Media
- Creating Device Drivers
- Making Connections
- Verifying Connections
- Configuring Devices
- Configuring Properties
- Basic Programming
- Advanced Programming
- Customizing Navigators
- Installing Devices
- Troubleshooting the System

Contacting Control4 technical support

Should you encounter any problems while using Composer Pro, please contact Control4 Technical Support for assistance.

- Phone: 1-888-400-4072
- E-mail: support@control4.com

Other resources

Also check out the Control4 Forums or Knowledgebase.

Project build example using system design

The following sample project steps you through the creation of a Control4 project using Composer Pro. This example assumes that you've already saved the project as a backup, and covers basic device additions to the project, but not connecting or identifying the components. This example project:

- Includes a theater room
- Adds keypad and electrical interfaces
- Adds AV components
- Adds a touch screen

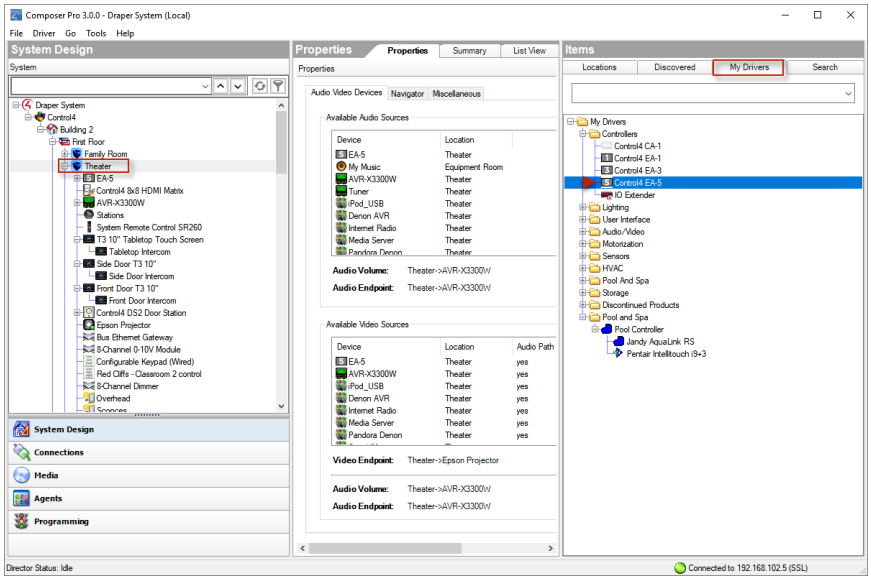
Adding a controller

When setting up a system, first add the controller to the list. You must attach a controller to each television you add to the Control4 system.

To add a controller:

1. Start Composer and connect to a director.
2. In the *System Design* pane's project tree, select the **Theater** room.
3. In the *Items* pane, click the **My Drivers** tab.
4. In the *Controller* category, double-click **EA-5**. The controller is added to the project's Theater room.

Note: If you installed this version of Composer Pro on a computer that already had an older version of Composer Pro, right-click anywhere in the **My Driver** tab, then click **Restore Default List**. The My Driver list updates.



Adding keypad and electrical interfaces

After adding a controller, you can add dimmers, switches, keypads, outlets, and a remote control.

To add keypad interfaces:

1. In the *System Design* pane's project tree, select the **Theater** room.
2. In the *My Drivers* tab, do the following:

1. Under Lighting > Light (v2), double-click **Adaptive Phase Dimmer** to add it to the project, and then rename it to **Dimmer** in the project.
2. Under Lighting > Light (v2), double-click **Switch**, and then rename it to **Light Switch**.
3. Under Lighting > Light (v2), double-click **Wireless Outlet Switch**, and then rename it to **Television Outlet Switch**.
4. Under User Interface, double-click **System Remote Control**.
5. Under User Interface, double-click **Configurable Keypad**.

Tip: Use a descriptive name for items added to a project. You can right-click and select **Rename**, or you can begin typing right after the item is added. For example, if you have two dimmers in a room, you could name one "Wall Dimmer" and the other "Ceiling Dimmer." This helps you clearly identify items later when making connections.

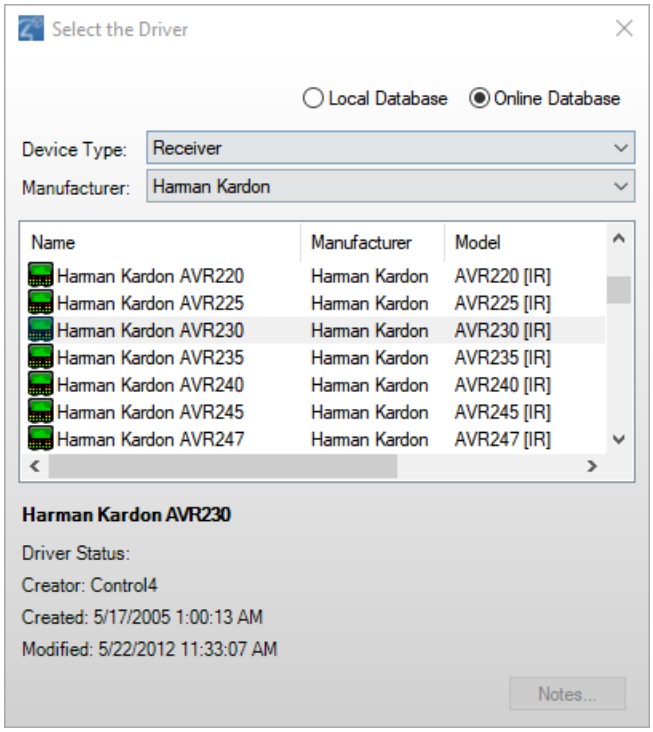
Adding AV components

After adding interfaces, you can add the main components of the home theater.

To add AV components:

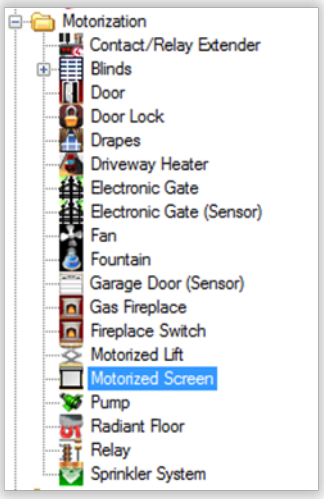
1. In the *System Design* pane's project tree, select the **Theater** room.
2. Add a receiver to the room:

1. In the *My Drivers* tab, under *Audio/Video*, double-click **Receiver**.
2. In the dialog box that opens, select **Online**, select the manufacturer **Harmon Kardon**, then double-click **AVR230[IR]**. The receiver is added to the project.



3. Add a retracting movie screen to the room:

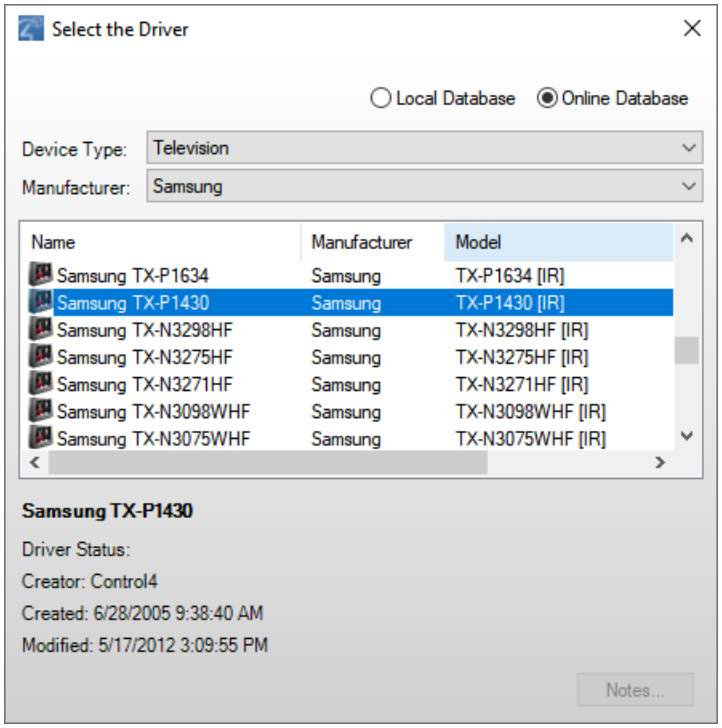
1. In the *My Drivers* tab, under *Motorization*, double-click **Motorized Screen**.



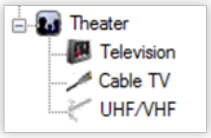
2. Under *Sensors*, double-click **Door Contact Sensor**.

4. Add a TV to the room:

1. Under *Audio/Video*, double-click **Television**.
2. In the dialog box that opens, select **Online Database**, select the manufacturer **Samsung**, then double-click **TX-P1430[IR]**. The TV is added to the project.

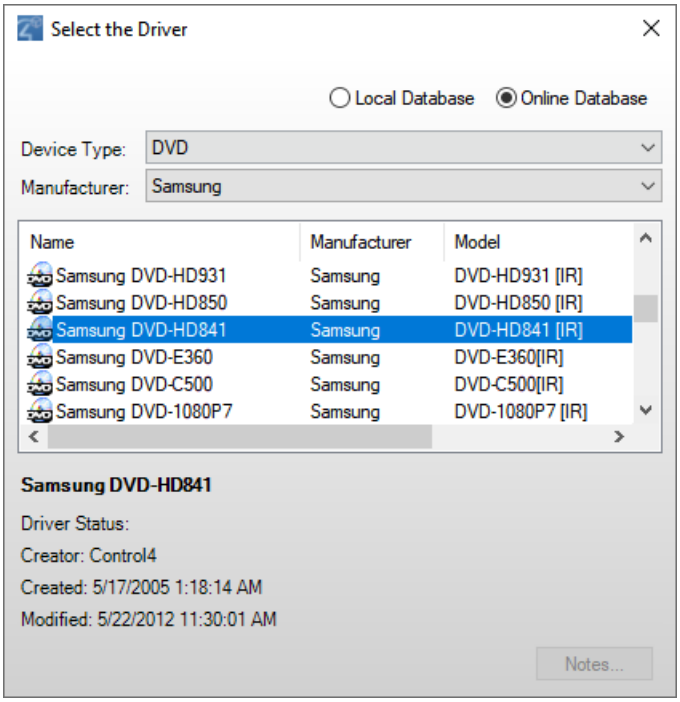


The Cable TV and UHF/VHF objects are also added to the project, to enable you to scan for cable and broadcast channels.



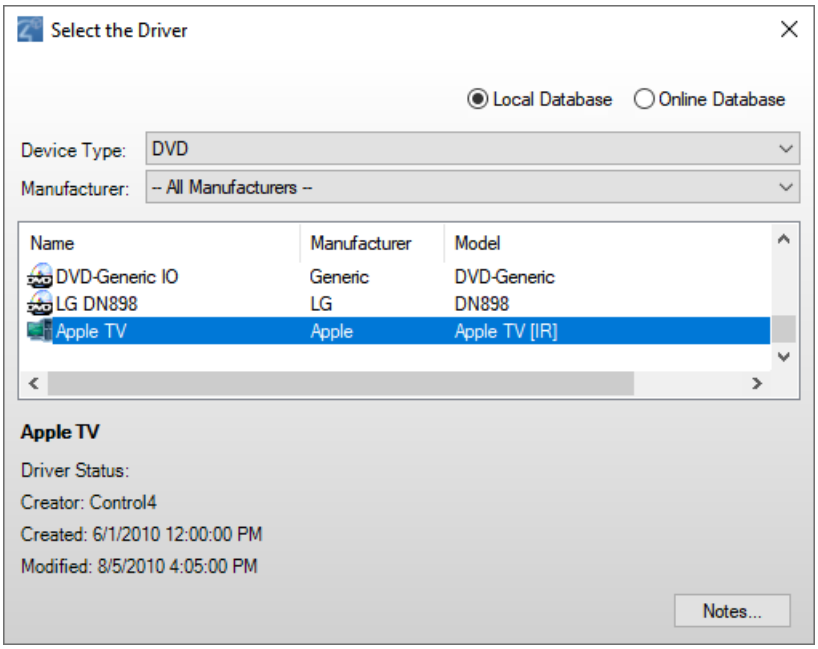
5. Add a DVD player to the room:

1. Under *Audio/Video*, double-click **DVD**.
2. In the dialog box that opens, select **Online Database**, select the manufacturer **Samsung**, and then double-click **DVD HD841[IR]**. The DVD is added to the project.



6. Add online TV to the room:

1. Under *Audio/Video*, double-click **DVD**.
2. In the dialog box that opens, select **Online Database**, select the manufacturer **Apple**, and then double-click **AppleTV [IR]**. Apple TV is added to the project.

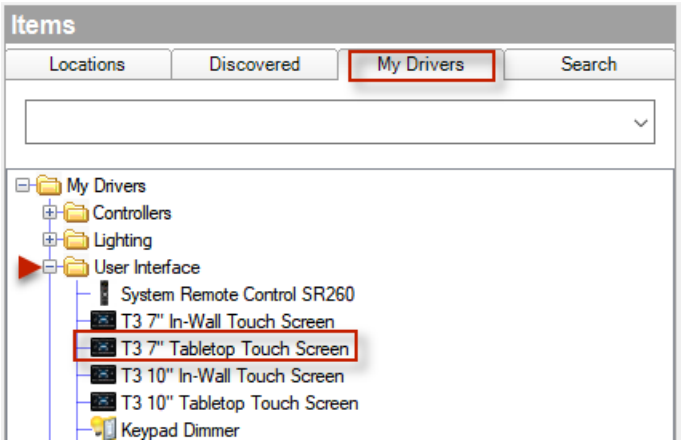


Adding a touch screen

After adding AV components, add a touch screen.

To add a touch screen:

1. Under *User Interface*, double-click a **Touch Screen**. The touch screen is added to the project.



Finishing the project

After adding devices to your project, you will still need to identify, connect, and test the devices. For more information, see *Connecting and verifying devices* in the Composer Pro User Guide.

Basics

Composer Pro basics

Use this chapter to learn how to:

- Install and configure devices
- Configure Composer Pro properties

Installing devices

Use the Dealer Portal at dealer.control4.com, Products > Additional Resources or Support > Documentation pages to access PDFs or web help for all current and past product installation and setup guides, and then install and set up your Control4 system devices according to these guides. OS 2.3.0 or later supports the auto discovery of many current devices. See "How to add devices to a project" and "Configuring third-party devices" in this document for details.

If you're installing devices that are not owned by Control4, you may need to edit an existing driver or create a new one. See "Creating device drivers."

To access the installation, setup, and user documents in PDF format:

1. Go to the dealer Documentation page.
2. Log in using your dealer username and password.
3. If the list of documents doesn't appear, click the Products link, and then select Support > Documentation.
4. View the list and then click the link for the document you want to view or print.

Configuring device properties

Use the Composer Pro Properties pane in System Design to change device properties. The Properties pane lets you make configuration changes to a project, room, or device.

In the Control4 system, you have a choice of configuration options using these property types:

- **Project Properties**—Lets you set project-specific configuration options.
- **Room Properties**–Lets you set room-specific configuration options.
- **List View Properties**–Lets you set device properties listed by location, for example, room, floor, house, etc.
- **Device Properties**–Lets you set device-specific configuration options.

To configure properties:

1. Start Composer and connect to a Director.
2. Click **System Design**.
3. Select one of the following property types:
   - **Project**—Select the root node in the project tree, for example the project name (such as Franklin Smith Home) to access the project properties and modify the:
   - Project name
   - ZIP Code
   - Latitude/longitude
   - Date
   - Time (12-hour and 24-hour clocks)

- Time zone
- Lighting Defaults
- Project Settings Control
- System Security
- Localization
- Scale (Temperature)

  For more information, see "Composer Pro properties".

- **Room**—Select the room in the project tree, for example, **Theater**; the Properties tab is visible (default).

  Room properties let you:

  - View room-specific devices
  - View media information
  - Help you troubleshoot any incorrect room connections

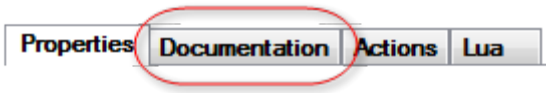
  For more information, see "Room Properties".

- **List View**—Select a room, and then select the **List View** tab. View and/or modify the devices in the room. For more information, see "Device Properties".
- **Device**—Select the device to modify the available user options. For more information, see "Device Properties".

Help for device properties

Device properties vary by type of device. Changes made to the properties of most devices are immediately applied to the system. Changes made to Navigators may not be noticeable until you refresh the Navigators using Composer Pro's File > Refresh Navigators command (Shift+F5).

For the most up-to-date device properties information, click the Documentation tab in the Properties window (available only on select devices) or the Help button on the proxy.



Configuring devices

Use this chapter to learn how to configure Control4® devices. “Configuration” can mean anything from identifying the device to the network to configuring the device’s properties within Composer Pro.

> Note: The device listings in this chapter have been reorganized to better match the order in Composer Pro’s My Drivers tab.

How to add devices to a project

There are two options to add a device to a project and identify it in the Control4 system:

- **Auto Discovery**—In OS 2.3.0 or later, current Control4 devices support auto discovery via the Simple Device Discovery Protocol (SDDP) using the Discovered tab in the Items pane. This is the easiest way to add and identify new devices attached to a Control4 system because it works automatically. If the device you want to add to a project and identify in the system appears in the Discovered tab, all you do is double-click to add the device to the selected room and Director does the rest. See “Auto Discovery (SDDP)” below for more details.
- **Composer Views**—You can add a Control4-supported device driver or a third-party driver to an existing project any time using the System Design and Connections views. See “Composer Views” or “Example Projects” in this guide or "Using Composer Views to Build a Project" in Composer Pro Getting Started.

Auto Discovery (SDDP)

Auto discovery uses SDDP to automatically discover IP devices and ensure that the correct device drivers are added to a project and installed into the Control4 system. When a device uses SDDP, it can advertise on the network what it is, what driver it uses, and what its network address is.

> Note: As a best practice, Control4 recommends that you add and identify the Panelized Lighting products manually rather than using Auto Discovery.

The Auto Discovery function through SDDP does these things:

- Enables devices to use DHCP (Dynamic Host Configuration Protocol) while still being able to identify them uniquely
- Enables Director to discover and identify Control4 and some third-party devices in the Control4 system
- Enables automatic installation of drivers for discovered devices

> Note: Auto Discovery does not make the room connections. You must do that manually. See “Connecting and verifying devices” in this guide.

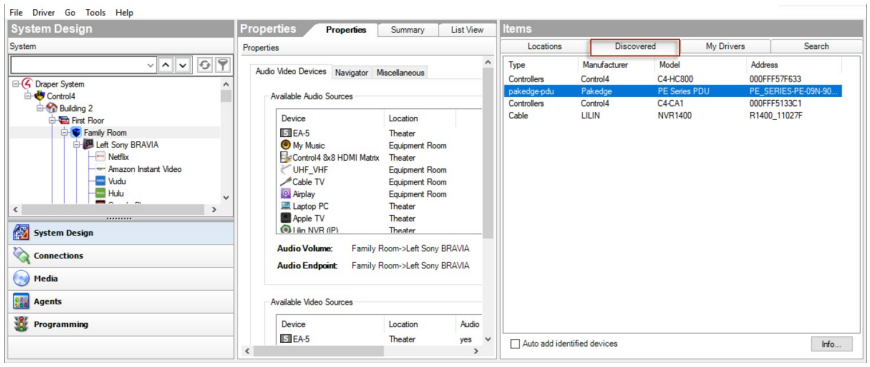
Benefits:

- It discovers devices that are not yet in the project
- It adds the manufacturer’s driver without having to search for it
- It identifies the device using a unique identifier when adding it to the project

- You don't need to type in TCP/IP addresses or restrict devices to static IP addresses

To use Auto Discovery:

1. Start Composer Pro and connect to a Director.
2. Click **System Design** (default view).
3. In the Items pane, click the **Discovered** tab. View the devices in the list.
4. In the project, click the **room** to add the device to.
5. In the Discovered list (Items pane), double-click the **device** to add it to the project. If the device you want to add does not appear in the list, it may be already added to the project or it does not support Auto Discovery. If you need to add a device that doesn't support Auto Discovery, you can use the Composer views to add and identify your device.



Add/Identify Options. Both options will add and identify a device in one step.

- Devices listed in the Discovered tab
- 'Auto add identified devices' box in the Discovered tab

To add discovered devices to the project:

1. Double-click the device to add it to the current room in the project which will add and identify it in one step.

To use the 'auto add identified' box:

1. Check the **auto add identified devices** box at the bottom of the Discovered Items pane. This allows you to go directly to the device and use the **Identify** button to add and identify it. This box is useful if you want to be very specific about the device you're adding. Without the box checked, the add/identify process will not be executed with a button press.
2. Press the **Identify** button or button-press sequence on the device.
3. The device will automatically be added to the current room in the project.

Note: If the Identify button is pressed when 'auto add identified devices' is not selected, that device will be highlighted in yellow in the Discovered tab. It will not be automatically added to the project.

Example: If you have third-party devices, for example, three different TVs in three different rooms in the home, you can check ‘auto add identified devices,’ select the room where the TV is located, and then have someone identify at the TV. The device will be added automatically to the project.

To view all devices on the network (including those already in the project) that use SDDP:

1. In Composer, click the **Connections** view.
2. Click the **Network** tab.
3. Notice in the right pane the list of devices. SDDP-recognized devices will have an SDDP text highlight.

To use the Info button:

1. Click the **Info** button in the Discovered tab, or right-click the device.
2. Select the device. An Info box opens which will give you identification and other information about that device (based on what the driver developer has provided).

Composer views

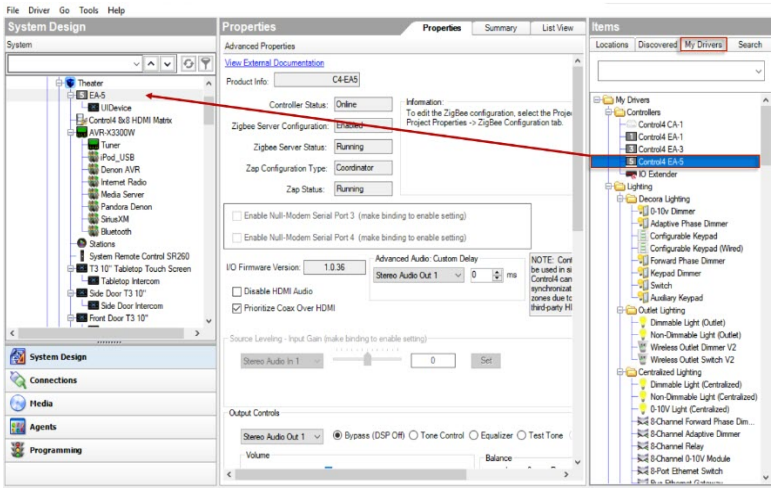
Using the My Drivers tab

In the System Design view, click the **My Drivers** tab to find device drivers and add them to the project tree (if you are not using Auto Discovery).

Read “Purpose of device drivers” and “Adding items to the Project Tree” in Composer Pro Getting Started first to understand how to create and populate the project tree for a project.

To use the My Drivers tab:

1. Install and connect the physical devices that need to be added to the Composer Pro project.
2. In the project tree, click the room to add the driver to.
3. In the System Design view, click the **My Drivers** tab in the *Items* pane.
4. Locate the device and double-click or drag the device to the System Design pane's project tree.



Tip: To ensure that you've got the correct device driver (SKU) in your project tree, after you've added it to the tree, hover over it. The SKU and other device information appears.

5. Click the **Connections** view, and then click the **Network** tab.
6. Locate the added driver in the **IP Network Connections** pane.
7. Select the device and then click **Identify**.
8. Follow the on-screen prompts in the popup. In most cases, you'll need to go to the physical device and press a button several times to identify it to the system.
9. Make the necessary control, network or AV connections. See "Connecting a Device to the Network," "Connecting and Verifying Devices," or "Connecting Devices" and "Testing the Device Connections" in Composer Pro Getting Started for information.
10. Set any necessary device properties by selecting the device (see "Properties Pane" in Composer Pro Getting Started). If any properties are available for a device, they will display in the Properties pane. The following "Configuring..." sections describe the various properties for devices.
11. If you are adding Wi-Fi devices, refer to the Control4 training courses on the Dealer Portal to learn how to install and configure Wi-Fi.

Using the Search tab

Thousands of third-party device drivers are supported in the device driver database. Drivers that are not in the local database can be found in the online database, if they are available. Use the **Search** tab to search for and add device drivers to the project tree that do not appear in the My Drivers list.

Certified and non-certified drivers are available. Look for the certification icon to the right of the driver in the list. Certified drivers appear at the top of the list if you search under **manufacturer** > **all certified**.

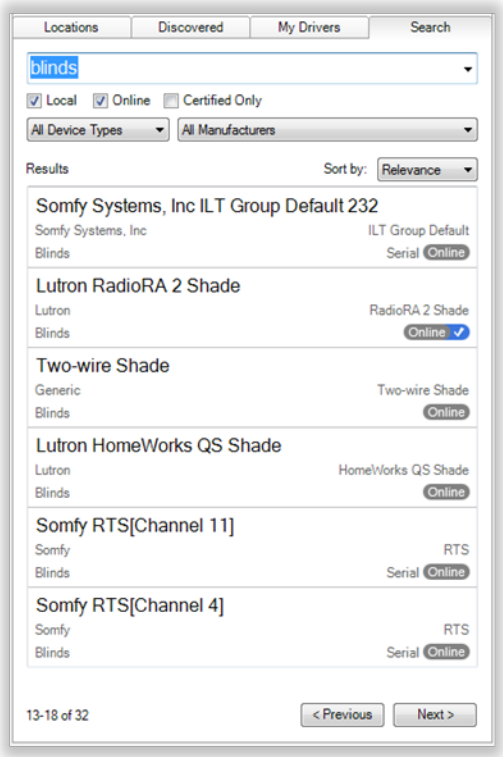
> Note: Due to the large quantity of drivers in the database, Control4 has not validated every device driver provided. If you experience limited functionality using any device driver provided by Control4, please report the limitations to Control4 Technical Support. To report defects or enhancements, please contact Control4 (phone: 1-888-400-4072 or email: support@control4.com).

Read "Purpose of device drivers" and "Adding items to the Project Tree" in Composer Pro Getting Started first to understand how to create and populate the project tree for a project.

To find a device driver using Search:

1. Install and connect the physical devices that need to be added to the Composer Pro project.
2. In the project tree, click the room to add the driver to.

3. In the System Design view, click the **Search** tab in the *Items* pane.



4. From the project tree, select the room where the device resides.
5. In the Search tab, select the device type from the Device Types filter.
6. Select the manufacturer from the Manufacturers filter.
7. Drag the driver to the project tree, or double-click the device driver to add it the project tree.

- [**search text field**]—Type the text to search for here. You can use the drop-down menu to select terms that were previously typed.
- **Local (default)**—The Local checkbox lets you view device drivers stored on your local database.
- **Online**—The Online checkbox lets you view and download drivers from the online database.
- **Certified Only**—This checkbox specifies that only Control4-Certified drivers will appear in the search results.
- **Device Types**—Lets you select the device type (proxy), for example, AV Switch (includes audio switches), Blinds, CD, Disc Changer (includes DVD and CD Changers), DVD, Light, Receiver, Satellite (includes DVRs), Cable TV, Television, Thermostat, Tuner, VCR and more.
- **Manufacturers**—Lets you select the manufacturer.

- **Sort by**—Lets you select the order that search results are displayed.
- **Results**—Detailed search results appear, including the manufacturer, model, and driver location.

8. Configure the device by setting up the connections (Network and/or Control/AV tabs). See "Connecting and verifying devices" for details.

Adding drivers manually

If you need to use a driver that is not included in a Composer Pro version, you can download it (from Control4 or a third-party source) and add it to your local database manually.

To add a driver manually:

1. In Composer Pro's menu bar, click **Driver**, then click **Add or Update Driver**.
2. In the *Select c4i file to add* dialog box, navigate to the folder containing the driver, then select it and click **Open**. The driver is added to your driver database.
3. To add a device using the new driver, follow the instructions in "Using the Search tab" above.

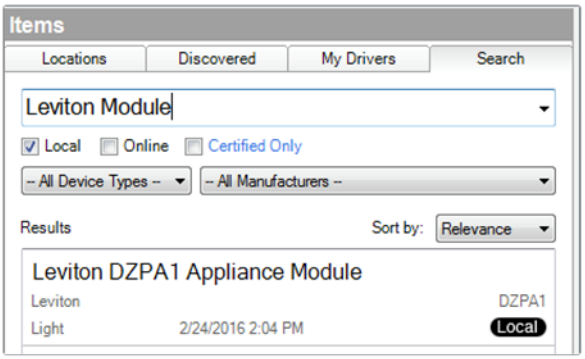
Adding Z-Wave devices

After configuring your Z-Wave controller, add drivers corresponding to the Z-Wave devices to your project. Many Z-Wave device drivers will also need a motorization, sensor, or light driver, like a door or window driver, added into your Control4 project to represent the Z-Wave device in a Control4 Navigator.

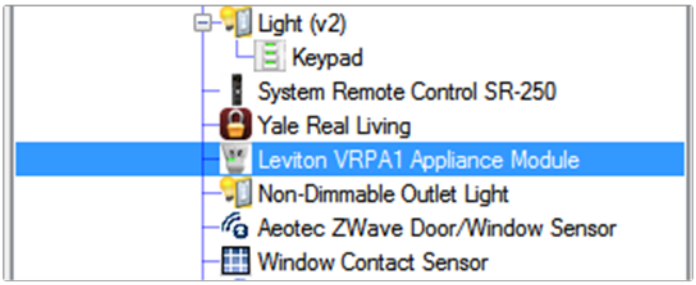
Z-Wave device drivers

To add a Z-Wave device driver into your project:

1. In System Design, enter the name of driver in the *Search* tab.



2. **Double-click** on the driver to add it into the project. You can also right-click on the driver and select **Add to Project** to add the driver.



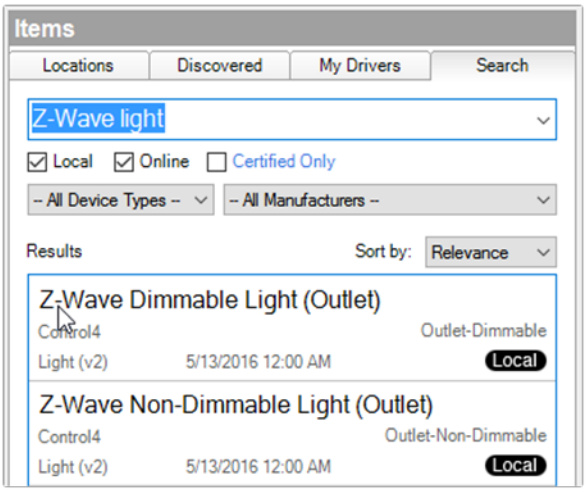
3. If you have more than a couple Z-Wave devices, it is recommended that you rename this driver to help with troubleshooting multiple devices. **Right-click** on the driver and select **Rename**. Enter a descriptive name and press **Enter.**

Most Z-Wave device drivers will also need a motorization, sensor, or light driver. For example, a window contact sensor device driver also needs the Window Contact Sensor driver and an outlet module device driver needs the Z-Wave Dimmable Light (Outlet) driver.

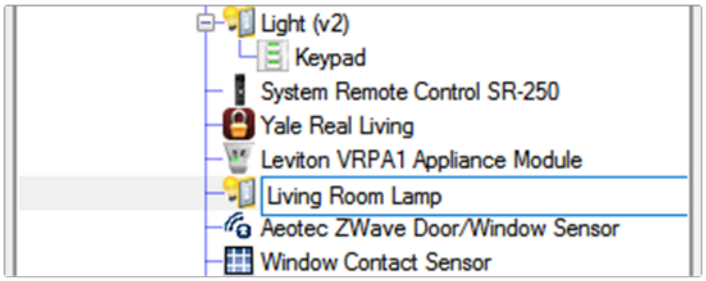
Motorization, sensor, and light drivers

To add a motorization, sensor or light driver into your project:

1. In System Design, enter the name of the driver in the search field in the *Search* tab.



2. **Double-click** on the driver to add it into the project. You can also right-click on the driver and select **Add to Project** to add the driver.
3. This is the driver that will show up in the UI, rename the driver to represent the device it is controlling. **Right-click** on the driver and select **Rename**. Enter the name to be shown in the UI and press **Enter**.



Configuring third-party devices

Use the System Design and Connections views to configure third-party devices using third-party device drivers. The same basic steps apply to third-party drivers as with Control4 devices. Many of these drivers are 'certified' and are available in the drivers online database. Some of them will use Auto Discovery in the future.

> Notes: (1) If the device you want to add and identify doesn't support Auto Discovery, you can follow the steps in "Composer views" or "Example projects" later in this guide. (2) New drivers for Sony STR-DA2800ES and DA5800ES receivers (ZSO-STR-DA2800ES or ZSO-STR-DA5800ES) are available in the Search > Online Database list ('Receiver' if the device is used as a receiver only in the Control4 system). The Sony receivers cannot be used as a controller in OS 2.6.0 or higher, see "Configuring a home controller" in this document.

Although third-party drivers are supported, they are not documented in this guide. For information about the devices and drivers, see the product's own website.

Configuring controllers

Use the System Design view to add and identify a controller to the network connection. Refer to the sections below for the controller type you want to configure. This section also covers other controller-related tasks.

> Note: Home Theater Controller, Home Controller HC-500, HC-200, HC-300, HC-1000, and Media Controller are no longer sold by Control4.

Configuring a home controller

Use the System Design view to add and configure controllers (CA-10, CORE 5, CORE 3, CORE 1, EA-1, EA-3, EA-5, and CA-1). The steps below are basically the same for all of these controllers; however, some properties may vary.

> Note: Emphasis is placed on the most recently released controllers.

Prerequisites

Ensure that the controller is installed as directed in the controller's installation guide, which is available on the Dealer Portal.

To add and configure a controller:

1. To add the driver and identify the device see " How to add devices to a project." Ensure that the correct driver is added to the project tree. The Digital Media object is added automatically also.
2. Change the Properties for each controller as shown below.

Note: *If a controller is not listed in My Drivers, right-click in* My Drivers *and select* Restore Default List*. This action updates the list. See "*Using My Drivers or Search Tabs*."*

3. To establish a *Wi-Fi* network connection to older controllers, configure a *USB* Wi-Fi Adapter for home controllers (sold separately). See "Configuring a Wi-Fi connection" for details. Wi-Fi is built-in to EA, CA-1, and HC-800 controllers, but you still have to configure them for Wi-Fi.

Note: EA-3 V2 and EA-5 V2 controllers require an external Wi-Fi adapter. The EA-1 V2 PoE controller does not support Wi-Fi.

4. (Optional) For additional controller setup, configure the properties.

1. In the System Design view project tree, select the **Home Controller** object.
2. Modify the properties in the Properties pane:
   - **Controller Status**—Shows whether the controller is Online or Offline.
   - **Zigbee Server Configuration**—Lets you view, enable and disable the Zserver. Edit Zigbee Configuration opens the Zigbee Network Settings dialog.

     Note: The Zigbee Network Settings box shows which ZAPs are configured, identified, or enabled. See also **Tools** > **Network Tools** and select the **Zigbee Network** tab.

- **IP Address**—Shows the IP address for the controller, if the controller is identified and communicating on the network.
- **Zigbee Server Status**—Shows whether the controller as Zigbee Server is Running or Not Running. Older controllers show 'Not Supported.'
- **ZAP Configuration Type**—Shows whether the controller is the Coordinator or ZAP. Older controllers show 'Not Supported.'
- **ZAP Status**—Shows whether the controller as ZAP is Running or Not Running. Older controllers show 'Not Supported.'
- **For Video Connection** (HC-250 and HC-800 only)—Select **component** or **HDMI**, change the Video **Resolution**, and then click **Set Resolution**. This will cause the controller to set the configuration and restart. Note: This does not reflect what is set in the Connections view for video output.
- **Video Resolution** (HC-250 and HC-800 only)—If your video doesn't display properly, use the drop-down to select your correct video resolution.
- **Current Resolution** (HC-250 and HC-800 only)—Displays what hardware resolution is currently configured.
- **I/O Firmware Version** (EA, HC-250, and HC-800 controllers)—Lists the current IO server firmware version of this controller.

Configuring a CA-10 Automation Controller

Use the System Design view to add and configure the CA-10 controllers.

Prerequisites

Ensure that the controller is installed as directed in the controller's installation guide (ctrl4.co/ca10-ig)

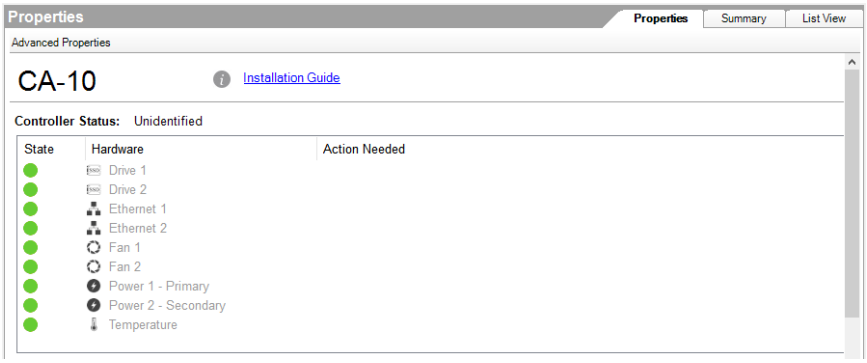
To add and configure a controller:

1. To add the driver and identify the device see " How to add devices to a project." Ensure that the correct driver is added to the project tree. The Digital Media object is added automatically also.

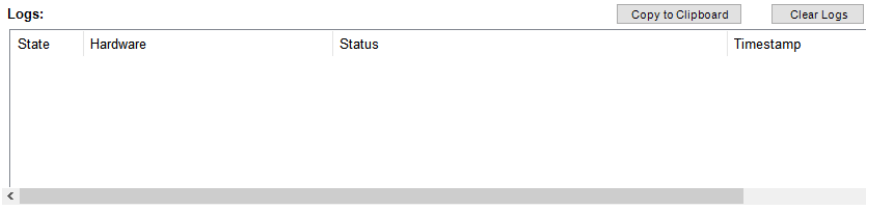
Note: *If the CA-10 controller is not listed in My Drivers, right-click in* My Drivers *and select* Restore Default List*. This action updates the list. See "*Using My Drivers or Search Tabs*."*

2. Use Composer Pro to monitor the controller status and view any needed service actions.

1. **Controller Status**—This field gives an overall controller status. The individual hardware components, their service state, and any action needed is listed below.



2. **Logs**—Use the Logs field to viewcontroller logs, clear logs, and copy log text to the clipboard to export the log data.



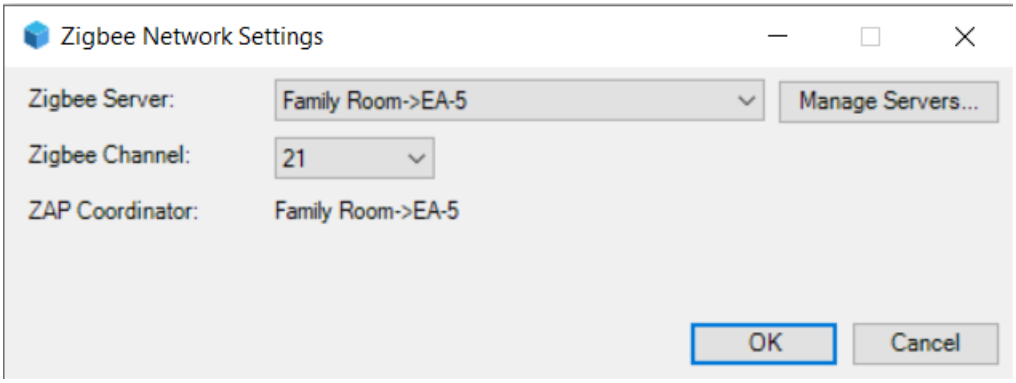
Configuring a Zigbee mesh controller

You can use System Design to check the project properties, enable a Zigbee mesh controller, and view the status of the Zigbee mesh controller running in a Control4 project.

> Note: A Zigbee network requires an HC-800, CORE, EA, or CA-1 controller.

To configure a Z-Wave controller:

1. In the *Project Tree*, select the **Project Name** (top line of the project tree) object for the project properties to appear.
2. Click on the **Zigbee Configuration** tab.
3. Click **Edit Zigbee Configuration**.



4. In the **Zigbee Server** selection menu, choose the controller to run the Zigbee mesh.
5. Select the channel in **Zigbee Channel**.
6. Click **OK** to save the configuration and wait a few minutes for the Zigbee server to come online.

> **Note:**For more information, see the Zigbee Best Practices at ctrl4.co/zigbee-bp.

Configuring high-resolution audio with an EA Controller

Options for configuring high-resolution audio quality in a project running OS 2.9.0 or later can be found on the Properties page of the Digital Media driver. Click on **Digital Media** in the Project Tree.

Advanced Audio—Provides superior audio quality, lowered audio latencies, and support for future features. This field shows if Advanced Audio is enabled in the project.

> **Note:** For Advanced Audio to be enabled, no audio inputs or outputs from HC-200, HC-300, HC-500 Controllers or Speaker Points can be bound in the project

Audio Latency—This parameter adjusts the delay when playing audio. For a project where all networked audio devices are wired and no EA HDMI connections are used, a latency below 1500 ms can be used. For projects where networked audio devices are wireless and include EA HDMI connections, a minimum latency setting of 1500 is recommended. Further adjustments may need to be made depending on the networking environment.

Max Quality—This setting specifies the best audio output in systems that support high-resolution audio beyond CD (44.1 kHz / 16 bit). Large values will consume more network bandwidth, but will ensure high-quality source media fidelity is preserved. The Max Quality feature requires the use of Advanced Audio and EA controllers. Older controllers added to a zone with high-quality audio will receive CD quality audio.

Active Quality—Indicates the current audio quality setting of the project. Active Quality can be different from the Max Quality setting depending on the number of bound audio outputs in a project.

> **Note**: Active Quality is limited to 96 kHz/24 bit when MQA audio is enabled. See "Configuring MQA audio".

Maximum number of bound audio outputs/simultaneous audio streams per project

- 192 kHz / 24-bit audio is limited to two bound audio outputs
- 96 kHz / 24-bit audio is limited to four bound audio outputs
- 48 kHz / 24-bit audio is not limited, but it is recommended to have no more than 12 simultaneous digital media streams at this quality.

Replacing an existing controller using the Controller Migration Wizard

Use the Controller Migration Wizard in Composer Pro to easily replace an existing controller in a project.

> **Note:** You should be connected to the same network as the controller when using the Migration Wizard.

Supported uses:

- Primary Controller — Replace a functioning primary controller with a new (or different) controller; migrate project & controller registration to customer.control4.com web services.
- Secondary Controller—

1. Replace a functioning secondary controller with a new (or different) controller.
2. Replace a non-functioning secondary controller with a new (or RMA replacement) controller.

Limitations:

- Please note that third-party drivers that are authorized, activated, or registered with the MAC address of the primary controller will need to be re-authorized by the installer after the primary controller is changed. The wizard will report the new primary controller's MAC address. You will need to contact the third-party suppliers and request an updated license(s) or activation keys..

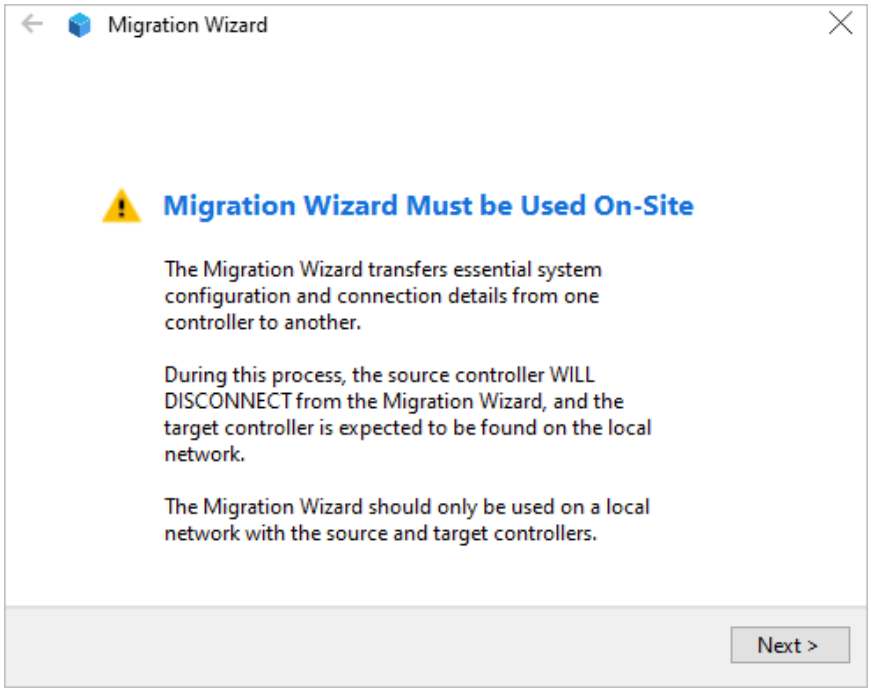
- Some Control4-produced and third-party drivers also use MAC-based pairing or activation solutions to enable communications with the target device or system. Examples of these include: Pandora, AppleTV, and Apple iTunes. These drivers will also need to be reactivated after the migration.
- It is not possible to migrate a non-functional primary controller. If the primary controller needs to be RMA'd, you have to manually load the project onto the new controller.

Before you begin:

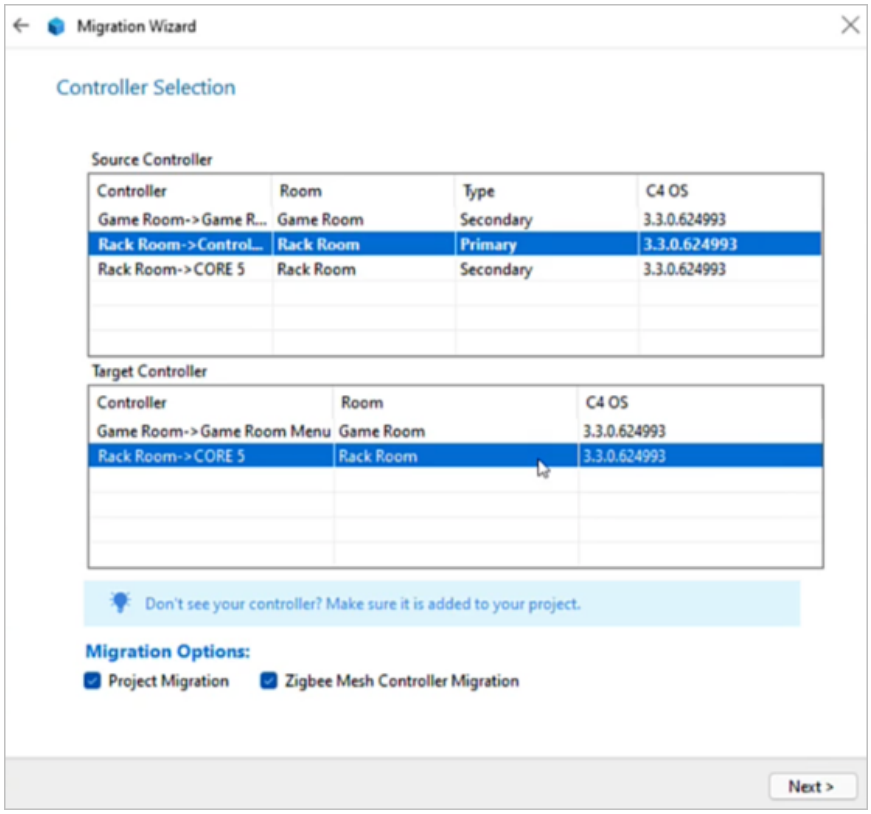
1. Add the replacement controller to the project.
2. Identify the replacement controller.
3. Update the OS on the project and controllers to the same version.

To start the Controller Migration Wizard:

1. Click **Tools > Controller Migration Wizard** to open the *Wizards* windows.



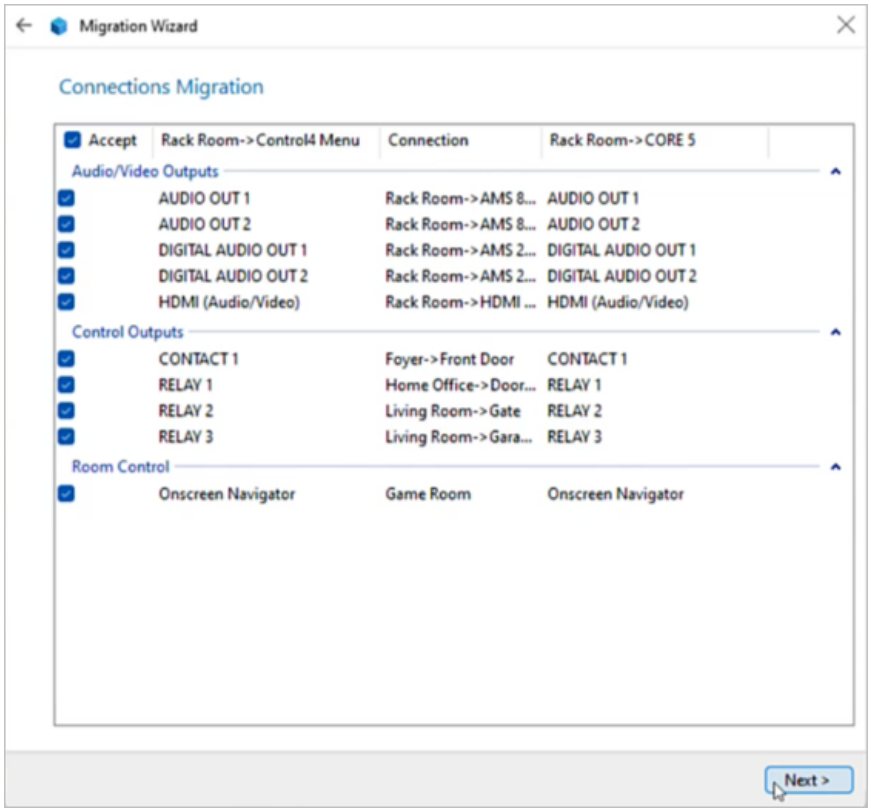
2. Read the pre-requistes, then click the **Start** button.
3. In the *Controller Selection* window, select the **Source Controller** then the **Target Controller** from the list of controllers in the project.



4. Click **Project Migration**, **Zigbee Mesh Controller Migration** to move this function to the Target Controller and click **Next**.

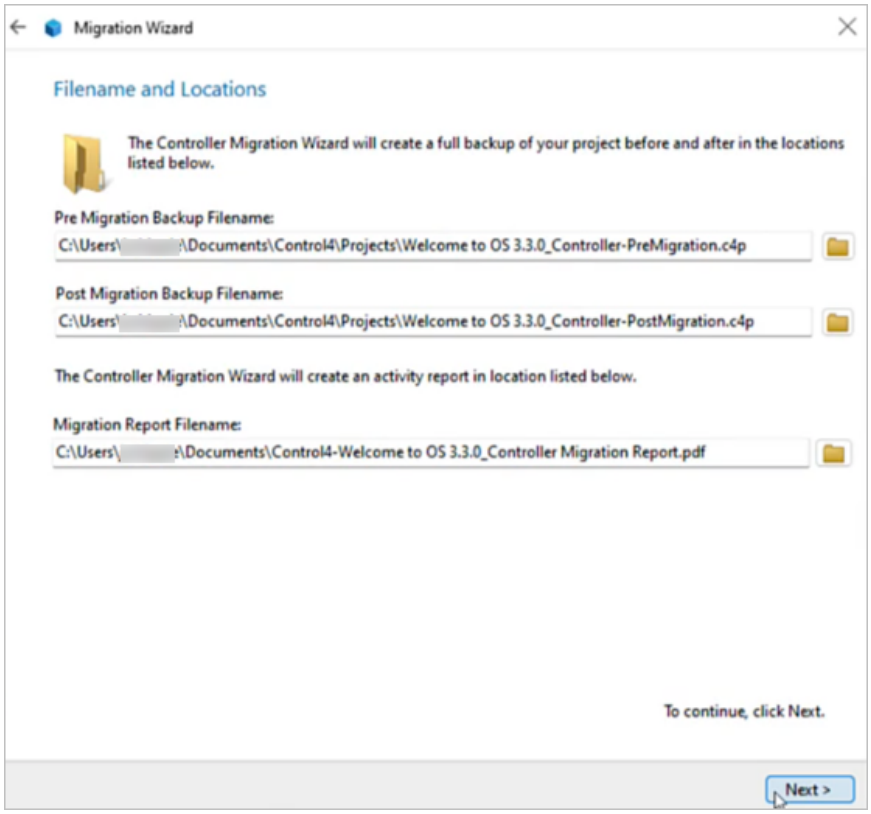
> **Note:** Migration Options auto-populate based on the functions that the Source Controller is running.

5. Verify the connections you wish to transfer to the Target Controller. Click **Accept** to select all the connections, or de-select connections if you're keeping the old controller for inputs and outputs. Click **Next**, when you're finished.

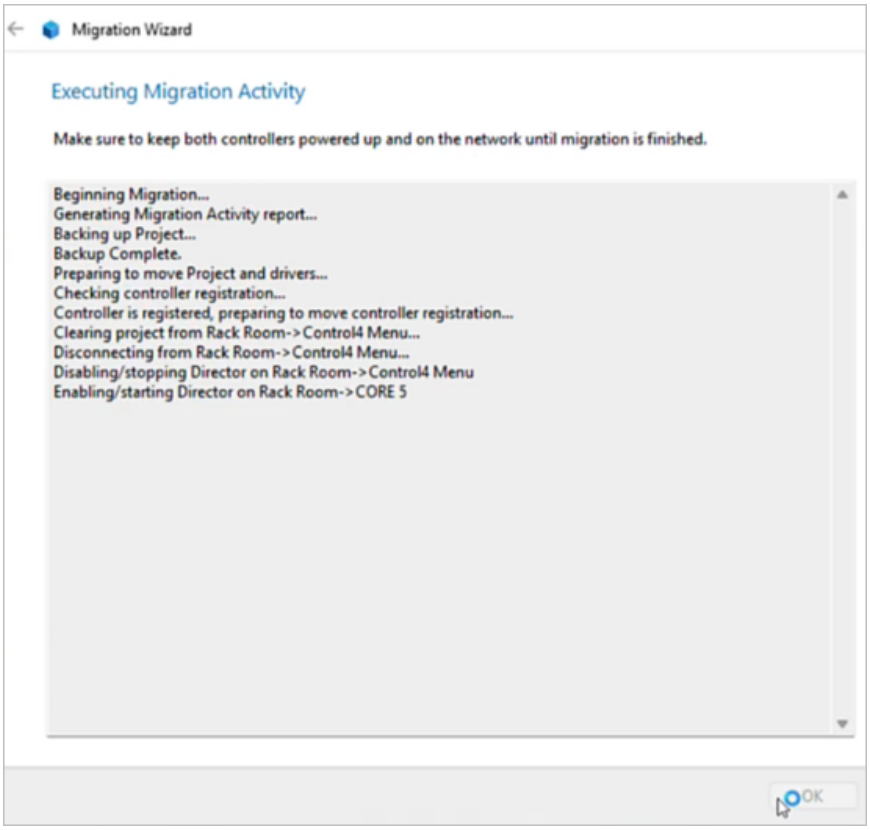


> **Note:** Since controllers can support a different number of connections, all connections are moved in sequential order starting at the first available option. For example, if a single IR connection on an EA-3 is connected to IR Output 3, the connection will be mapped to a CORE-3 IR Output 1.

6. Verify the location to save a pre and post project backup and Migration Wizard Report to your computer. Click the folder icon to change the location. Click **Next**.



7. The Migration Wizards moves the project configuration and connections to the Target Controller. When the migration is finished, it drops the connection to Director.



8. Connect to the new controller and verify the migration was successful.

Ensure that Zigbee Server is running

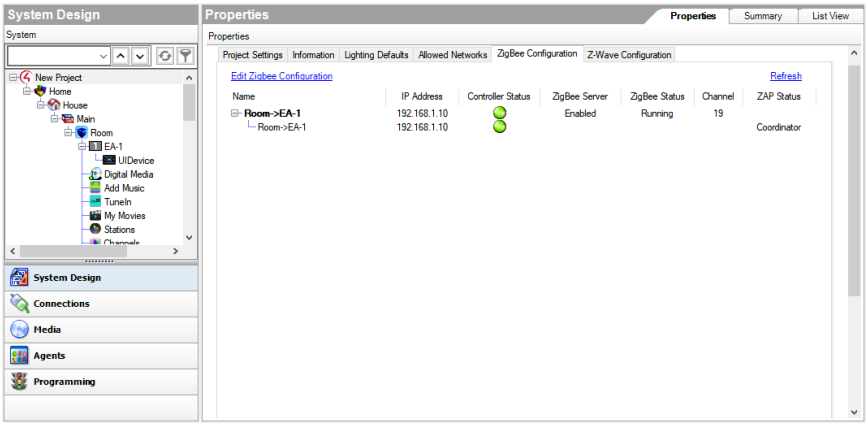
Use the System Design view to check the controller's properties and ensure that Zigbee Server is running on a controller.

To ensure the controller properties are set correctly:

1. In the project tree, select the **project name** object for the *Zigbee Configuration* tab to appear.
2. Ensure that the Zigbee Server is running. If not, see "Example: Verify the network connections" in this document.

Tip**: Be patient.** In cases where the Zigbee mesh is moved, it can take up to five

minutes for all connections to get re-established.



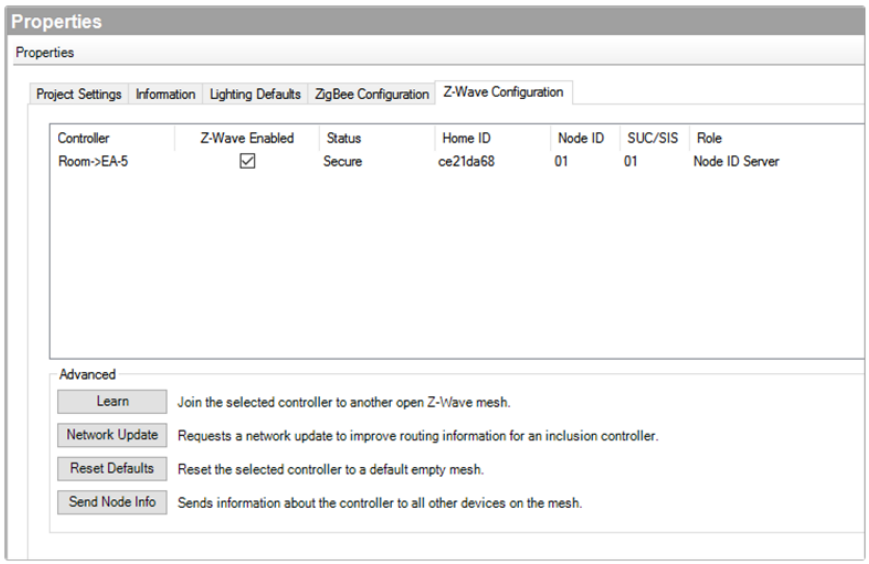
Configuring a Z-Wave controller

You can use System Design to check the project properties, enable a Z-Wave controller, and view the status of the Z-Wave controller running in a Control4 project.

> Note: Z-Wave requires a Z-Wave module connected to an EA or CA controller. See the Z-Wave Module Installation Guide for more help.

To configure a Z-Wave controller:

1. In the *Project Tree*, select the **Project Name** (top line of the project tree) object for the project properties to appear.
2. Click on the **Z-Wave Configuration** tab.



3. Check the box under **Z-Wave Enabled** for the controller you want to be your Z-Wave controller.

> **Note**: Only one Z-Wave controller can be configured in a Control4 project.

The configuration should show a status of “Secure” when it is configured properly. If the *Status* field is empty, make sure the Z-Wave module is connected and installed properly, and that the EA or CA controller is online and identified in the project.

Advanced configuration

Several options are available for advanced Z-Wave configurations in the Z-Wave Configuration tab in the project properties window. These are not required in most cases when operating Z-Wave devices with a Z-Wave module in a Control4 system. They can be used for extending operation with external devices and third-party Z-Wave controllers.

- **Learn**—This option joins the selected controller to another open Z-Wave mesh. This action will change the Home ID of the controller, and any devices on the previous Home ID will no longer be available. If the controller is joined to a mesh that contains a Node ID controller (SUC/SIS), the controller will be an Inclusion controller with the Home ID of the mesh it joined.
- **Network Update**—When acting as an Inclusion controller, Network Update requests network topology updates from the Node ID controller (SUC/SIS).
- **Reset Defaults**—Reset Defaults clears the Home ID on the Z-Wave controller and abandons any nodes on the existing network. Any Z-Wave devices previously joined to the network must be removed before they can join the new network. See "***Removing Z-Wave devices***." Use this procedure only in the event that the network primary controller is missing or otherwise inoperable.

> **Note**: If this controller is the primary controller for your network, resetting it will result in the nodes in your network being orphaned and it will be necessary, after the reset to defaults, to reset and re-add all of the nodes in the network. If this controller is being used as a secondary controller in the network, use this procedure to reset this controller only if the network primary controller is missing or otherwise inoperable.

- **Send Node Info**—When connected to another mesh, Send Node Info sends information about the controller to all other devices on the mesh.

Advanced Z-wave concepts

Replication—Control4 controllers do not implement controller replication. The controller will respond appropriately to replicate requests.

Basic Command Class—Control4 controllers allow controlling unknown devices with the Basic Command Class (see Non-Preferred devices below). Control4 controllers “Do Nothing” when receiving Z-Wave Basic Command Class commands.

Non-Preferred Devices—Control4 controllers allow adding unknown Z-Wave devices through a “Generic Z-Wave” driver. When a device is connected to this driver, it can be controlled through the Basic Command Class using the properties page for the device. Information reported from the device is also be available on this properties page. Non-preferred devices can also be added to a Z-Wave mesh using the *Available Devices* Add button. This allows devices to be added and then associated using manufacturer specific methods for doing so. See manufacturer specific documentation on how to create associations on specific devices.

Association Command Class—Control4 controllers implement associations on the Lifeline association group (group 1). This association is used to provide device reset information to an associated device. A single associated device is supported.

Repeater Functionality—This product can be operated in any Z-Wave network with other Z-Wave certified devices from other manufacturers. All non-battery operated nodes within the network will act as repeaters regardless of vendor to increase reliability of the network.

Troubleshooting Z-Wave

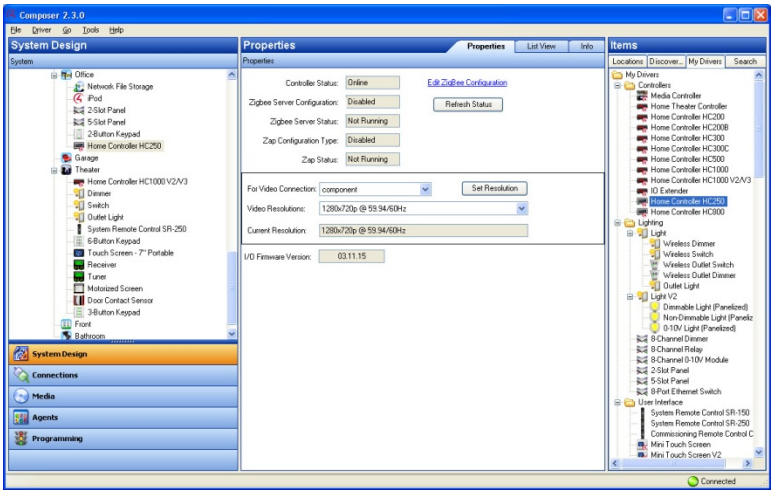
When joined to a network, a Z-Wave device will not join a different network. Z-Wave devices can be removed from any network at any time by using the Remove button found in *Available Devices*. This is true even if they are not part of the network performing the remove operation. If there appears to be trouble joining a device to a network, it is a good idea to either perform a reset defaults on the device, or explicitly perform a removal procedure, prior to attempting to add the device to the existing network. This ensures the device is not currently configured for another network prior to adding the device to the desired network.

Ensure that Video Mode is set correctly

Use the System Design view to check the controller's properties and ensure that video mode is set correctly on a controller. Video Mode lets you set the video format that the controller outputs when configured to display video.

To ensure the controller properties are set correctly:

1. In the project tree, select the Controller object for the properties to appear.
2. Ensure that the video format is set correctly. NTSC mode is used in the U.S. and PAL mode is generally used in Europe.



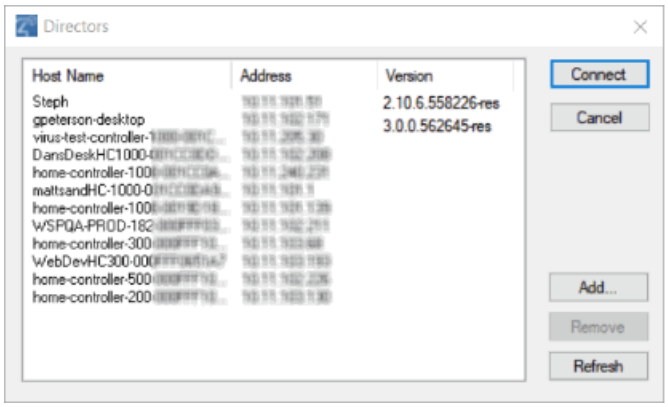
Configure multiple controllers

Use the System Design view and Connections > Network tab to configure multiple controllers. If you have more than one controller in your Control4 system, you must designate one of them as the primary controller (Director). The others will be secondary controllers.

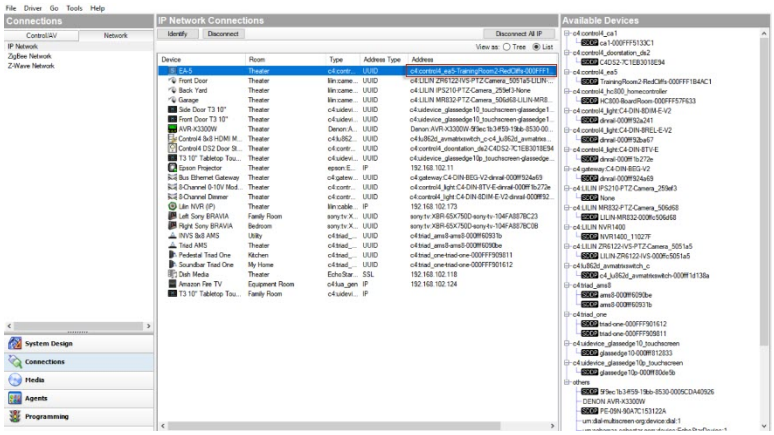
To add and configure multiple controllers:

1. Start Composer Pro and connect to a Director **on Local Network**.
2. From the Directors dialog that appears, select the Director's **network address** of the primary controller hardware you are setting up, and click **Connect**.

When you have multiple controllers in the system, connecting to a controller defines where the project configuration will be saved (Director). When you identify the controllers to the project, any other controllers will be configured as a slave or secondary controller and Director will be turned off automatically. The next time you launch Composer Pro, only the network address of the Director of the primary controller appears on this screen. If the correct address is not listed, click **Add** to add the address manually.



3. In the project tree, select the room where the controller resides, and add it to the system. Do the same for all the controllers you plan to add to the system. See "How to add devices to a project" for details.
4. Click the **Connections** view.
5. In the Connections view, select the **Network** tab.
6. Select the first controller listed, and click **Identify**.
7. On the dialog that appears, follow the on-screen instructions, and click **Next** to continue to identify the other controllers you have added to the system.
8. When you finish identifying all of the controllers and any other devices in your project, click **Close** to return to the Network tab in the Connections view.
9. In the IP Network Connections pane under Address make sure that all the devices in your project have an address on the list.



Configure an IO Extender

The IO Extender opens up a whole world of options in the Control4 system to control home theaters, distributed audio systems, video devices, motion sensors,

and other devices that use infrared (IR), serial, contact, and relay connections. This device is a great companion to the EA controllers to expand output capability.

Ensure that the IO Extender is installed and set up as directed in the *IO Extender Installation Guide* available on the Dealer Portal.

To add and configure an IO Extender:

1. Follow the steps in " How to add devices to a project" to add and identify the device. Ensure that the **IO Extender** driver is added to the project tree.
2. Add device drivers, for devices to be controlled by IR or serial, or Motorization drivers, for devices connected by relay or contact sensor (see "Configuring Motorization" in this document) and make the appropriate connections between those drivers and the IO extender on the Connections > Control/AV window (see " Connect and verify devices" in this document).

Configuring lighting

Use the System Design and Connections views to configure dimmers, switches and keypads.

> Tip: Double- and triple-tap events apply to the Control4 dimmers, switches, and keypads. When you tap a button consecutively two or three times for about one-half of one second the events fire.You can use these events for programming without requiring the more complex programming logic tied to timers and button 'Press/Release' events.

> Note: When programming using double and triple-tap events, be aware that Press and Release events also occur when double and triple-tap events occur. Plan your programming using these events so that they don't conflict with the intended outcome. In most cases, when using double and triple-tap programming events, don't program on the Press and Release events.

> Tip: These sections are organized by how devices are listed in the My Drivers tab.

Wireless Lighting

Device settings for Configurable Keypads

Properties

- Button Settings
- **Name**—The name of the button (used for defining its connections to other devices or events within Composer HE).
- **Engraving**—Text that you want printed onto the buttons. For more information, see “Ignore device when it comes online—When selected, this checkbox tells the system to ignore the older device when it comes back online.
- ” below.
- **Icons**—Icons that you want printed onto the buttons. To add an icon to the Engraving text box, click **Icons**, then double-click the icon to add.
- LED Behavior
- **Follow Bound Device**—LED behavior reflects the state of the device the button is bound to.
- **Push/Release**—LED behavior reflects the button state (pressed or released).
- **Push Color**—Sets the LED color while the button is pressed.
- **Release Color**— Sets the LED color while the button is released.

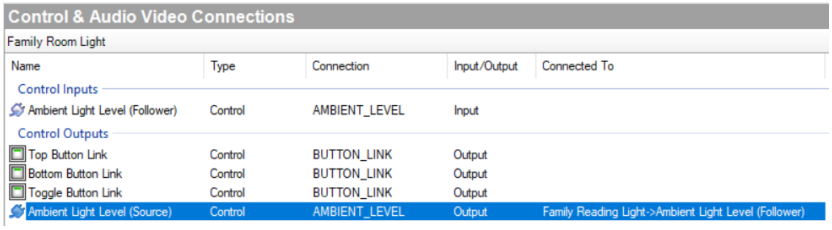
- **Finish**—Color of the buttons.

Advanced Properties

- Ambient Light Profiles
- Select a preset brightness profile for the keypad backlight and LEDs that changes their brightness according to the room's ambient light. You can also select Fully Customized and manually set each brightness level according to ambient lighting.
- **Backlight Color—**Sets the keypad's backlight color. If you don't want a keypad backlight, keep the default setting (black).
- **Sensing—**The ambient sensing mode and follow source are displayed in the **Sensing** window.
- **Mode—**The ambient light sensing modes are: **Independent** (using the light's own sensor), **Source** (another light is using this light's sensor) or **Follower** (using the sensor from another light). If Mode is Follower, the source device is listed.

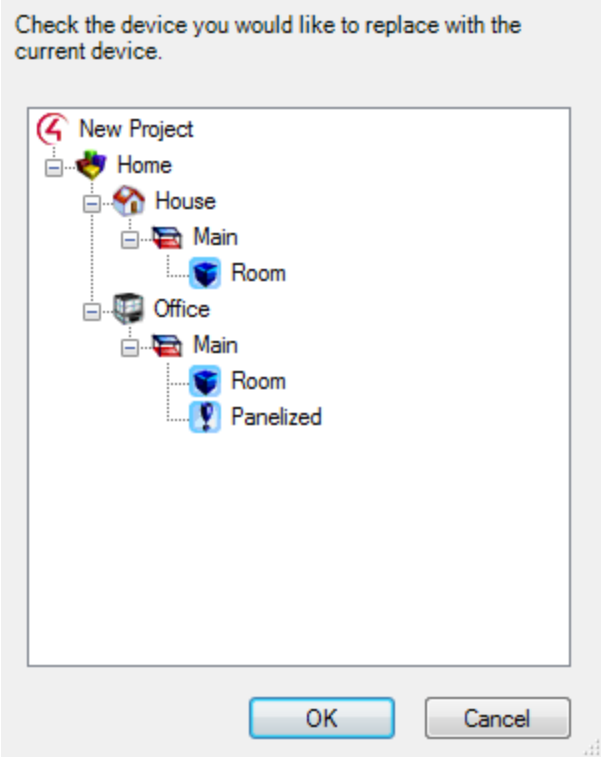


- In **Connections**, select the lighting devices to be the Source device. Connect the **Ambient Light Level (Source)** connection in *Control Outputs* to each Follower light or keypad.



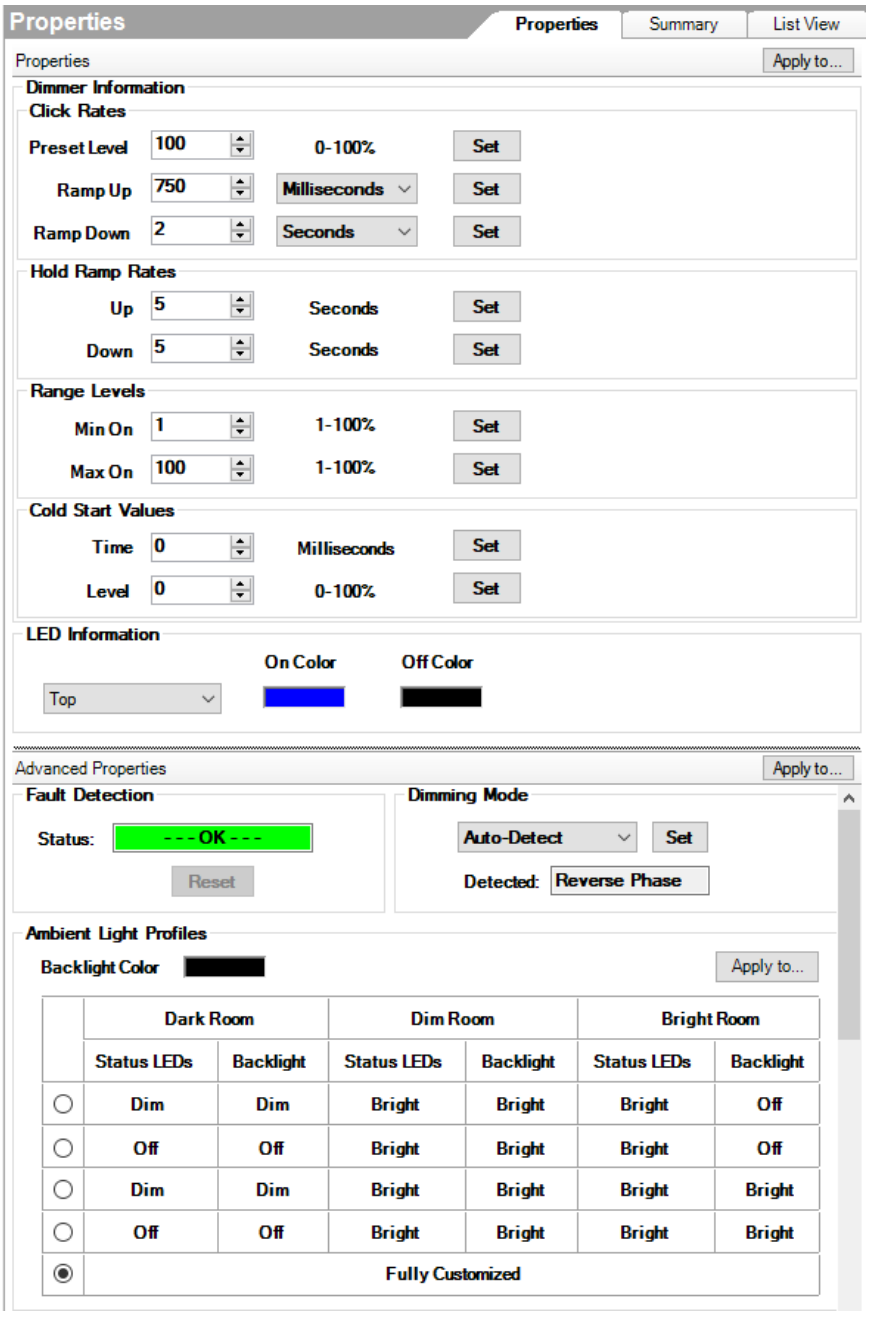
- **Network**—(wireless keypads only) Displays the MAC address and firmware version of the selected device. These fields are not editable.
- Replace Legacy Control4 Device
- **Replace Keypad**—Replaces a legacy device in your project with this new device. After you configure this new device, click this button, select the older

device in the mini project tree that opens, then click **OK**.



- **Ignore device when it comes online**—When selected, this checkbox tells the system to ignore the older device when it comes back online.

Device settings for dimmers



Properties (applies to: Keypad Dimmer, Forward Phase Dimmer, Adaptive Phase Dimmer, 0-10V Dimmer)

- Click rates
- **Preset Level**—The percentage of light output is used for On.
- **Ramp Up**—The time it takes to reach the preset On level.
- **Ramp Down**—The time it takes to reach 0% (Off).

- Hold Ramp Rates
- **Up**—The rate in seconds for reaching the Max On level from an Off state when the top button is held down.
- **Down**—The rate in seconds for reaching the Off state from an On state when the bottom button is held down.
- Range Levels
- **Min On**—The percentage of light for the minimum “On” power level. The default is 0. The functional minimum level can vary, depending on the light type (such as incandescent, fluorescent, compact fluorescent, and LED).

  This is especially important in compact fluorescent (CLF) and LED lighting that sometimes have a minimum threshold for producing visible light that could be anywhere from the 10-40% range. Some loads will flicker or pulse right at their minimum threshold.

  Example: A bulb doesn’t produce visible light until it reaches 20%. The minimum On to 25% will ensure a clean On transition.

- **Max On**—This setting enables capping the light level for a given load below 100%, either to enhance bulb life or match the light level in a given living space better. This is an absolute maximum level rather than the Preset On level, which can be bypassed.
- **Cold Start Values—**These settings are mainly applicable to compact fluorescent (CFL) loads. Switching from an Off state to On sometimes exhibits a higher visible light threshold than after the CFLs have been on and have warmed up. If a Cold Start % is set (above the Minimum On %), the dimmer cleanly jumps to that level from Off to On. However, when the dimmer has been on for the time period designated by the Cold Start timer, the dimmer can ramp below the Cold Start On % to the minimum On%.

  Example: Fluorescent lights go on, warm up, and then will dim down to the Minimum On Level % setting. Tapping the keypad on a 2-button dimmer sets the light to its preset level. If you press and hold the button, the light checks the Minimum On Level % setting.

- **Time**— The time a light takes to warm up before it dims (ramps) down to the Cold Start Level setting.
- **Level**— The light level that the bulb returns to after bulb warmup. This value must be higher than the Min On level defined under Range Levels.
- LED Information
- **Top**—The On and Off LED colors for the top LED.
- **Bottom**—The On and Off LED colors for the bottom LED.

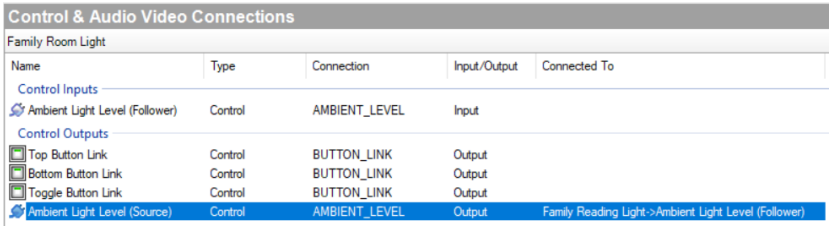
- **Toggle**—The LED colors of the LEDs while being held down(?).

Advanced Properties

- Fault Detection
- **Status**—Displays the device's current fault status. Green is normal, but red indicates a fault.
- **Reset**—Resets the fault status indicator. If the fault repeats, make sure that the load type is compatible, that the device is wired correctly, and that the device is not damaged.
- **Dimming Mode** (Adaptive Phase Dimmer only)
- **Ambient Light Profiles**
- Select a preset brightness profile for the keypad backlight and LEDs that changes their brightness according to the room's ambient light. You can also select Fully Customized and manually set each brightness level according to ambient lighting.
- **Backlight Color—**Sets the keypad's backlight color. If you don't want a keypad backlight, keep the default setting (black).
- **Sensing—**The ambient sensing mode and follow source are displayed in the **Sensing** window.
- **Mode—**The ambient light sensing modes are: **Independent** (using the light's own sensor), **Source** (another light is using this light's sensor) or **Follower** (using the sensor from another light). If Mode is Follower, the source device is listed.



- In **Connections**, select the lighting devices to be the Source device. Connect the **Ambient Light Level (Source)** connection in *Control Outputs* to each Follower light or keypad.



Button Settings

- **Engraving**—Text that you want printed onto the buttons. See “” in this document. Note: When the custom engraved keycaps are installed, make sure that the device properties in Composer HE match the device’s actual configuration..
- **Finish**—Color of the buttons.
- **Icons**—Icons that you want printed onto the buttons. To add an icon to the Engraving text box, click **Icons**, then double-click the icon to add.
- **Buttons Control Load**—When selected, this checkbox tells the system that the device directly controls an electrical load, such as a light fixture.
- **LEDs Follow Load**—When selected, this checkbox tells the dimmer’s LEDs to indicate the electrical load status.
- **Use as 2 Button Keypad**—When selected, this checkbox allows you to configure and program the device as a 2-button keypad, and a new section “2 Button Keypad Settings” appears.
- **Hide From Nav**—When selected, this hides the keypad from any Navigator. Navigators must be refreshed for this setting to take effect.

2 Button Keypad Settings (visible only when “Use as 2 Button Keypad” option is selected)

- **Button**—Select the button to configure.
- LED Behavior
- **Follow Bound Device**—LED behavior reflects the state of the device the button is bound to.
- **Follow Load**—LED behavior reflects the state of the lighting load (on or off).
- **On Color**—Sets the LED color when the controlled load is on.
- **Off Color**— Sets the LED color when the controlled load is off.
- **Push/Release**—LED behavior reflects the button state (pressed or released).
- **Push Color**—Sets the LED color while the button is pressed.
- **Release Color**— Sets the LED color while the button is released.

Energy Information (view only)

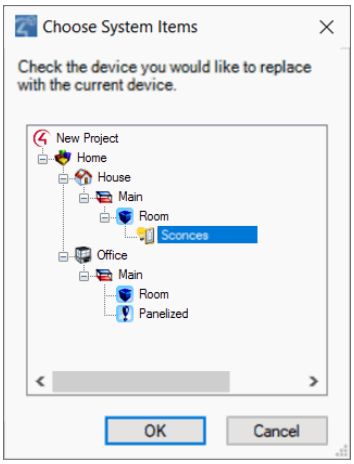
- **Minutes Off**—Elapsed minutes since device was turned off.
- **Minutes On**—Elapsed minutes since device was turned on.
- **Minutes On Today**—Total minutes device has been on for the current day.
- **Current Power**—Power being consumed by the device at the present time.
- **Energy Used**—Total watt hours consumed by the device over its lifetime.

- **Energy Used Today**—Watt hours consumed by the device for the current day.

Network–The current MAC address and firmware version of the selected device. These fields are not editable.

Replace Legacy Control4 Device

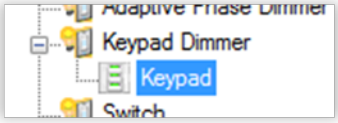
- **Replace Light**—Replaces a legacy device in your project with this new device. After you configure this new device, click this button, select the older device in the mini project tree that opens, then click **OK**.



- **Ignore device when it comes online**—When selected, this checkbox tells the system to ignore the older device when it comes back online.

Configuring the Keypad Dimmer's buttons

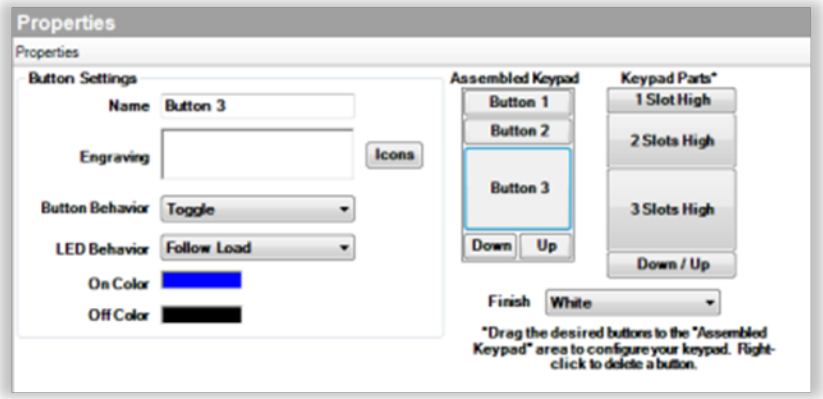
When you add a new lighting Keypad Dimmer, a "Keypad" proxy is added underneath the Keypad Dimmer in the project tree.



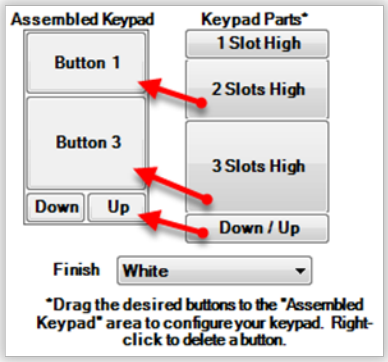
To configure the Keypad Dimmer's buttons:

1. Add the keypad to your project tree, then identify it. For instructions, see "How to add devices to a project."

2. In the System Design view, select the device. The device's Properties tab opens.

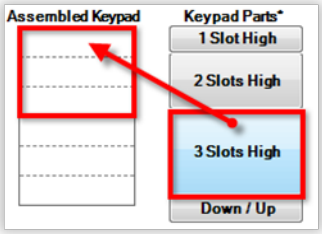


3. In the Button Settings area, click and drag the appropriate **Keypad Parts** items to the Assembled Keypad example until the example matches the desired keypad configuration.



Tips:

- The Down/Up buttons can be placed only in the bottom slot and cannot have custom engraving.
- Drag the desired button to the top slot of the range where you want the button positioned.

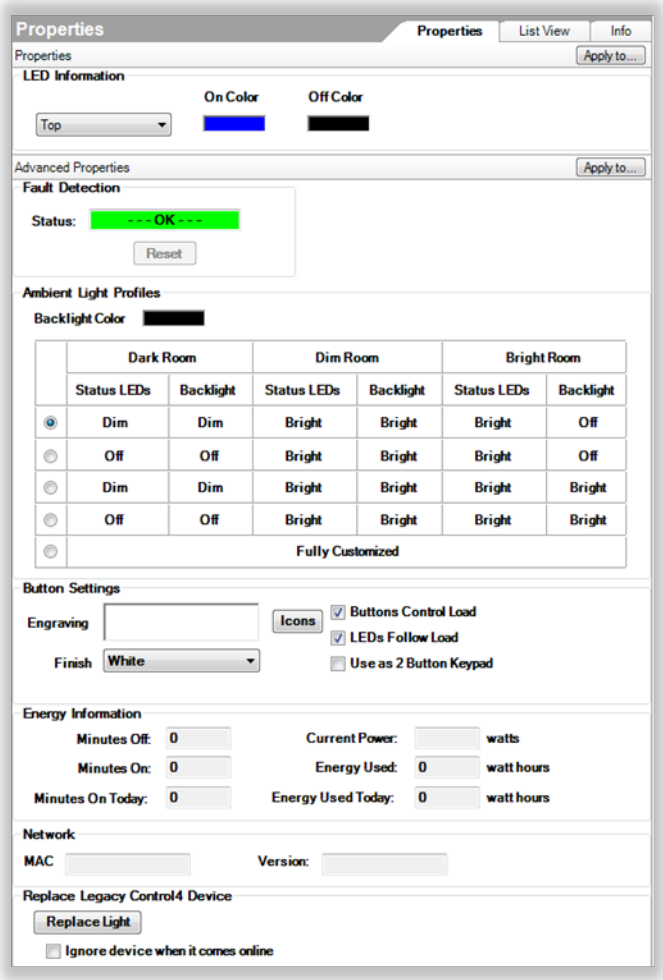


4. Configure the settings described below.

5. Click **Apply to...** to apply the changes to other lighting devices.

- If you entered text for custom engraving, go to "Ignore device when it comes online—When selected, this checkbox tells the system to ignore the older device when it comes back online."—When selected, this checkbox tells the system to ignore the older device when it comes back online.

Device settings for switches



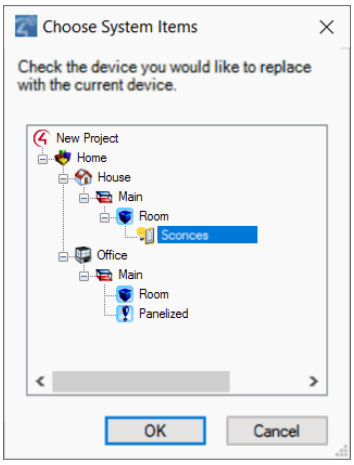
Properties (applies to new lighting Switch C4-SW120277)

- LED Information
- **Top**—The On and Off LED colors for the top LED.
- **Bottom**—The On and Off LED colors for the bottom LED.
- **Toggle**—The LED colors of the LEDs while being held down.

Advanced Properties

- Fault Detection
- **Status**—Displays the device's current fault status. Green is normal, but red indicates a fault.
- **Reset**—Resets the fault status indicator. If the fault repeats, make sure that the load type is compatible, that the device is wired correctly, and that the device is not damaged.
- Ambient Light Profiles
- Select a preset brightness profile for the switch backlight and LEDs that changes their brightness according to the room's ambient light. You can also select Fully Customized and manually set each brightness level according to ambient lighting.
- **Backlight Color—**Sets the switch's backlight color. If you don't want a switch backlight, keep the default setting (black).
- Button Settings
- **Engraving**—Text that you want printed onto the switch. See "Ordering keycap engraving" in this document. Note: When the custom engraved keycaps are installed, make sure that the device properties in Composer Pro match the device's actual configuration.
- **Finish**—Color of the switch.
- **Icons**—Icons that you want printed onto the buttons. To add an icon to the Engraving text box, click **Icons**, then double-click the icon to add.
- **Buttons Control Load**—When selected, this checkbox tells the system that the device directly controls an electrical load, such as a light fixture.
- **LEDs Follow Load**—When selected, this checkbox tells the dimmer's LEDs to indicate the electrical load status.
- **Use as 2 Button Keypad**—When selected, this checkbox allows you to configure and program the device as a 2-button keypad, and a new section "2 Button Keypad Settings" appears.
- **Hide From Nav**—When selected, this hides the switch from any Navigator. Navigators must be refreshed for this setting to take effect.
- **2 Button Keypad Settings** (visible only when "Use as 2 Button Keypad" option is selected)
- **Button**—Select the button to configure.
- LED Behavior
- **Follow Bound Device**—LED behavior reflects the state of the device the button is bound to.

- **Follow Load**—LED behavior reflects the state of the lighting load (on or off).
- **On Color**—Sets the LED color when the controlled load is on.
- **Off Color**— Sets the LED color when the controlled load is off.
- **Push/Release**—LED behavior reflects the button state (pressed or released).
- **Push Color**—Sets the LED color while the button is pressed.
- **Release Color**— Sets the LED color while the button is released.
- **Energy Information** (view only)
- **Minutes Off**—Elapsed minutes since device was turned off.
- **Minutes On**—Elapsed minutes since device was turned on.
- **Minutes On Today**—Total minutes device has been on for the current day.
- **Current Power**—Power being consumed by the device at the present time.
- **Energy Used**—Total watt hours consumed by the device over its lifetime.
- **Energy Used Today**—Watt hours consumed by the device for the current day.
- **Network**—The current MAC address and firmware version of the selected device. These fields are not editable.
- Replace Legacy Control4 Device
- **Replace Light**—Replaces a legacy device in your project with this new device. After you configure this new device, click this button, select the older device in the mini project tree that opens, then click **OK**.



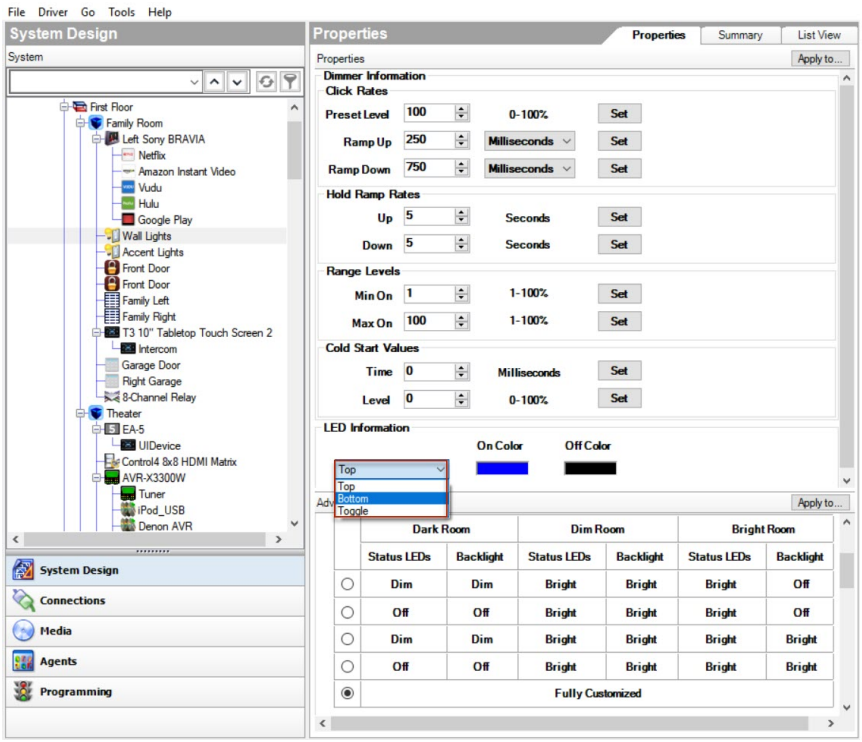
- **Ignore device when it comes online**—When selected, this checkbox tells the system to ignore the older device when it comes back online.

Changing LED colors on a switch or dimmer

After you verify that your connections are correct in Composer Pro, you can set the properties and configure the system to meet the home control needs.

To change the LED colors on a *switch* or dimmer:

1. In the project tree, select the **Switch** or **Dimmer** object for the properties to appear.



2. For each LED light, click the color box to set a different color for the On and Off states. To control the Bottom LED color, use the drop-down menu.

   - **Top Color On**—The LED color for the Top LED when the LED state is On.
   - **Top Color Off**—The LED color for the Top LED when the LED state is Off.
   - **Bottom Color On**—The LED color for the Bottom LED when the LED state is On.
   - **Bottom Color Off**—The LED color for the Bottom LED when the LED state is Off.

   Tip: You can change the LED lights based on programming. See the Programming view > Switch or Dimmer objects for the events available. Also, see the actions available for both switch and dimmer.

Outlet Lighting

Outlet lighting lets you add home automation to light fixtures that plug into power outlets.

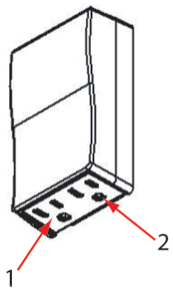
Configure a Wireless Outlet Switch V2

Use the Composer Pro System Design and Connections views to configure a Wireless Outlet Switch.

Configure and use the Wireless Outlet Switch and its plugged-in device to:

- Control a plugged-in audio/video component (such as a DVD player or VCR) or other electrical equipment controlled by IR.
- Control power to a plugged-in relay device (such as a pump) or other household appliances.
- Switch a plugged-in lamp to On or Off.

Each Wireless Outlet Switch has two outlets: Outlet 1 and Outlet 2. When the Wireless Outlet Switch is plugged into an outlet oriented as shown below, Outlet 1 is on the left and Outlet 2 is on the right.



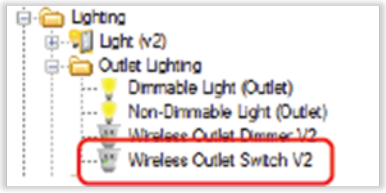
Prerequisites

- Ensure that the Wireless Outlet Switch is installed as directed in the Control4 Wireless Outlet Switch Installation Guide available on the Dealer Portal.
- Ensure that your project has a controller added and identified in the Control4 system.

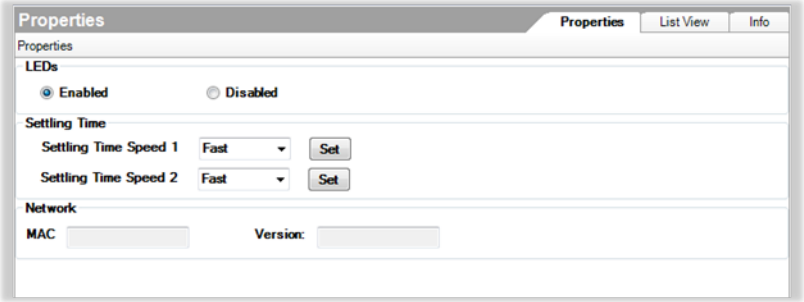
To add and configure a Wireless Outlet Switch:

IMPORTANT TIP: When configuring the Wireless Outlet Switch, add two drivers: one for the Wireless Outlet Switch and one for the plugged-in device. In addition, define the connection between these two devices In the Connections view > Control/AV tab.

1. To add the driver and identify the device see "How to add devices to a project." Ensure that the **Wireless Outlet Switch V2** driver is added to the project tree.



2. Select the Wireless Outlet Switch that has been added to your project, then configure these settings in the Properties tab:



LEDs–Allows you to enable/disable the outlet indicators on top of the Wireless Outlet Switch.

Settling Time–Sets the interval following on and off commands before the system performs a status check on the device.

Network–These are read-only fields for the switch's network settings.

3. Add a driver for the device you want to plug into the Wireless Outlet Switch as appropriate for your use (power sensing, power controlling, or switching lamps on and off).

Power Sensing (Contact)–Using the Wireless Outlet Switch, the system can sense the power state of the plugged-in device, and the controller can send the appropriate control commands based on the power state.

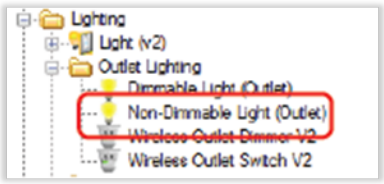
For a plugged-in device:

1. Add the appropriate driver.
2. (For an AV device only, such as a DVD Player) Edit the driver to change the power management option in the driver for the correct connection to appear in the Connections view. To do this, see the "Change Power Management Options." For other devices, it is not necessary to edit the driver.
3. Before you can use power sensing for the plugged-in device, perform Power Learning on the Wireless Outlet Switch for the plugged-in device on the appropriate outlet. For information about Power Learning when using the Wireless Outlet Switch power sensing, see "Perform Power Learning" later in this section.

Power Control (Relay)–For a plugged-in device, add the appropriate driver.

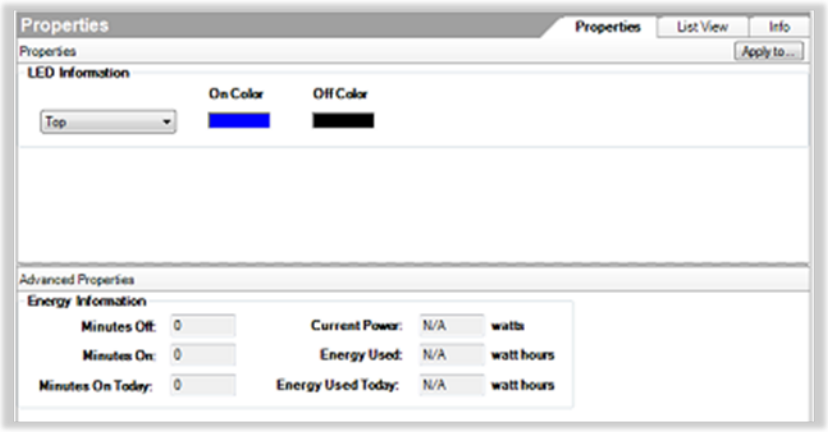
Example**:** Add a relay device by selecting a **Pump** to the project. Go to the **System Design** view in the Items pane, select the **My Drivers** tab > **Motorization**, and double-click the **Pump** object.

Lighting–For a lamp, add a **Non-Dimmable Light (Outlet)** to the project. Go to the **System Design** view in the Items pane. Select the **My Drivers** tab > **Lighting** > **Outlet Lighting**, and double-click the **Non-Dimmable Light (Outlet)** object.



Note: This is the Non-Dimmable Light (Outlet) object, and not the regular Wireless Outlet Switch V2 object.

Configure the following fields:



LED Information–Sets the colors of the keypad buttons that are bound to the light. Select **Top**, **Bottom**, or **Toggle** LED colors, based on the type of keypad button binding used.

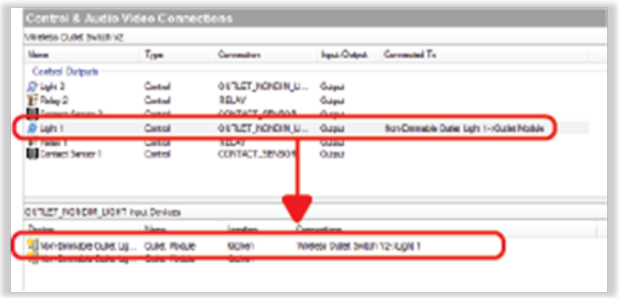
Energy Information

- **Minutes Off**—Minutes light has been off since going online.
- **Minutes On**—Minutes light has been on since going online.
- **Minutes On Today**—Minutes light has been on since midnight.
- **Current Power**—N/A.
- **Energy Used**—N/A.
- **Energy Used Today**—N/A.

4. Define the connection between the Wireless Outlet Switch and the plugged-in device.

1. Click the **Control/AV** tab.
2. Make a connection between the W**ireless Outlet Switch V2** and the device that is plugged into the Wireless Outlet Switch. Make this connection for any of these three possible uses: power sensing (contact), power control (relay), and switching a lamp On or Off.
3. In the Connections view, select the device that is plugged into the Wireless Outlet Switch.
4. From the top screen, drag the appropriate connection to the Wireless Outlet Switch connection on the bottom screen.

Example: Connection between the Wireless Outlet Switch and the light outlet.



Perform power learning

To enable use of the power-sensing features, configure your Wireless Outlet Switch to read the power state of the devices that you plug into it.

To perform power learning:

1. Follow the steps in the previous section.
2. Turn Off the device plugged into the Wireless Outlet Switch.
3. Push and hold the button on the Top panel of the Wireless Outlet Switch until the two LEDs toggle orange On/Off, alternating back and forth.
4. Select an outlet to configure (Outlet 1 or 2) by releasing the button when the LED that corresponds to that outlet number lights up.

Example**:** If a device is plugged into Outlet 1, release the button when LED 1 lights up. Upon doing so, the LED you chose flashes orange, indicating that the Wireless Outlet Switch is learning a steady state of the device (such as On or Off). When the LED turns solid orange, the Wireless Outlet Switch has learned the steady state, but has not yet determined whether the state is On or Off.

5. With the LED now solid orange, turn the device plugged into the Wireless Outlet Switch to an **On** state. The LED again flashes orange while the Wireless Outlet Switch is learning the On state of the device. When learning completes, the LED glows solid orange again to indicate the Wireless Outlet Switch has learned the steady state.
6. With the LED now solid orange again, turn the device **Off**. The LED flashes orange to indicate the Wireless Outlet Switch is waiting for a steady state. When the device reaches a steady state, the LED glows red to indicate the Wireless Outlet Switch has learned the Off state.
7. With the LED now solid red, turn the device **On** again. The LED flashes orange to indicate it is waiting for a steady state. When the device reaches a steady state, the LED glows green to indicate the Wireless Outlet Switch has learned the On state.
8. With the LED now solid green, press the **button** on the Wireless Outlet Switch one time to save and exit the Power Learning mode.

IMPORTANT TIP: You can use a quick button press during any step of this process prior to the LEDs turning solid red or green to exit the Learning mode without saving.

9. Repeat the steps to configure the other outlet (Outlet 1or 2) as needed for any additional plugged-in device.

Note: To unlearn a device, press the button nine times, but use with care; this will reset both outlets.

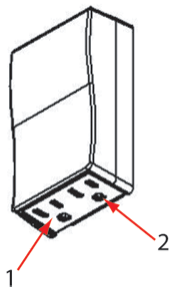
Configure a Wireless Outlet Switch for power-sensing AV devices

Use the Wireless Outlet switch and its plugged-in device to:

- **Control** a plugged-in audio/video component (such as a DVD player or VCR) or other electrical equipment controlled by IR.
- **Control** power to a plugged-in relay device (such as a pump) or other household appliances.
- **Switch** a plugged-in lamp On or Off.

The instructions below describe how to configure an Outlet Switch in Composer Pro for a Samsung television. For instructions about how to configure the other actions, see "Configure a Wireless Outlet Switch V2."

Each Wireless Outlet Switch has two outlets: Outlet 1 and Outlet 2. When the Wireless Outlet Switch is plugged in to the wall, Outlet 1 is on the left and Outlet 2 is on the right.



> IMPORTANT! When configuring the Wireless Outlet Switch, you need to add two drivers:

- One for the Wireless Outlet Switch
- One for the plugged-in device

In addition, define the connection between these two devices in the **Connections** view > **Control/**AV tab.

Prerequisites

1. Ensure that your project has a Control4 controller added and identified on the Control4 system.
2. Ensure that the Wireless Outlet Switch object is added to the project tree, and is identified on the Control4 system.
3. Ensure that the AV device, for example, the Samsung Television object, is added and configured for the device.

To configure a Wireless Outlet Switch to use an AV device:

Select the Power Codes

1. In the project tree, right-click, for example, **Samsung Television** and select **Edit Driver**. The Driver Wizard opens.
2. In the Driver Wizard, check **Has power feedback**.
3. Change the Power Management option to Contact **sensor**; ensure that the **Send toggle code** is selected.
4. Click **Codes**.

1. In Codes under Default Commands, make sure **Power On** and **Power Off**, or **Power Toggle** items are *not* checked. If they are, any programming you do in conjunction with power using the Wireless Outlet Switch and the television is invalid.
2. Click **Finish**.
3. Click **next** to close the window.

IMPORTANT! Don't click back to check if the selection was saved because it refreshes the screen; in that case, you will need to redefine what you just defined.



Define the connection

5. Define the connection between the Wireless Outlet Switch and the plugged-in device (Samsung Television).
6. To do this, in the **Connection** > **Control & Audio Video Connections** pane select the Samsung Television that is plugged into the Wireless Outlet Switch.
7. From the top screen drag the **Contact Sensor** connection to the correct sensor on the Wireless Outlet Switch in the bottom screen.
8. Before you can use power sensing for the plugged-in device, perform **Power Learning** on the Wireless Outlet Switch for that plugged-in device on the appropriate outlet.

1. Turn off the device plugged into the Wireless Outlet Switch.
2. Push and hold the **button** on the top panel of the Wireless Outlet Switch until the two LEDs toggle orange On/Off, alternating back and forth.

3. Select an outlet to configure (Outlet 1 or 2) by releasing the **button** when the LED that corresponds to that outlet number lights up.

   Example: If a device is plugged into Outlet 1, release the button when LED 1 lights up. The LED you chose flashes orange, indicating that the Wireless Outlet Switch is learning a steady state of the device (such as On or Off). When the LED turns solid orange, the Wireless Outlet Switch has learned the steady state, but has not yet determined whether the state is On or Off.

4. With the LED now solid orange, turn the device plugged into the Wireless Outlet Switch **On**. The LED again flashes orange while the Wireless Outlet Switch is learning the On state. When the learning completes, the LED glows solid orange again to indicate the Wireless Outlet Switch has learned the steady state.
5. With the LED now solid orange again, turn the device **Off**. The LED flashes orange to indicate the Wireless Outlet Switch is waiting for a steady state. When the device reaches a steady state, the LED glows red to indicate that the Wireless Outlet Switch has learned the Off state.
6. With the LED now solid red, turn the device **On** again. The LED flashes orange to indicate it is waiting for a steady state. When the device reaches a steady state, the LED glows green to indicate the Wireless Outlet Switch has learned the On state.
7. With the LED now solid green, **press** the button on the Wireless Outlet Switch **one time** to save and exit the Power Learning mode.

   Tip**:** Use a quick-button press during any step prior to the LEDs turning solid red or green to exit the Power Learning mode without saving.

9. Repeat the steps to configure the other outlet (Outlet 1or 2) as needed for any additional plugged-in device.
10. To unlearn a device, press the **button** nine times, but use with care; as this will reset both outlets.

Configure a Wireless Outlet Dimmer V2

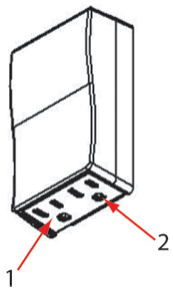
Use the System Design and Connections views to configure a Wireless Outlet Dimmer V2. Configure the Wireless Outlet Dimmer to control and dim lamps.

Prerequisites

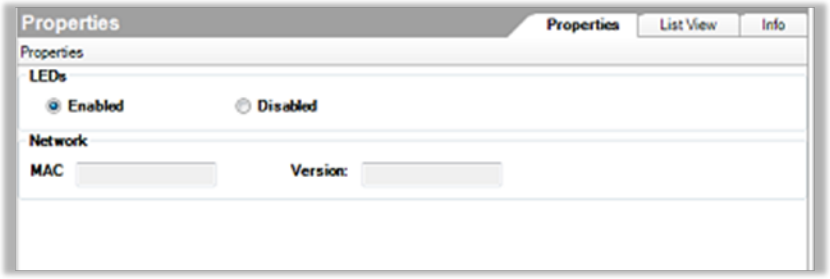
- Ensure that the Wireless Outlet Dimmer is installed and set up as directed in the Control4 Wireless Outlet Dimmer Installation Guide available on the Dealer Portal.
- Ensure that your project has a Control4 controller added and identified on the Control4 system.

To add and configure a Wireless Outlet Dimmer:

Note: Each Wireless Outlet Dimmer has two outlets: Outlet 1 and Outlet 2. When the Wireless Outlet Dimmer is plugged into an outlet and oriented as shown below, Outlet 1 is on the left and Outlet 2 is on the right.

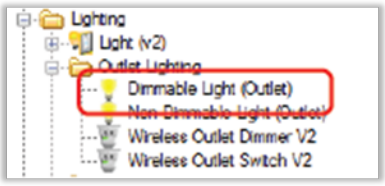


1. In the Items pane > My Drivers tab > Lighting > Outlet Lighting double-click the **Wireless Outlet Dimmer V2** object driver to add it to the project.
2. Double-click the **Dimmable Light (Outlet)** object to add a light to the outlet. Repeat if you want to add another.
3. Ensure that at least two objects are added to the project tree:
   - One for the Wireless Outlet Dimmer
   - One other object representing Outlet 1 (plus another, if you want to use Outlet 2).
4. To configure the properties, click **System Design**. In the project tree, select the **Wireless Outlet Dimmer V2** object to view the device properties.



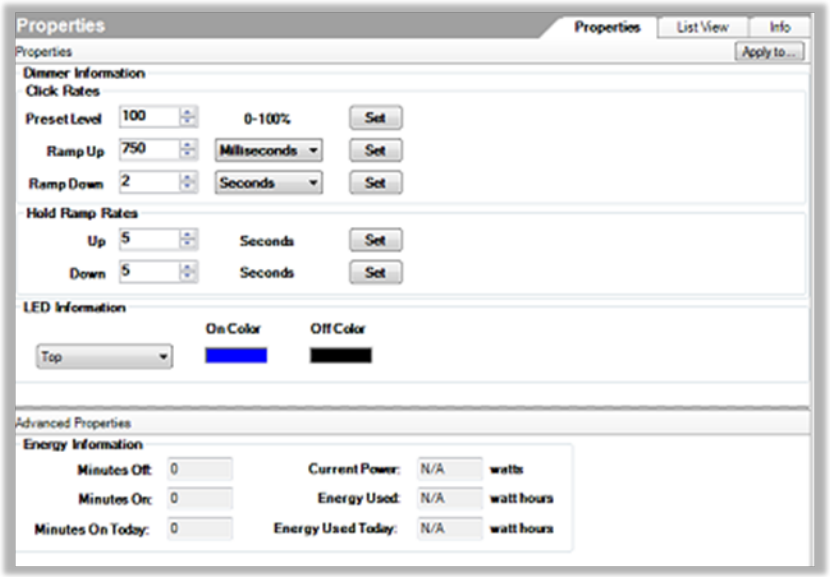
   - **LEDs**—Allows you to enable/disable the outlet indicators on top of the Wireless Outlet Dimmer.
   - **Network**—These are read-only fields for the switch's network settings.
5. Add a driver for the device you want to plug into the Wireless Outlet Dimmer as appropriate for your use.

   To add a lamp, add a **Dimmable Light (Outlet)** to the project. Go to the **System Design** view in the Items pane. Select the **My Drivers** tab > **Lighting** > **Outlet Lighting**, and double-click the **Dimmable Light (Outlet)** object.



Note: This is the Dimmable Light (Outlet) object, and not the regular Wireless Outlet Dimmer V2 object.

Configure the following fields:



Dimmer Information

- Click Rates
- **Preset Level**—The percentage of the load to which the dimmer ramps when turned on.
- **Ramp Up**—The rate the light ramps from off to on when the button is clicked.
- **Ramp Down**—The rate the light ramps from on to off when the button is clicked.
- Hold Ramp Rates
- **Up**—The time, in seconds, it takes the light to ramp to 100% when a button controlling the light is pressed and held.
- **Down**—The time, in seconds, it takes the light to fade to 0% when a button controlling the light is pressed and held.

LED Information–Sets the colors of the keypad buttons that are bound to the light. Select **Top**, **Bottom**, or **Toggle** LED colors, based on the type of keypad button binding used.

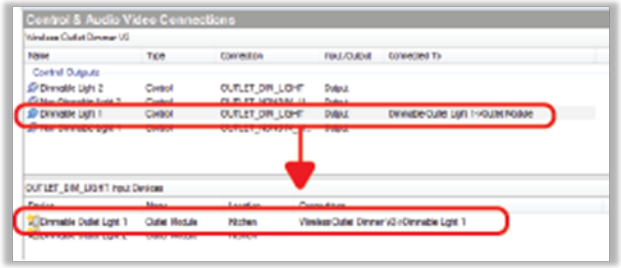
Energy Information

- **Minutes Off**—Minutes light has been off since going online.
- **Minutes On**—Minutes light has been on since going online.
- **Minutes On Today**—Minutes light has been on since midnight.
- **Current Power**—N/A.
- **Energy Used**—N/A.
- **Energy Used Today**—N/A.

6. Define the connection between the Wireless Outlet Dimmer and the plugged-in device.

1. Click the **Control/AV** tab.
2. Make a connection between the **Wireless Outlet Dimmer V2** and the device that is plugged into the Wireless Outlet Dimmer.
3. In the Connections view, select the device that is plugged into the Wireless Outlet Dimmer.
4. From the top screen, drag the appropriate connection to the Wireless Outlet Dimmer connection on the bottom screen.

Example: Connection between the Wireless Outlet Dimmer and the light outlet.



Centralized Lighting

Centralized Lighting lets you install a lighting control central panel in a mechanical room for new construction. Along with terminal blocks, the 8-Channel Dimmers, 8-Port Ethernet switches, 8-Channel 0-10V Dimmers, and 8-Channel Relay modules can be installed in these panels and connected to dimmers and switches in all rooms of the house. With any Navigator, you can control lights in any room or in the entire house, while eliminating wall clutter.

The products in the Centralized Lighting family include:

- 5-Slot Panel (C4-DIN-5PAN)
- 2-Slot Panel (C4-DIN-2PAN)
- 8-Channel Dimmer (C4-DIN-8DIM-E)
- 8-Port Ethernet Switch (C4-DIN-8ESW-E)

- 8-Channel Relay (C4-DIN-8REL-E)
- 8-Channel 0-10V Dimmer (C4-DIN-8TV-E)
- Bus Power Supply (C4-DIN-BPS)
- Bus Ethernet Gateway, DIN Rail (C4-DIN-BEG)
- 4-Channel Bus Dry Contact Input (C4-BDCI4)

Each device you install needs to be:

1. Added to the project.
2. Identified (except for the panels and 8-Port Ethernet Switch).
3. Configured.

See the following sections for details. Configure the light properties first (next section), and then configure each of the modules after that.

To learn how to design, plan, set up, and install the Centralized Lighting products, see the Centralized Lighting information under Lighting on the Dealer Portal.

> Tip: Use the Advanced Lighting Scenes and Light Properties agents with Centralized Lighting.

> Tip: Also refer to “Configuring user interfaces” for Centralized Lighting keypad configurations.

Adding Centralized Lighting to your project

Use the System Design view to add dimmable, non-dimmable, and 0-10V lights.

- **Dimmable light**—Use for any line-voltage dimmable light. Connect only to an 8-Channel Dimmer.
- **Non-dimmable light**—Use for non-dimmable lights including non-dimmable CFLs and fluorescents. Connect to an 8-Channel Relay or 8-Channel Dimmer if the wattage is low enough.
- **0-10V light**—Use for 0-10V lights (fluorescent lights and LEDs). Connect to an 8-Channel 0-10V Dimmer and an 8-Channel Relay at the same time).

Ensure that a project has been created using Virtual Director and rooms have been added. Refer to the Control4 training or the Centralized Lighting Quick Start Guide on the dealer portal for details.

To add a Centralized Lighting device:

1. To add the drivers, see “ How to add devices to a project”. Ensure that the **Light** drivers are added to the project tree (see the next step).
2. Start Composer Pro and connect to a Director.
3. Click **System Design**.

4. In the Items pane, click the **MyDrivers** tab > **Light V2** > **Dimmable Light (Panelized)**, **Non-Dimmable Light (Panelized)**, or **0-10V Light (Panelized)** to add the lights to the project tree.
5. (Optional) Rename the lights to something meaningful in the room, for example, “Overhead Lights.”

Next, you need to configure the light’s properties.

Configure light properties for Centralized Lighting

Use the System Design view to configure dimmable, non-dimmable, and 0-10V lights.

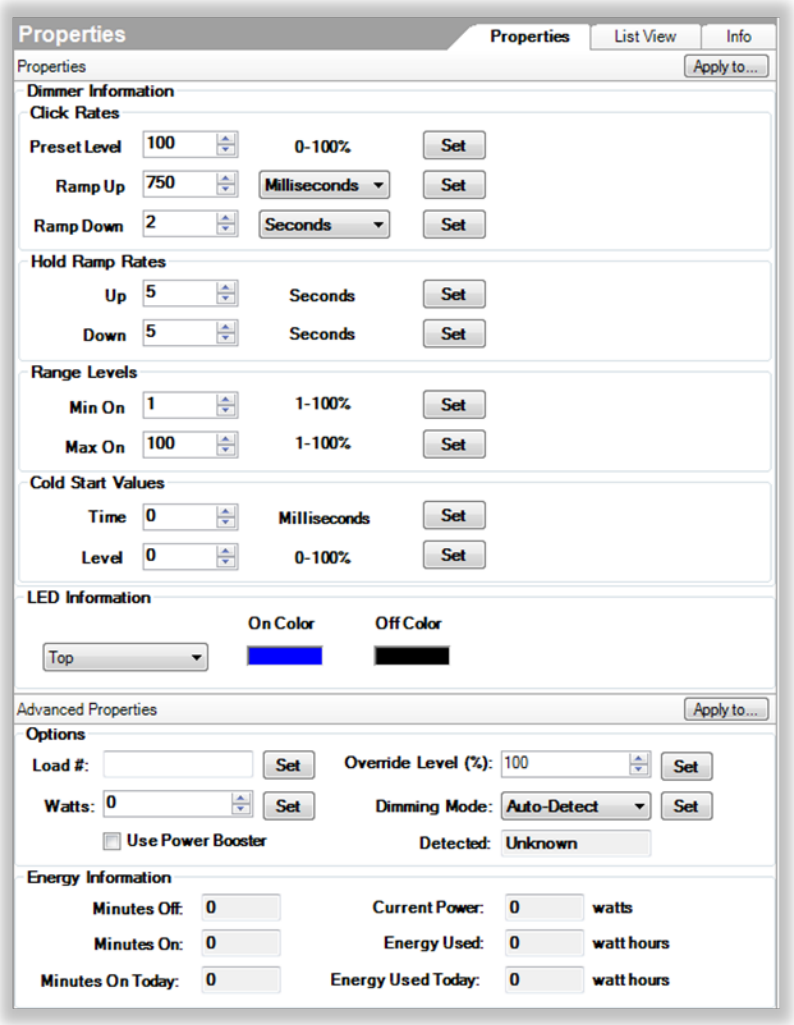
To add and configure a CentralizedLighting device:

1. In the project tree, select the light, then make changes to the device in the Properties pane.

Tip: Before you do anything else, set the values for the Load # and Watts. For your convenience, we recommend that you add all of the lights to the project first, and then go to Agents and add the Light Properties agent. This will bring up a table with all of your lights. You can then add all of the Load #s and Watts to that page, eliminating the need to go into the properties for each light and configure these two values individually.

2. To save your changes, click **Set**.

Set Dimmable Light properties



Properties: Dimmer Information

- Click Rates
- **Preset Level**—The percentage of the load to which the dimmer module ramps when turned on.
- **Ramp Up**—The rate the light ramps from off to on when the button is clicked.
- **Ramp Down**—The rate the light ramps from on to off when the button is clicked.
- Hold Ramp Rates
- **Up**—The time, in seconds, it takes the load to ramp to 100% when a button controlling the load is pressed and held.

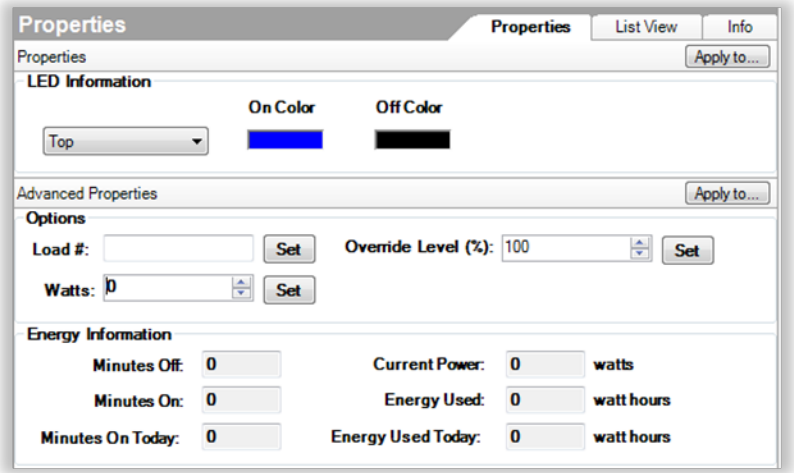
- **Down**—The time, in seconds, it takes the load to fade to 0% when a button controlling the load is pressed and held.
- **Range Levels**. Setting the Range Levels smooths out the dimming curve between the minimum and maximum values. This provides a much better dimming experience, particularly with LED lights.
- **Min On**—The minimum dimmed level, for example, 10%.
- **Max On**—The maximum dimmed level where the light will not get any brighter, for example, at 80%, the light will never get brighter than that.
- **Cold Start Values**. Many dimmable fluorescents and some LEDs require an initial burst of energy to get them to turn on. In this case, you could set the Time to 500 milliseconds and the Level to 50%.
- **Time**—Use the arrows selection box to select the time in milliseconds. The default is 0. This is the length of time a light takes to warm up before it dims down to the Cold Start Level setting.
- **Level**—Use the arrows selection box to select the minimum cold start % light level in 1% increments.
- **LED Information**—The virtual LED colors used when a keypad button is bound to the load. Select Top, Bottom, or Toggle LED Colors.

Advanced Properties

- Options
- **Load #**—The Load number or circuit number may be specified in the lighting plan. Adding that information here will provide the link from the lighting plan to the project and then to the reports that must be generated later (see "Reports " in this document for details). If the lighting plan doesn't include load numbers it's a good idea to create a unique load number for each load leg. To do this, assign a number for each floor (e.g., Basement = 1, Main = 2). Assign a number for each room on the floor (e.g., Kitchen=01, Master Bedroom = 02), and add a number for each light in the room (e.g., 01, 02, 03, etc.), so the load number would look something like this: '02-01-03.' The load number must be unique for each Panelized Lighting light.
- **Watts**—The wattage value of the light (or collection of lights in the load leg). You must enter this value prior to connecting the light to a module to ensure that the wattage calculations are correct and that the module does not overload. Example: the light leg controls six can lights in the Kitchen; each can is 100 watts. In this case, enter 600 watts (6 x 100).
- **Override Level (%)**—Defines the level or on/off state that the dimmer load will be set to when the module override button is pressed or when the auxiliary override is engaged.

- **Dimming Mode** (8-Channel Dimmer only)—Defaults to Autodetect until the dimmer detects the load type and sets the forward or reverse-phase dimming mode appropriately. LEDs usually auto detect as reverse-phase. Some LEDs work better in forward-phase. Experiment with forward and reverse phase after installation to see which option works the best.
- **Detected**—(8-Channel Dimmer only). Indicates whether forward-phase or reverse-phasedimming is detected when the dimming mode is set to **Autodetect**.
- **Use Power Booster**—(8-Channel Dimmer only). Select this option as a power booster that will be used to control the light. Power boosters allow loads greater than the maximum wattage for individual channels on the 8-Channel Dimmer to be properly dimmed. Selecting the Power Booster option automatically changes the wattage to 25W for the load calculations, and indicates in the reports that a power booster should be used.
- Energy Information
- **Minutes Off**—The number of minutes that the load has been off since the dimmer module was last reset.
- **Minutes On**—The number of minutes that the load has been on since the dimmer module was last reset.
- **Minutes On Today**—The number of minutes that the load has been on today.
- **Current Power**—The current power being used by the load (in watts).
- **Energy Used**—The total number of watt hours used by the load since the device was last reset.
- **Energy Used Today**—The total number of watt hours used by the load from 12:00 AM until 11:59 PM today.

Non-Dimmable properties



Properties: LED Information

- The virtual LED colors used when a keypad button is bound to the load. Select Top, Bottom, or Toggle LED Colors.

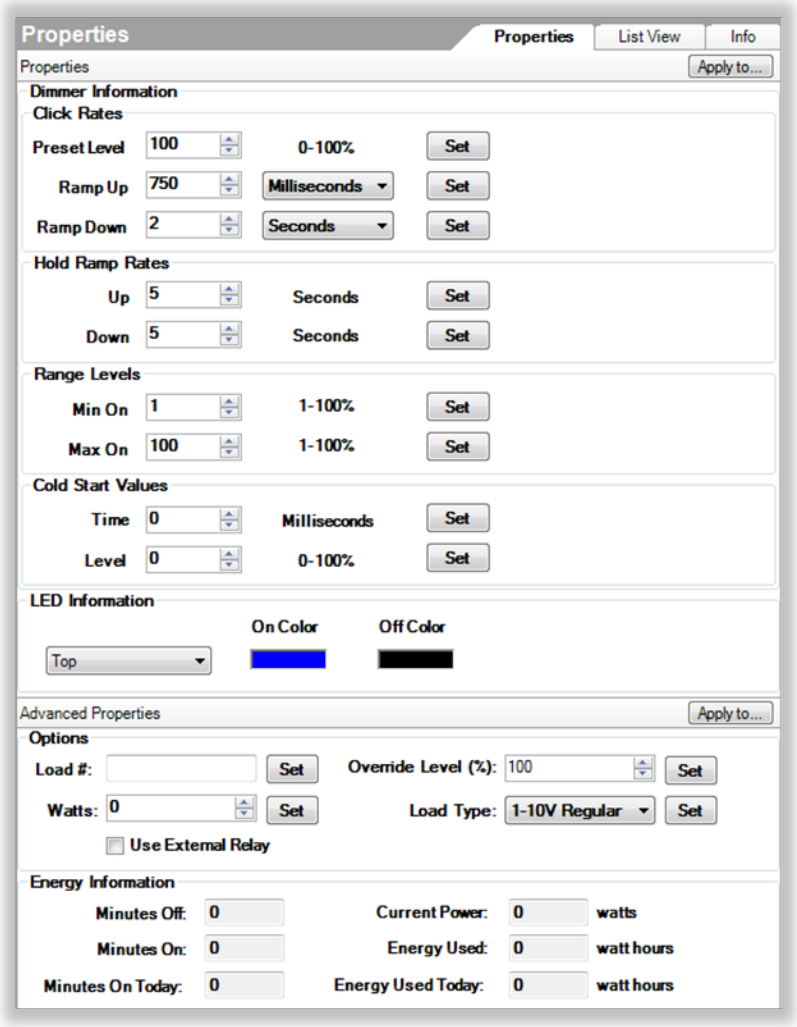
Advanced Properties

- Options
- **Load #**—The Load number and circuit number may be specified in the lighting plan. Adding that information here will provide the link from the lighting plan to the project and then to the reports that must be generated later (see "Creating Reports" in this document for details). If the lighting plan doesn't include load numbers, it's a good idea to create a unique load number for each load leg. To do this, assign a number for each floor (e.g., Basement = 1, Main = 2). Assign a number for each room on the floor (e.g., Kitchen=01, Master Bedroom = 02), and add a number for each light in the room (e.g., 01, 02, 03, etc.). So the load number would look something like this: '02-01-03.' The load number must be unique for each Panelized Lighting device.
- **Watts**—The wattage value of the light (or collection of lights in the load leg). You must enter this value prior to connecting the light to a module to ensure that the wattage calculations are correct and that the module does not overload.

  > Example: The light leg controls six can lights in the Kitchen; each can is 100 watts. In this case, enter 600 watts (6 x 100).

- **Override Level (%)**—Defines the level or on/off state that the dimmer load will be set to when the module override button is pressed or when the auxiliary override is engaged.
- Energy Information
- **Minutes Off**—The number of minutes that the load has been off since the dimmer module was last reset.
- **Minutes On**—The number of minutes that the load has been on since the dimmer module was last reset.
- **Minutes On Today**—The number of minutes that the load has been on today.
- **Current Power**—The current power being used by the load (in watts).
- **Energy Used**—The total number of watt hours used by the load since the device was last reset.
- **Energy Used Today**—The total number of watt hours used by the load from 12:00 AM until 11:59 PM today.

0-10V properties



Properties

- Dimmer Information
- Click Rates
- **Preset Level**—The percentage of the load to which the dimmer module ramps when turned on.
- **Ramp Up**—The rate the light ramps from off to on when the button is clicked.
- **Ramp Down**—The rate the light ramps from on to off when the button is clicked.
- Hold Ramp Rates
- **Up** —The time, in seconds, it takes the load to ramp to 100% when a button controlling the load is pressed and held.

- **Down**—The time, in seconds, it takes the load to fade to 0% when a button controlling the load is pressed and held.
- Range Levels
- **Min On**—The minimum dimmed level, for example, 10%.
- **Max On**—The maximum dimmed level where the light will not get any brighter, for example, at 80%, the light will never get brighter than that.
- **Cold Start Values**
- **Time**—Use the arrows selection box to select the time in milliseconds. The default is 0. This is the length of time a light takes to warm up before it dims down to the Cold Start Level setting.
- **Level**—Use the arrows selection box to select the minimum cold start % light level in 1% increments.
- **LED Information**—The virtual LED colors used when a keypad button is bound to the load. Select Top, Bottom, or Toggle LED Colors.

Advanced Properties

- Options
- **Load #**—The load number and circuit number may be specified in the lighting plan. Adding that information here will provide the link from the lighting plan to the project and then to the reports that must be generated later (see "Reports " in this document for details). If the lighting plan doesn't include load numbers, it's a good idea to create a unique load number for each load leg. To do this, assign a number for each floor (e.g., Basement = 1, Main = 2). Assign a number for each room on the floor (e.g., Kitchen=01, Master Bedroom = 02), and add a number for each light in the room (e.g., 01, 02, 03, etc.). So the load number would look something like this: '02-01-03.' The load number must be unique for each Panelized Lighting device.
- **Watts**—The wattage value of the light (or collection of lights in the load leg). You must enter this value prior to connecting the light to a module to ensure that the wattage calculations are correct and that the module does not overload. Example: The light leg controls six can lights in the Kitchen; each can is 100 watts. In this case, enter 600 watts (6 x 100).
- **Override Level(%)**—Defines the level or on/off state that the dimmer load will be set to when the module override button is pressed or when the auxiliary override is engaged.
- **Load Type**—Select an option based on the specific type of 0-10V light being used:
- **0-10V Regular**—Used when 0V = minimum dimmed level and 10V = maximum level. Note that most “0-10V” lights do not actually use 0-10V, they

use 1-10V. Only select this option if you know that the light actually requires true 0-10V control.

- **1-10V Regular**—Used when 1V = minimum dimmed level and 10V = maximum level. This is the default selection as it is the actual standard for 0-10V lights.
- **0-10V Inverted**—Used when 10V = minimum dimmed level and 0V = maximum level. (Rarely used.)
- **1-10V Inverted**—Used when 10V = minimum dimmed level and 1V = maximumlevel. (Rarely used.)
- **Use External Relay**—Check the box if an external relay such as a Leviton Power Pack Relay will be used for on/off control of the 0-10V light. Uncheck if on/off control will be provided by a Control4 Relay Module or if the 0-10V light does not require separate on/off control. If the **Use External Relay** box is checked, the 0-10V light will not be able to be connected to a Control4 Relay Module and the reports will indicate that an external relay should be used.

Energy Information

- **Note**—Energy information is only provided when the 0-10V light is connected to a Control4 Relay Module.
- **Minutes Off**—The number of minutes that the load has been off since the relay module was last reset.
- **Minutes On**—The number of minutes that the load has been on since the relay module was last reset.
- **Minutes On Today**—The number of minutes that the load has been on today.
- **Current Power**—The current power being used by the load (in watts).
- **Energy Used**—The total number of watt hours used by the load since the device was last reset.
- **Energy Used Today**—The total number of watt hours used by the load from 12:00 AM until 11:59 PM today.

Configure an 8-Channel Dimmer

Use the System Design and Connections views to configure an 8-Channel Dimmer module for Centralized Lighting.

Ensure that the 8-Channel Dimmer module (C4-DIN-8-DIM-E) is installed as directed in the Control4 8-Channel Dimmer Installation Guide*, 8-Channel Dimmer Operation and Configuration Guide,* and the *8-Channel Dimmer Wiring Guide* on the Dealer Portal.

To add and configure an 8-Channel Dimmer module:

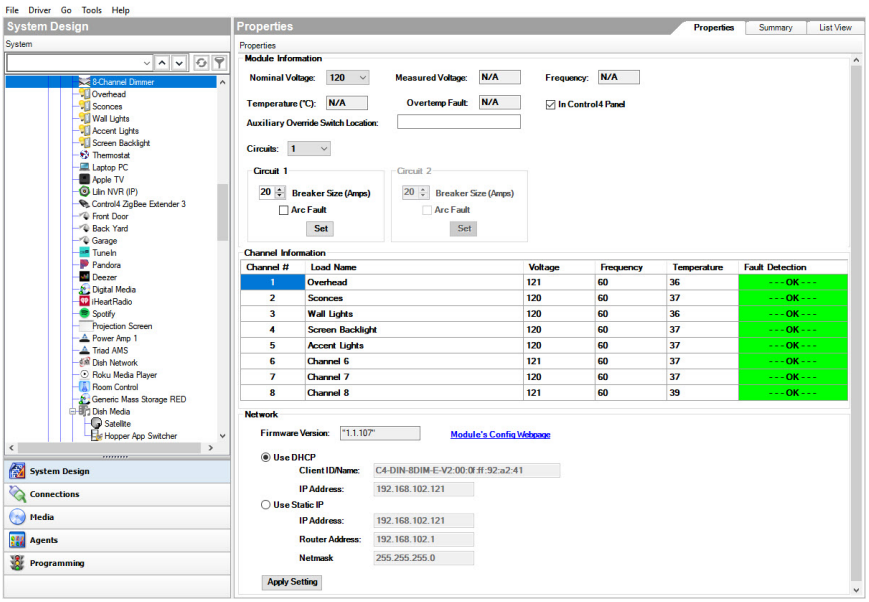
1. To add the driver and identify the device see " How to add devices to a project." Ensure that the **8-Channel Dimmer** driver is added to the project tree (see the next step). Add as many 8-Channel Dimmer drivers as needed (eight loads per module).

2. In the Items pane > My Drivers tab > Lighting > Panelized Lighting select the **8-Channel Dimmer** to add the driver to the project tree.

Notes: (1) Auto Discovery is available, but we recommend that you add the drivers manually for best results. (2) It's best to add all of the modules at the same time before making all of the connections.

3. (Optional) Rename the module drivers to something meaningful in the room, for example, 8-Channel Dimmer 1 in the Mechanical Room.
4. (Optional) To configure the dimmer's properties, in the project tree select the **8-Channel Dimmer** object and view the items in the Properties pane.

Dimmer Properties:



Module Information

- **Nominal Voltage**—(110V – 277V) The voltage of the circuit to which the module will be connected. Measured voltage may differ slightly from nominal voltage depending on the electrical supply. This is used for wattage calculations when connecting loads to the module.
- **Measured Voltage**—Indicates the electrical voltage that the module is measuring. Not editable.
- **Frequency**—Indicates the electrical frequency that the module is measuring. Not editable.
- **Temperature**—View the module's temperature.
- **Overtemp Fault**—View the module's temperature fault, if displayed.
- **In Control4 Panel**—Check if this module will be installed in a Control4 2-slot or 5-slot panel. Do not check if the module will be installed in a third-party

DIN rail panel. This is used in maximum wattage calculations. Dimmers in third-party panels must be derated with lower wattage limits.

- **Auxiliary Override Switch Location**—Indicates where the override switch should be installed and wired, e.g., the Master Bedroom Closet. Type the room's name. This information will be included in the Module Report that can be provided to the electrician.
- **Circuits** (2 maximum)—Set to 1 or 2. It's usually best to set this value to 2 and then reduce it to 1 if the connections made later are under the maximum wattage for a single circuit.
- **Circuit 1, 2**—The breaker size for each circuit. This can be set from 10A to 20A. Used for maximum wattage calculations.
- **Arc Fault**—Check with the local electrician to determine the local requirements for arc-fault breakers. In the U.S., NEC requires arc-fault breakers (AFCIs) for circuits serving most living areas. Some municipalities using an older version of the code may require them only on lights in bedrooms or not require them on lighting circuits. AFCIs are prone to interpret dimming as a fault and nuisance trip. They are limited to only 8.3A of dimming on the circuit. This setting is used for maximum wattage calculations.

Channel Information

- **Channel#**—The channel number indicated on the module's hardware.
- **Load Name**—The name of the load that is connected to the indicated channel.
- **Fault Status**—Refer to the 8-Channel Dimmer Installation Guide for fault details.

Network

- **Firmware Version**—Indicates the firmware driver version for this module.
- **Modules Config Page**—Click to open the network configuration page for the module in your internet browser.

Configure an 8-Channel Relay

Use the System Design and Connections views to configure an 8-Channel Relay module for Centralized Lighting devices.

Ensure that the 8-Channel Relay module (C4-DIN-8REL-E) is installed as directed in the Control4 8-Channel Relay Installation Guide on the Dealer Portal.

To add and configure an 8-Channel Relay module:

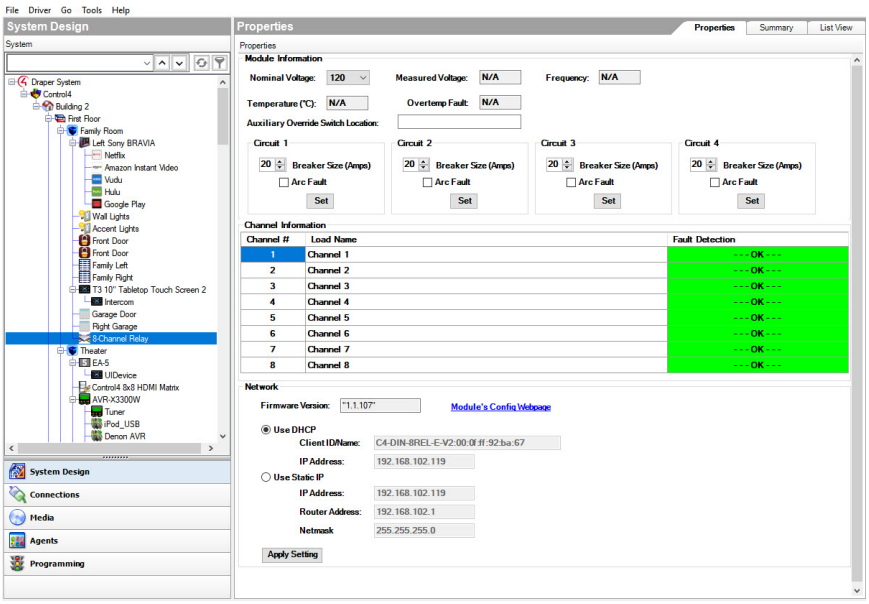
1. To add the driver and identify the device see " How to add devices to a project." Ensure that the **8-**Channel **Relay** driver is added to the project tree (see the next step). Add as many 8-Channel Relay drivers as needed (eight relays per module).

2. In the Items pane > My Drivers tab > Lighting > Panelized Lighting select the **8-Channel Relay** to add the driver to the project tree.

Notes: (1) Auto Discovery is available for this product, but we recommend that you add the drivers manually for best results. (2) It's best to add all of the modules at the same time before making all of the connections.

3. (Optional) Rename the module drivers to something meaningful in the room, for example, 8-Channel Relay 1 in the Mechanical Room.
4. (Optional) To configure the relay's properties, in the project tree select the **8-Channel Relay** object and view the items in the Properties pane.

Relay Properties:



Module Information

- **Nominal Voltage (110V – 277V)**—The voltage of the circuit to which the module will be connected. Measured voltage may differ slightly from nominal voltage depending on the electrical supply. This is used for maximum wattage calculations.
- **Measured Voltage**—Not editable.
- **Frequency**—Not editable.
- **Temperature**—View the module's temperature.
- **Overtemp Fault**—View the module's temperature fault, if displayed.
- **In Control4 Panel**—Check if this module is installed in a 2-slot or 5-slot panel. Do not check if the module will be installed in a third-party DIN rail panel. This is used in maximum wattage calculations. Relays in third-party panels must be derated with lower wattage limits.

- **Auxiliary Override Switch Location**—Indicates where the override switch should be installed and wired, e.g., the Master Bedroom Closet. Type the room's name in the box.
- **Circuit 1, 2, 3, 4**—The breaker size for each circuit. This can be set from 10A to 20A. Used for maximum wattage calculations.

Channel Information

- **Channel#**—The channel number indicated on the module's hardware.
- **Load Name**— The name of the load that is connected to the indicated channel.

Network

- **Firmware Version**—Indicates the firmware version for this driver.
- **Modules Config Page**—Click to open the network configuration page for the module in your Internet browser.

Configure an 8-Port Ethernet Switch

There are no properties to define for the 8-Port Ethernet Switch (C4-DIN-8ESW-E) driver in Composer Pro.

Configure an 8-Channel 0-10V Dimmer

Use the System Design and Connections views to configure an 8-Channel 0-10V Dimmer module.

Ensure that the 8-Channel 0-10V Dimmer module (C4-DIN-8TV-E) is installed as directed in the Control4 8-Channel 0-10V Dimmer Installation Guide and 8-Channel 0-10V Dimmer Wiring Guide available on the Dealer Portal.

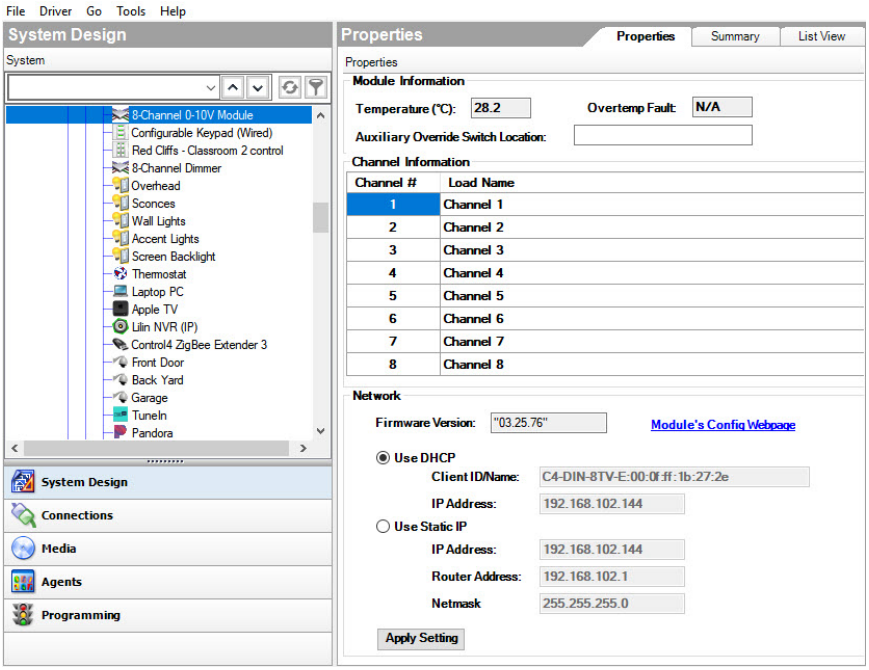
To add and configure an 8-Channel 0-10V Dimmer module:

1. To add the driver and identify the device see " How to add devices to a project." Ensure that the **8-Channel 0-10V Dimmer module** driver is added to the project tree (see the next step). Add as many 8-Channel 0-10V Module drivers as needed (eight dimmers per module).
2. In the Items pane > My Drivers tab > Lighting select the **8-Channel 0-10V Module** to add the driver to the project tree.

Notes: (1) Auto Discovery is available, but we recommend that you add the drivers manually for best results. (2) It's best to add all of the modules at the same time before making all of the connections.

3. (Optional) Rename the module drivers to something meaningful in the room, for example, 8-Channel 0-10V Module 1 in the Mechanical Room.
4. (Optional) To configure the dimmer's properties, in the project tree select the **8-Channel 0-10V Module** object and view the items in the Properties pane.

0-10V Dimmer Properties:



Module Information

- **Temperature**—View the module's temperature.
- **Overtemp Fault**—View the module's temperature fault, if displayed.
- **Auxiliary Override Switch Location**—Indicates where the override switch should be installed and wired, e.g., the Master Bedroom Closet. Type the room's name in the box.

Channel Information

- **Channel#**—The channel number indicated on the module's hardware.
- **Load Name**—The load name used.

Network

- **Firmware Version**—Indicates the firmware driver version for this module.
- **Modules Config Page**—Click to open the network configuration page for the module in your internet browser.

Configure a Bus Ethernet Gateway

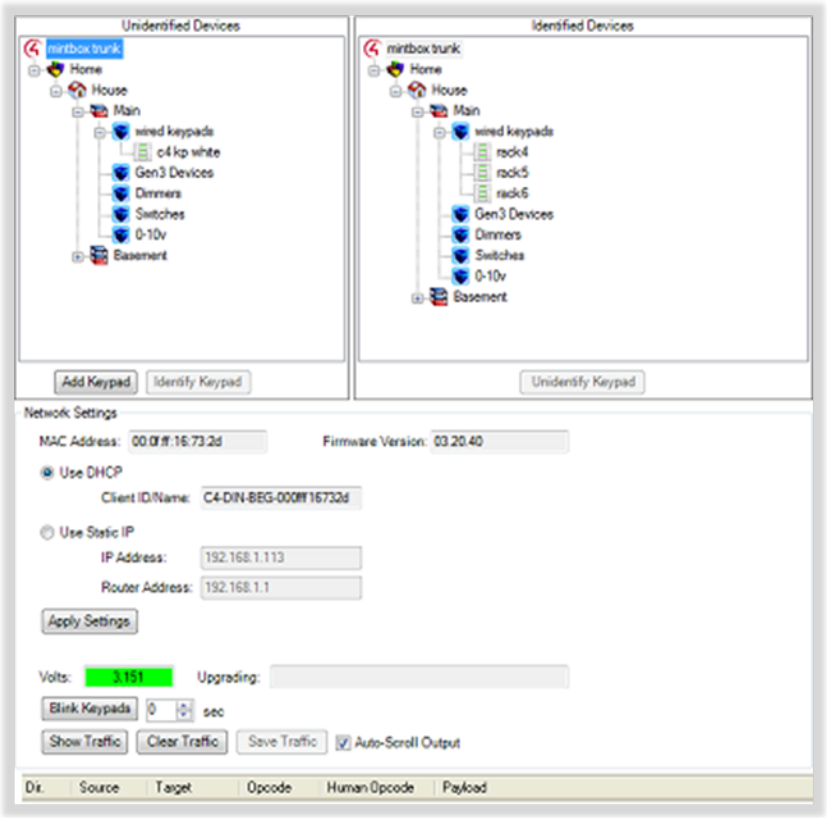
Use the System Design and Connections views to configure a Bus Ethernet Gateway.

To add and configure a Bus Ethernet Gateway:

1. To add the driver and identify the device see "How to add devices to a project." Ensure that the **Bus Ethernet Gateway** driver is added to the project tree (see the next step).

2. In the **Items** pane > **My Drivers** tab > **Lighting** select the **Bus Ethernet Gateway** to add the driver to the project tree.
3. Click each button to define its name and behavior.

Bus Ethernet Gateway Properties:



Unidentified Devices

- **Add Keypad**—Allows you to indicate which keypads are to be bound to this keypad. This is a convent way of doing mass bindings, instead of having to use the *Connection* page. Only keypads bound to the gateway will appear in the two project trees.
- **Identify Keypad**—Identifies the currently selected keypad. A window will appear with further instructions.

Identified Devices

- **Unidentify Keypad**—Un-identifies the currently selected keypad. Un-identifying resets it to its default state.

Network Settings

- **MAC Address**—Read-only field displaying the network's MAC address of the device.

- **Firmware Version**—Indicates the firmware version for the device.
- **Use DHCP**—Select this option to use DHCP, then click **Apply Settings**. The Client ID appears in the read-only field.
- **Use Static IP**—Select this and enter values for the IP Address and the Router Address to use Static IP, then click **Apply Settings**.
- **Volts**—(read-only) Displays the voltage rating coming from the device. Green background=ok, yellow=caution, red=warning.
- **Upgrading**—(read-only, normally blank) If updating, displays a progress bar and ID of the upgrading device.
- **Blink Keypads—**For debugging. Set the number of seconds you want the keypads to blink, then click **Blink Keypads**.
- **Show Traffic—**Displays network traffic crossing the gateway. **Clear Traffic** clears the log, and **Save Traffic** allows you to save the log.

Configuring user interfaces

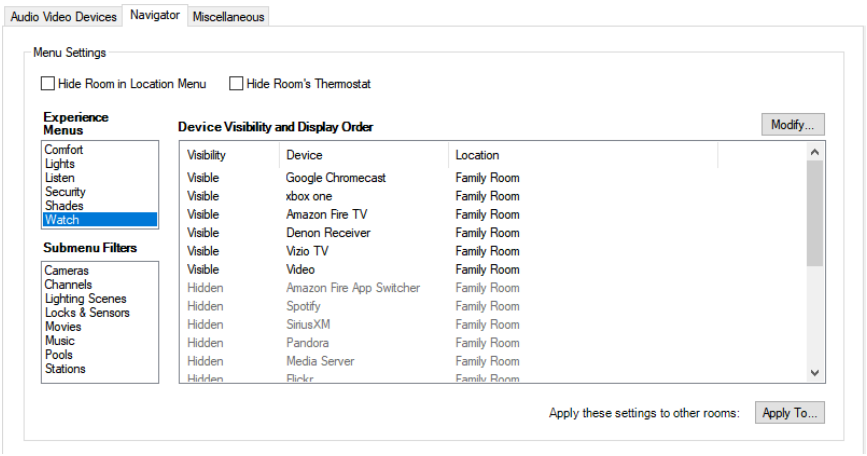
Use the System Design and Connections views to configure Navigators for the Control4 system.

These subsections provide information about configuring system remote controls and touch screens:

- “Configure System Remote Control SR-150B”
- “Configure System Remote Control Version 3, SR-250”
- “Configure a 7” Portable Touch Screen with Camera”
- “Configure a 7” Portable Touch Screen”
- “Configure a 7” Tabletop or Wall-Mounted Touch Screen”
- “Configure a 7” In-Wall Touch Screen with Camera”
- “Configure a 5” or 7” In-Wall Touch Screen”
- “Configure Mobile Devices or PCs/Tablets as Navigators”
- “Configure a Door Station”

Change the order and visibility of devices

You can modify the order that your customer's devices will show up in Navigators and hide or display devices by sorting the devices in the major Experience Menus: Comfort, Lights, Listen, Security, Shades, and Watch and in the Submenu FIlters: Cameras, Channels, Lighting Scenes, Locks & Sensors, Movies, Music, Pools, and Stations.



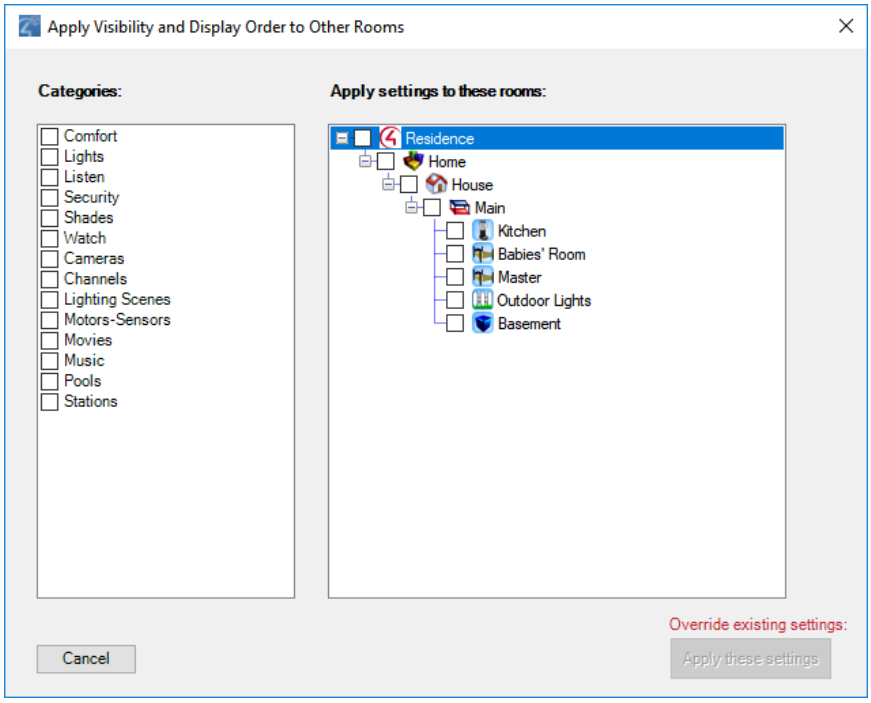
To change the order or visibility of your customer's devices:

1. In the project tree, click the **room** to control.
2. Click **Apply To...**.
3. From the Menu (left side), select the function to change; for example, **Watch** or **Listen**.
4. Select the item in *Device Visibility and Display Order*, and then click **Modify**.
5. Change to the desired order, and then click **OK**.

You can also apply these settings to all rooms or to chosen rooms in the project.

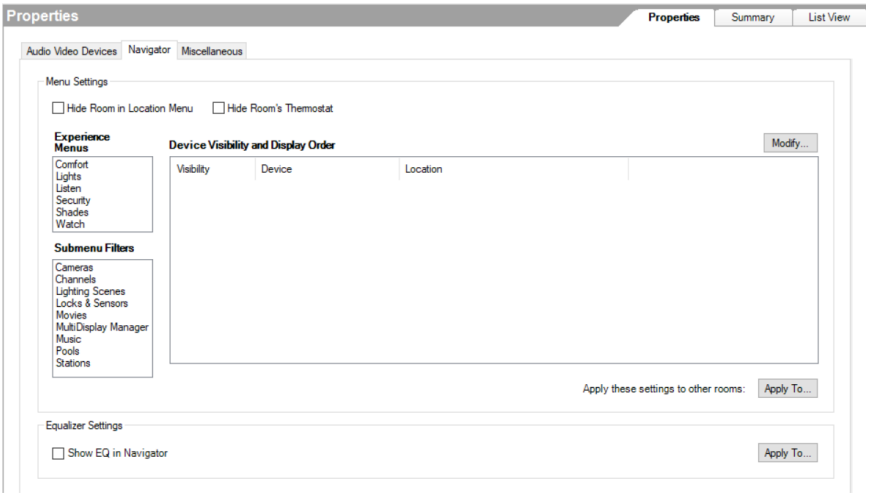
To change the order or visibility of your customer's devices and apply to multiple rooms:

1. Follow the steps above to set the desired order in each menu and submenu.
2. Check the box next to each category in the *Categories* list (for example **Watch** and **Listen**) to apply the settings for those categories to multiple rooms.
3. Check the box next to each **room**, **floor**, **building**, **location**, or the **project** to apply the settings for the chosen categories to those rooms.
4. Click on **Apply these settings** to apply the visibility and display order settings from the chosen categories to the chosen rooms..



Enable Equalizer Settings

You can modify the order that your customer's devices will show up in Navigators and hide or display devices by sorting the devices in the major Experience Menus: Comfort, Lights, Listen, Security, Shades, and Watch and in the Submenu FIlters: Cameras, Channels, Lighting Scenes, Locks & Sensors, Movies, Music, Pools, and Stations.



To show Equalizer Settings in your customer's devices:

1. In the project tree, click the **room** you want to show Equalizer settings.
2. Click on the **Navigator** tab.
3. Under Equalizer Settings, click the box next to **Show EQ in Navigator**.
4. To enable the Equalizer settings in more than one room, click **Apply To...**, select the rooms, and click **OK**.

> **Important**! Equalizer settings require a supported device connected to the audio end-point for the room. Supported devices include analog audio out of an EA controller, Triad One, and Triad audio matrix switches.

Configuring remote controls

Configure System Remote Control SR-150B

Use the System Design and Connections views to add and identify this device.

Ensure that the SR-150B is installed as directed in the Control4 System Remote Control SR-150B Setup Guide.

To add and configure an SR-150B:

1. To add the driver and identify the device see " How to add devices to a project." Ensure that the **System Remote Control SR-150** driver is added to the project tree.
2. (Optional) To configure the properties, click **System Design**.
3. In the project tree, select the **System Remote Control** object.
4. View and change the properties in the Properties pane.

Note: Press any button on the system remote control to display the configurable property values in the Properties pane. Because the SR-150B has no window, some of the options below are not supported in the SR-150B.

Modifiable properties include:

- **Screen Backlight**—Not used.
- **Keypad Backlight**—Lets you set the light level of the backlight. The default is 0%. Click **Set Level**.
- **Sleep Mode**—Lets you configure sleep mode settings. The default is five seconds, but can be extended to 60 seconds. Select **Wake on Movement** if you want the remote control to wake up when moved.
- **Batteries**—Lets you view the battery level on your remote control.
- **Enable Recharge Station**—Check this box if you received a Remote Recharging Station *with* a remote. This feature updates your existing remote to recognize the new rechargeable battery.
- **Network**—Lets you view the remote control's Zigbee channel, gateway, MAC address and firmware version.
- **MAC**—Displays the remote's own MAC address.
- **Firmware Version**—Displays the current firmware version of the remote control.
- **Watch/Listen Button Behavior**—If you select one of the options below, the following action occurs when you press the **Watch** button.
- **No Action—**When you press the **Watch** button, nothing happens. This option can be tied to programming a button (see the section below).
- **Select Most Recently Used Device**—Lists the last three devices (for example, DVD player, media player, television).

5. Change the system remote control settings as needed at the physical system remote control SR-150B using the applicable button-press sequence:
   - **Check Zigbee Channel**—To determine the current Zigbee channel, press **Room Off, 0, 0, 3** (or **Room Off, 7, 4, 7**) (in that order), and then count the blinks of Room Off. The number of blinks corresponds with the channel number.
   - **Reset to Factory Defaults**—To reset all settings to the factory defaults (including Zigbee channel), press **Room Off, 9, 9, 9**.

Program the System Remote Control SR-150B programmable buttons

On the System Remote Control SR-150, you can program six buttons (red, green, yellow, blue, *, and #) to perform programmed activities. The buttons can be programmed to execute any of the AV device's macros or IR codes or be programmed by room.

To program the buttons:

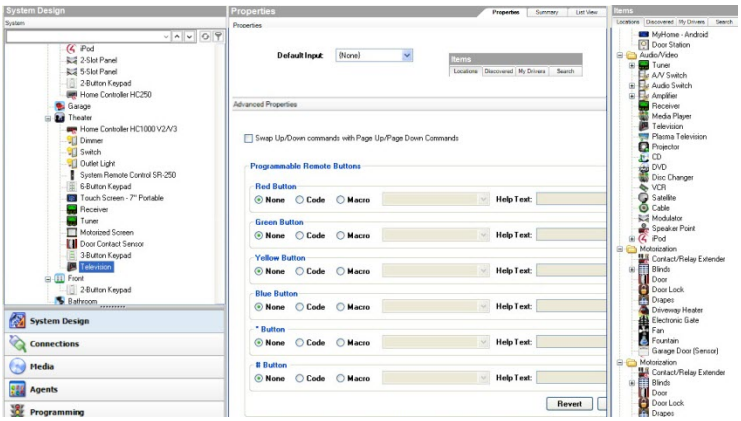
1. Ensure that you have the following devices in your project:
   - Controller
   - System remote control SR-150B

- An AV device to be controlled

2. In Composer Pro, click **Connections**.
3. Click the **Network** tab. Ensure that the controller and the remote are both network identified.
4. Program the programmable buttons (Red, Green, Yellow, Blue, *, or #) either based on the selected AV device or the selected room.

Based on AV device:

1. Click **System Design**.
2. Select an **AV device** to display the device's Properties page.



3. On the device's Properties page, select **Code** or **Macro** for the button you want to program, and then select a code or macro from the drop-down list.
4. Edit the Help text as needed, and then select **Set**.

Note**:** Help text describes custom programming to users in the House option in any of the Navigators.

Example**:** (1) In System Design, select **Disc Changer**. (2) In the Red button, select **Code**. (3) From the drop-down list, select **Subtitle**. (4) Select the **Set** button to create a **Subtitle** button.

Based on room:

1. Click **Programming**.
2. Select a room in the Device Events pane.
3. Select the **Commands** radio button in the <Room> Events pane.
4. Use the drop-down menu to select a command or **button** (example, **Blue Button**).
5. In the Actions pane, build the script using the items to program the actions in the selected room when the selected command or button is used.

Configure System Remote Control SR-250

Use the System Design and Connections views to add and identify this device.

Ensure that the system remote control SR-250 is installed as directed in the Control4 System Remote Control SR-250 Setup Guide available on the Dealer Portal.

To add and configure an SR-250:

1. To add the driver and identify the device see " How to add devices to a project." Ensure that the **System Remote Control SR-250** driver is added to the project tree.
2. (Optional) To configure the properties, click System Design.
3. In the project tree, select the System Remote Control object.
4. View and change the properties in the Properties pane.

Note: Press any button on the SR-250 to display the configurable property values in the Properties pane.

Tip: You can also change most of these settings on the SR-250 using Info > Config.

Modifiable properties include:

- Screen Backlight—Lets you set the light level of the screen's backlight. Select a percentage from 0 (Off) to 100 (full brightness). The default is 100%. Click Set Level.
- Keypad Backlight—Lets you set the light level of the keypad's backlight. Select a percentage from 0 (Off) to 100 (full brightness). The default is 100%. Click Set Level.
- Sleep Mode—Lets you set how long the remote control stays awake after no activity. The default setting is five seconds, but can be extended to 60 seconds. Select Wake on movement to wake the SR-250 up when moved.
- Batteries—Lets you view the battery level (strength in %) of your remote.
- **Enable Recharge Station**—Check this box if you received a Remote Recharging Station *with* a remote. This feature updates your existing remote to recognize the new rechargeable battery.
- Network—Lets you view the remote's Zigbee channel, gateway, MAC address and firmware version.
- Channel—Displays your Zigbee channel (1-15), which should match the Zigbee channel set for the controller.
- Gateway—Displays the MAC address of the Zigbee server (usually your controller unless you specify otherwise).
- MAC—Displays the remote's own MAC address.
- Firmware Version—Displays the current firmware version of the remote.
- Watch/Listen Button Behavior—If you select one of the options below, the following action occurs when you press the **Watch** button.
- No Action—If you select this option and you press the Watch button, nothing happens. This option can be tied to programming a button (see the section below).

- Select Most Recently Used Device—Lists the last three devices (for example, DVD player, media player, TV).
- Show Device List—Lists the source device of the selection.

5. (Conditional) Change Zigbee Channel: If you need to change the Zigbee channel to match the controller's channel or to improve reception, do the following on the system remote control SR-250.

If the system remote control is NOT identified, follow these steps:

1. Press buttons 2, 4, 8, 6, #, *, and then press the List button (in that order) to get into Edit mode.
2. Use the up or down arrows to pick the Zigbee channel.
3. Press Select to change the Zigbee channel.
4. Press CNCL to exit Edit mode.

If the system remote control IS identified, follow these steps:

1. Press the List button once or twice to display the menu options.
2. Press buttons 2, 4, 8, 6, #, * and then press the List button (in that order) to get into Edit mode.
3. Use the up or down arrows to pick a Zigbee channel.
4. Press Select to change the Zigbee channel.
5. Press CNCL to exit Edit mode.

Program the SR-250 programmable buttons

On the system remote control SR-250, you can program six buttons (Red, Green, Yellow, Blue, *, and #) to perform programmed activities. You can program these buttons to execute any of the AV device's macros or IR codes or they can be programmed by room.

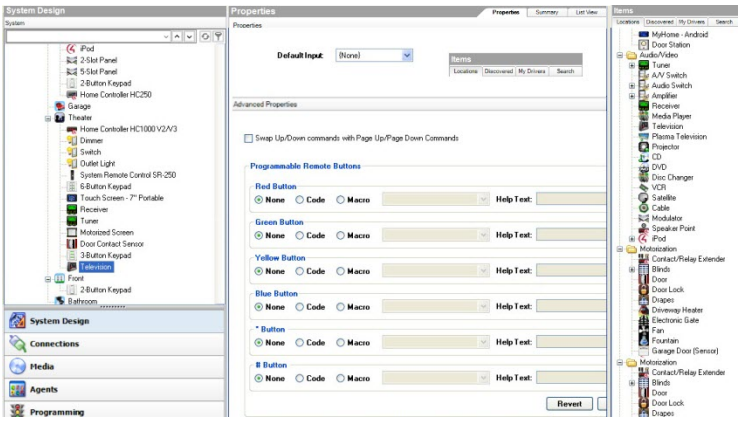
To program the SR-250 programmable buttons:

1. Ensure that you have the following devices in your project:
   - Controller
   - System remote control SR-250
   - An AV device to be controlled
2. In Composer Pro click Connections.
3. Click the Network tab. Ensure that the controller and the remote are both network identified.
4. Program the programmable buttons (Red, Green, Yellow, Blue, *, or #) either based on the selected AV device or the selected room.

Based on AV device:

1. Click System Design.

2. Select an AV device to display the device's Properties page.



3. On the device's Properties page, select Code or Macro for the button you want to program, and then select a code or macro from the drop-down list.
4. Edit the Help text as needed, and then select Set.

Note: Help text describes custom programming to users in the House option in any of the Navigators.

Example: (1) In System Design view, select Disc Changer. (2) In the Red button, select Code. (3) From the drop-down list, select Subtitle. (4) Select the Set button to create a Subtitle button.

Based on room:

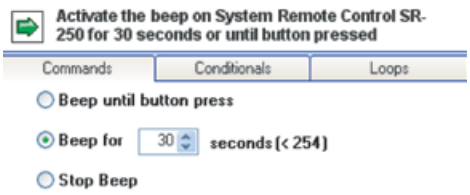
1. Click Programming.
2. Select a room in the Device Events pane.
3. Select the Commands radio button in the <Room> Events pane.
4. Use the drop-down menu to select a command or button (example, Blue Button).
5. In the Actions pane, build the script using the items to program the actions in the selected room when the selected command or button is used.

Program the SR-250 Paging feature

Configure the Beep paging feature for this remote version through programming. Use this feature to page a lost remote. You can program a keypad or a custom button to cause the remote to beep when pressed.

To program the paging feature for this system remote control:

1. In Composer Pro, click Programming.
2. Select the event that you want to use to start the page. Example: To select a keypad button press, first select the Keypad in the Device Event pane, and then select the button in Events.
3. In the Actions list, select System Remote Control SR-250.
4. In the Commands list, select an action below for the remote, and then drag the green arrow to the Script pane.



- Beep until button press—The remote beeps until you press one of its buttons.
- Beep for X seconds (<254)—The remote beeps until X seconds have elapsed or you press one of its buttons.
- Stop Beep—The remote stops beeping.

5. Click **Execute**.

Configure System Remote Control SR-260

Use the System Design and Connections views to add and identify this device.

Ensure that the System Remote Control SR-260 is installed as directed in the Control4 System Remote Control SR-260 Setup Guide available on the Dealer Portal.

To add and configure an SR-260:

1. To add the driver and identify the device see " How to add devices to a project." Ensure that the **System Remote Control SR-260** driver is added to the project tree.
2. (Optional) To configure the properties, click System Design.
3. In the project tree, select the System Remote Control object.
4. View and change the properties in the Properties pane.

Note: Press any button on the SR-260 to display the configurable property values in the Properties pane.

Tip: You can also change most of these settings on the SR-260 using Info > Config.

Modifiable properties include:

- Screen Backlight—Lets you set the light level of the screen's backlight. Select a percentage from 0 (Off) to 100 (full brightness). The default is 100%. Click Set Level.
- Keypad Backlight—Lets you set the light level of the keypad's backlight. Select a percentage from 0 (Off) to 100 (full brightness). The default is 100%. Click Set Level.
- Check Light Sensor Enabled to allow the ambient light sensor to control the backlight.
- Awake Duration—Lets you set how long the remote control stays awake after no activity. The default setting is five seconds, but can be extended to 60 seconds.

- Wake on Motion—Lets you set the SR-260 to wake up when moved. Choose the desired option and click Set Level.
- Check In Interval—Lets you set how often the remote control will check in with the Control4 system on the Zigbee network. The default is 10 seconds, but decreasing the interval may decrease battery life. Click **Set Timeout**.
- Battery—Lets you view the battery level (strength in %) of your remote.
- **Enable Recharge Station**—Check this box if you received a Remote Recharging Station *with* a remote. This feature updates your existing remote to recognize the new rechargeable battery.
- Network—Lets you view the remote's MAC address and firmware version.
- MAC—Displays the remote's own MAC address.
- Firmware Version—Displays the current firmware version of the remote.
- Watch/Listen Button Behavior—If you select one of the options below, the following action occurs when you press the **Watch** button.
- No Action—If you select this option and you press the Watch button, nothing happens. This option can be tied to programming a button (see the section below).
- Select Most Recently Used Device—Lists the last three devices (for example, DVD player, media player, TV).
- Show Device List—Lists the source device of the selection. When Show Device List is selected, Watch and Listen items will not show in the List Navigator menu.
- **Text Color—**Choose the text color to display on the SR-260. The text color will preview in the *Text Preview field.* Click **Set Color**.

Program the SR-260 programmable buttons

On the system remote control SR-260, you can program six buttons (Red, Green, Yellow, Blue, *, and #) to perform programmed activities. You can program these buttons to execute any of the AV device's macros or IR codes or they can be programmed by room.

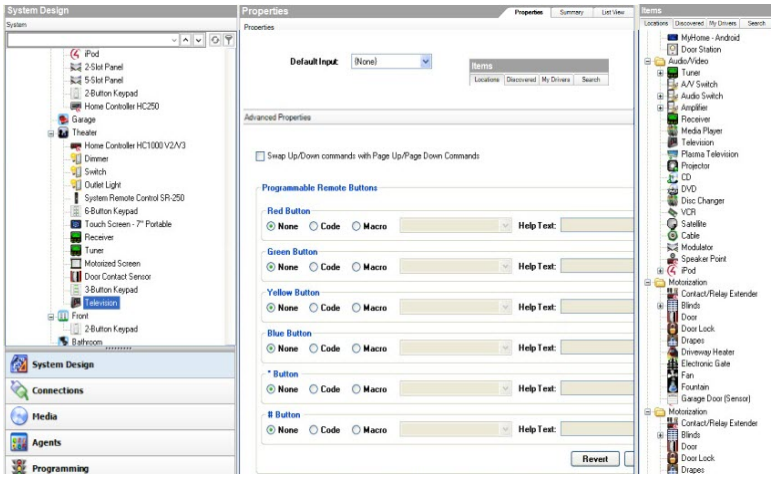
To program the SR-260 programmable buttons:

1. Ensure that you have the following devices in your project:
   - Controller
   - System remote control SR-260
   - An AV device to be controlled
2. In Composer Pro click Connections.
3. Click the Network tab. Ensure that the controller and the remote are both network identified.

4. Program the programmable buttons (Red, Green, Yellow, Blue, *, # or Custom 1/2/3) either based on the selected AV device or the selected room.

Based on AV device:

1. Click System Design.
2. Select an AV device to display the device's Properties page.



3. On the device's Properties page, select Code or Macro for the button you want to program, and then select a code or macro from the drop-down list.
4. Edit the Help text as needed, and then select Set.

Note: Help text describes custom programming to users in the House option in any of the Navigators.

Example: (1) In System Design view, select Disc Changer. (2) In the Red button, select Code. (3) From the drop-down list, select Subtitle. (4) Select the Set button to create a Subtitle button.

Based on room:

1. Click Programming.
2. Select a room in the Device Events pane.
3. Select the Commands radio button in the <Room> Events pane.
4. Use the drop-down menu to select a command or button (example, Blue Button or Custom 1/2/3).
5. In the Actions pane, build the script using the items to program the actions in the selected room when the selected command or button is used.

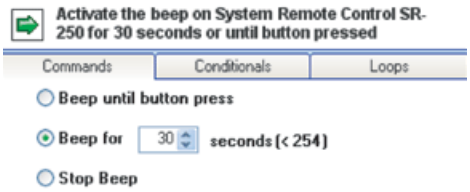
Program the SR-260 Paging feature

Configure the Beep paging feature for this remote version through programming. Use this feature to page a lost remote. You can program a keypad or a custom button to cause the remote to beep when pressed.

To program the paging feature for this system remote control:

1. In Composer Pro, click Programming.

2. Select the event that you want to use to start the page. Example: To select a keypad button press, first select the Keypad in the Device Event pane, and then select the button in Events.
3. In the Actions list, select System Remote Control SR-260.
4. In the Commands list, select an action below for the remote, and then drag the green arrow to the Script pane.



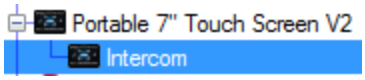
- Beep until button press—The remote beeps until you press one of its buttons.
- Beep for X seconds (<254)—The remote beeps until X seconds have elapsed or you press one of its buttons.
- Stop Beep—The remote stops beeping.

5. Click Execute.

Configuring touch screens

Configure the Intercom Proxy Properties for touch screen drivers compatible with the Communication agent

To be compatible with the Communication agent and Intercom Proxy in OS 2.7, touch screen drivers labeled (Communication) with an Intercom Proxy sub-driver are available in My Drivers in Composer. Drivers for the T3 touch screens also have the Intercom Proxy sub-driver. Intercom Properties for each touch screen are configured in this Intercom proxy portion of the driver.

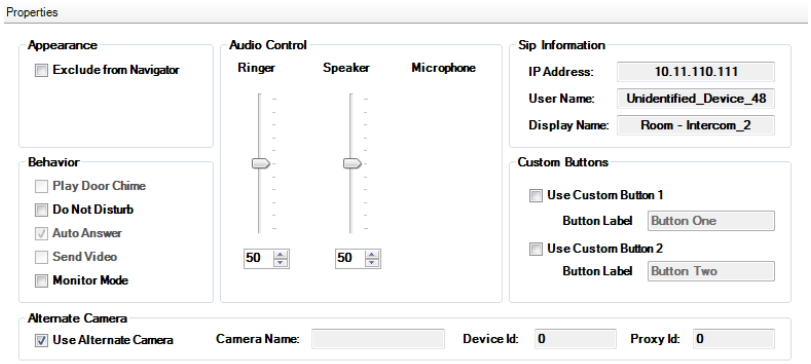


> Note: Existing touch screen drivers not marked “(Communication)” must be replaced to be compatible with the Communication agent. If the Intercom agent was previously added to the project, it must also be removed and the Communication agent replaces it. The Communication Agent Wizard automates this process for you. See “Communication Agent Wizard and Migration Process” on the Knowledgebase .

To configure the Intercom properties for a touch screen:

1. In System Design, expand the driver to display the Intercom proxy portion of the driver. If the driver does not have the Intercom proxy portion, replace the driver with one marked “(Communication).”

2. Select the Intercom portion of the driver, and the Properties pane appears.



3. Configure the Intercom properties for the touch screen:

Appearance:

- Check the box next to *Exclude from Navigator* if you do not want this device to show in the list of Intercom devices in Navigator.

Behavior:

- Play Door Chime—Check the box to enable this touchscreen to play the door chime when a call from a Door Station is received
- Do Not Disturb—When checked, this touch screen will not receive any Intercom calls
- Auto Answer—Check to cause the touch screen to automatically answer incoming calls.
- Send Video—Check to automatically send video in Intercom calls.
- Monitor Mode—Enables Monitor Mode which mutes the microphone and sets Auto Answer. This allows the screen to be used as a baby monitor, for example.

Audio Control:

- Set Ringer, Speaker, and Microphone (if available) levels.

Sip Information:

- Displays SIP information for the touch screen. The Display Name is the same as the name of the touch screen or door station driver.

Custom Buttons:

- Check to enable a Custom Button on the Intercom display. Define the name of the button in the *Button Label* field.

Alternate Camera:

- Use Alternate Camera—Check to enable an alternate camera view during Video Intercom calls. After you check the box, select the IP camera driver in your project to use from the *Choose System Items* window that opens. Click **OK** to exit.

Configure a 7" or 10" T3 Series In-Wall Touch Screen

Use the *System Design* and *Connections* views to add and configure this device.

To add and configure a T3 in-wall touch screen to a project:

1. Add the **C4-WALL7** or **C4-WALL10 In-Wall Touch Screen** driver to your project.
2. To configure the properties, click **System Design**.
3. In the project tree, select the **T3 7"** or **T3 10" In-Wall Touch Screen**.
4. View and change the properties in the *Properties* pane as needed.

Properties include:

- **Network Connection**—Reports the touch screen's current network connection type.
- **Back Light**—Use the arrows or type numbers to set the light level, then click **Set**.

Advanced properties include:

- **Enable Camera**—Allows you to enable or disable the camera.

Configure a 7" T3 Series Tabletop Touch Screen

Use the *System Design* and *Connections* views to add and configure this device.

To add and configure a T3 tabletop touch screen to a project:

1. Add the **C4-TT7 Tabletop Touch Screen** driver to your project.
2. To configure the properties, click **System Design**.
3. In the project tree, select the **T3 7" Tabletop Touch Screen**.
4. View and change the properties in the *Properties* pane as needed.

Properties include:

- **Network Connection**—Reports the touch screen's current network connection type.
- **Back Light**—Use the arrows or type numbers to set the light level, then click **Set.**

Advanced properties include:

- **Enable Camera**—Allows you to enable or disable the camera.

Configure a 7" In-Wall Touch Screen with Camera (C4-TW7CO)

Use the System Design and Connections views to add and configure the 7" In-Wall Touch Screen (C4-TW7CO) with a camera.

> Note: This particular touch screen includes full duplex point-to-point Intercom sessions, broadcast support to multiple touch screens, monitoring from the

> interface, and comes with a camera for video conferences to another device that supports cameras. An Intercom driver and agent must be added and configured in the Composer project before the customer can use the Intercom functions on their touch screen. See this section, the Control4 System User Guide, and “Example: Using the Intercom agent” for details.

> As of June 1, 2013, the HC-800 (C4-HC800-BL-1) and HC-250 (C4-HC250-BL-1) ship with included support for Intercom and the Control4 app. For controllers shipped before that time, you must purchase an Intercom and Control4 app license for consumers who want this feature. In either case, the license must be assigned and active on the consumer's account for the Intercom and Control4 app to function. See Managing Dealer Accounts on MyControl4 on the Knowledgebase for information about how to purchase and assign an Intercom license.

Scenarios

1. **The user wants to have full-duplex, room-to-room calling**. In this case, the Control4 system must have at least two 7" In-Wall Touch Screens installed.
2. **The user wants to broadcast a message without a response**. In this case, the Control4 system must have at least one 7" In-Wall Touch Screen installed.
3. **The user wants to broadcast a message with a response**. In this case, the Control4 system must have at least two 7" In-Wall Touch Screens installed.
4. **The user wants to monitor the sounds in** another **room**. In this case, the Control4 system must have at least two 7" In-Wall Touch Screens installed.
5. **The user wants to have a video conference with others**. In this case, the Control4 system must have at least two devices that support Video Intercom (7” In-Wall Touch Screen with Camera, 7” Portable Touch Screen with Camera, or Door Station - Exterior).

Prerequisites

1. Ensure that the 7" In-Wall Touch Screen (C4-TW7CO-XX) is installed as directed in the Control4 7" In-Wall Touch Screen Installation Guide available on the Dealer Portal.
2. Ensure that your project has a Control4 controller added and identified in the Control4 system.

To add and configure a 7" In-Wall Touch Screen with Camera:

1. To add the driver and identify the device see “ How to add devices to a project.” Ensure that the **In-Wall 7" Touch Screen V2** driver is added to the project tree.

Note: If this touch screen will be providing audio output, the touch screen needs to be connected as an Audio end point for the room.

2. (Optional) To configure the properties, click **System Design**.
3. In the project tree, select the **7" Touch Screen** object.

4. View and change the properties in the Properties pane as needed.

Modifiable properties include:

Backlight Level–Use the up or down arrows to set the light level of the backlight. You can change the brightness of the backlight with this option by percentage, so 100% is On at full brightness and 0% is Off. Click **Set** to save your changes.

Backlight Preset Level–Lets you set the default backlight level. If you ever restart or power the touch screen again, this is the backlight level it would go to. Click **Set** to save your changes.

WiFi Signal Strength (%)–If Wi-Fi is used this shows the strength of the signal. Ensure that the signal is strong and robust if you use the Door Station for Wi-Fi. We recommend using Ethernet rather than Wi-Fi for best results.

Notes: (1) Video Intercom usage. Although this device supports b/g/n, 802.11 b is not recommended for Video Intercom. (2) Wireless-n is recommended for Video Intercom. See "Wireless Network Limitations" below.

Refresh–Click to refresh the signal strength values.

Enable Camera– Checked by default. When checked, this allows the device to use the camera for Video Intercom in addition to audio.

Wireless Network Limitations—Many Wi-Fi Access Points handle Multicasts (Wi-Fi simultaneously sent to multiple devices, for example, when the 7" In-Wall Touch Screen with Camera broadcasts video to all stations) by slowing down transmission speed to the 1 Mb basic rate. This can cause overall Wi-Fi congestion in the Wi-Fi network during the broadcast. Video Intercom response times and images may degrade at each device.

If a home requires a large number of Wi-Fi Video Intercom devices, ensure that you have a robust Wi-Fi network (possibly consisting of multiple access points).

Configure a 7" Portable Touch Screen with Camera (C4-TSMC7-EN)

Use the System Design and Connections views to add and configure this device.

Prerequisites

1. Ensure that the 7" Portable Touch Screen with Camera (C4-TSMC7-EN) is installed as directed in the Control4 7" Portable Touch Screen with Camera Setup Guide available on the Dealer Portal.

Note: If you want to install the new 7" Portable Touch Screen with Camera, ensure that the part number says "C4-TSMC7-EN" when you add the driver.

2. Ensure that your project has a Control4 controller added and identified in the Control4 system.

To add and configure a 7" Portable Touch Screen with Camera:

1. To add the driver and identify the device see " How to add devices to a project." Ensure that you add the driver **Portable 7" Touch Screen V2** to the project tree.

Note: If this touch screen will be providing audio output, the touch screen needs to be connected as an audio end point for the room.

2. (Optional) To configure the properties, click System Design.
3. In the project tree, select the Portable 7" Touch Screen V2 object.

4. View and change the properties in the Properties pane.

Modifiable properties include:

Backlight Level–Use the up or down arrows to set the light level of the backlight. You can change the brightness of the backlight with this option by percentage, so 100% is On at full brightness and 0% is Off. Click Set to save.

WiFi Signal Strength–If using Wi-Fi, shows you the strength of your wireless signal.

Notes: (1) Video Intercom. Although this device supports b/g/n, 802.11b is not supported for Video Intercom use. (2) Wireless-n is recommended for Video Intercom. See "Wireless Network Limitations" below.

Enable Camera–Check to use the camera with this device for video intercom.

Conservative AEC (Acoustic Echo Cancellation)–When selected, this can reduce excessive feedback, squealing, or other audio interference during intercom use. This setting does not reduce feedback noise caused by two touch screens being too close to each other. Use this option if other measures (such as increasing intercom distances and reducing volume) have not sufficiently reduced feedback.

Wireless Network Limitations

Many Wi-Fi Access Points handle Multicasts (Wi-Fi simultaneously sent to multiple devices, for example, when the T3 touch screenbroadcasts video to all stations) by slowing down transmission speed to the 1 Mb basic rate. This can cause overall Wi-Fi congestion in the Wi-Fi network during the broadcast. Video Intercom response times and images may degrade at each device.

If a home requires a large number of Wi-Fi Video Intercom devices, ensure that you have a robust Wi-Fi network (possibly consisting of multiple access points).

Configure a 5" or 7" In-Wall Touch Screen (C4-TSWMC5 or C4-TSWMC7)

Use the System Design and Connections views to add and configure this device.

> Note: This touch screen includes full duplex point-to-point Intercom sessions, broadcast support to multiple touch screens, and monitoring from the interface.

As of June 1, 2013, the HC-800 (C4-HC800-BL-1) and HC-250 (C4-HC250-BL-1) ship with included support for Intercom and the Control4 app. For controllers shipped before that time, you must purchase an Intercom and Control4 app license for consumers who want this feature. In either case, the license must be assigned and active on the consumer's account for the Intercom and the Control4 app to function. See this section, the Control4 System User Guide, and "Example: Using the Intercom agent" for details. See Managing Dealer Accounts on MyControl4 on the Knowledgebase for information about how to purchase and assign an Intercom license.

Scenarios

1. **User wants to have full-duplex, room-to-room calling**. In this case, the Control4 system must have at least two 5" or 7" In-Wall Touch Screens installed.
2. **User wants to broadcast a message without a response**. In this case, the Control4 system must have at least one 5" or 7" In-Wall Touch Screen installed.
3. **User wants to broadcast a message with a response**. In this case, the Control4 system must have at least two 5" or 7" In-Wall Touch Screens installed.

4. **User wants to monitor the sounds in another room**. In this case, the Control4 system must have at least two 5" or 7" In-Wall Touch Screens installed.

Prerequisites

- Ensure that the 5" In-Wall Touch Screen (C4-TSWMC5) or 7" In-Wall Touch Screen (C4-TSWMC7) is installed as directed in the *Control4* 5" and 7" In-Wall Touch Screen Installation Guide available on the Dealer Portal.
- Ensure that your project has a Control4 controller added and identified in the Control4 system.

To add and configure a 5" or 7" In-Wall Touch Screen:

1. To add the driver and identify the device see " How to add devices to a project." Ensure that the **IE 5" Touch Screen** or **IE 7" Touch Screen** driver is added to the project tree.

Note**:** If this touch screen will be providing audio output, the touch screen needs to be connected as an Audio End Point for the room.

2. (Optional) To configure the properties, click **System Design**.
3. In the project tree, select the **IE 5" Touch Screen** or **IE 7" Touch Screen** object.
4. View and change the properties in the Properties pane as needed.

Modifiable properties include:

- **Backlight Level**—Use the up or down arrows to set the light level of the backlight. You can change the brightness of the backlight with this option by percentage, so 100% is On at full brightness and 0% is Off.
- **Backlight Preset Level**—Lets you set the default backlight level. If you ever restart or power the touch screen again, this is the backlight level it would go to. Click **Set** to save your changes.
- **Button Animation Enabled**—Lets you enable animated buttons for a 3D effect.
- **Volume Control Follows Selected**—Lets you select other rooms aside from the one that contains the touch screen, and change its volume when leaving the room.
- **Conservative AEC** (Acoustic Echo Cancellation)—When selected, this can reduce excessive feedback, squealing, or other audio interference during intercom use. This setting does *not* reduce feedback noise caused by two touch screens being too close to each other. Use this option if other measures (such as increasing intercom distances and reducing volume) have not sufficiently reduced feedback.

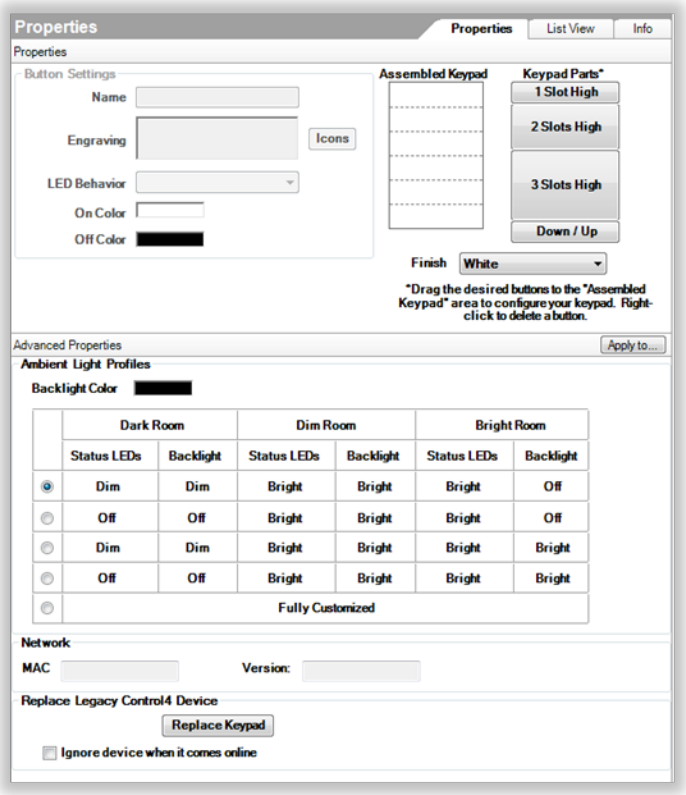
Keypads

Configure a Configurable Keypad

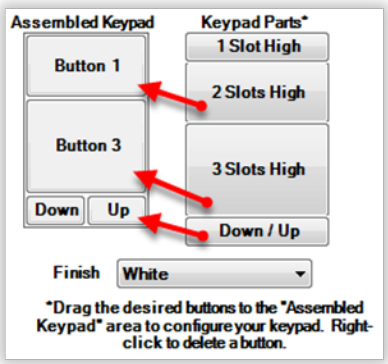
This applies to next generation lighting (compatible with OS 2.5 and later).

To configure a Configurable Keypad:

1. Add the keypad to your project tree, then identify it. For instructions, see "How to add devices to a project."
2. In the System Design view, select the device. The device's Properties tab opens.

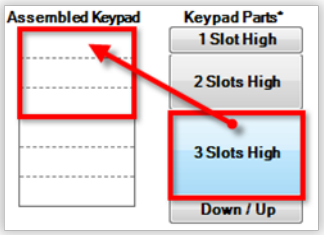


3. In the Button Settings area, click and drag the appropriate **Keypad Parts** items to the Assembled Keypad example until the example matches the desired keypad configuration.



Tips:

- The Down/Up buttons can be placed only in the bottom slot and cannot have custom engraving.
- Drag the desired button to the top slot of the range where you want the button positioned.



4. Configure the settings described below.
5. Click **Apply to...** to apply the changes to other lighting devices.

- If you entered text for custom engraving, go to “Ordering keycap engraving” in this document.

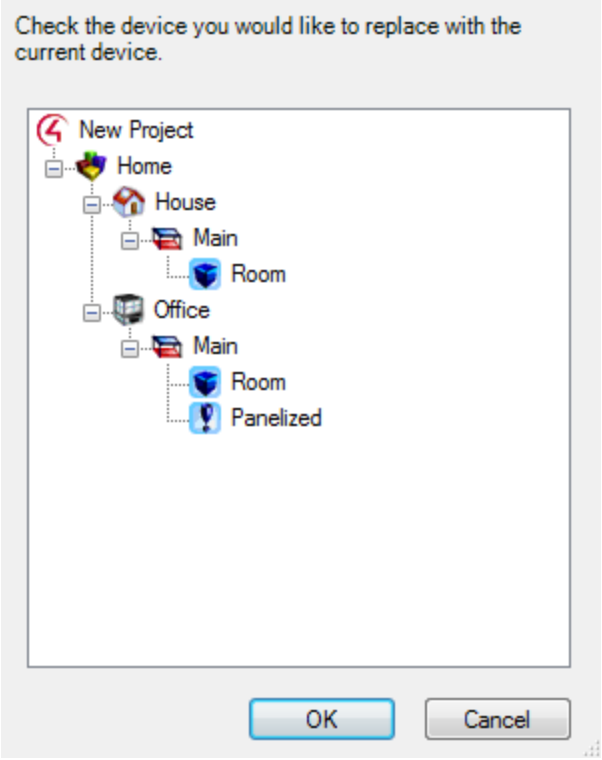
Device settings for Configurable Keypads

Properties

- Button Settings
- **Name**—The name of the button (used for defining its connections to other devices or events within Composer Pro).
- **Engraving**—Text that you want printed onto the buttons. For more information, see “Ignore device when it comes online—When selected, this checkbox tells the system to ignore the older device when it comes back online.
- ” below.
- **Icons**—Icons that you want printed onto the buttons. To add an icon to the Engraving text box, click **Icons**, then double-click the icon to add.
- LED Behavior
- **Follow Bound Device**—LED behavior reflects the state of the device the button is bound to.
- **Push/Release**—LED behavior reflects the button state (pressed or released).
- **Push Color**—Sets the LED color while the button is pressed.
- **Release Color**— Sets the LED color while the button is released.
- **Finish**—Color of the buttons.

Advanced Properties

- Ambient Light Profiles
- Select a preset brightness profile for the keypad backlight and LEDs that changes their brightness according to the room's ambient light. You can also select Fully Customized and manually set each brightness level according to ambient lighting.
- **Backlight Color—**Sets the keypad's backlight color. If you don't want a keypad backlight, keep the default setting (black).
- **Network**—(wireless keypads only) Displays the MAC address and firmware version of the selected device. These fields are not editable.
- Replace Legacy Control4 Device
- **Replace Keypad**—Replaces a legacy device in your project with this new device. After you configure this new device, click this button, select the older device in the mini project tree that opens, then click **OK**.



- **Ignore device when it comes online**—When selected, this checkbox tells the system to ignore the older device when it comes back online.

Ordering keycap engraving

If you entered text to be engraved onto keycaps, you need to special order the custom engraving. You can order in three ways:

United States and Canada:

- Upload the engraving order file on the Dealer Portal (easiest for most orders).
- Enter the information on the Dealer Portal (good for small orders of individual keycaps).

All other regions:

- Send the engraving order file to your ISA.

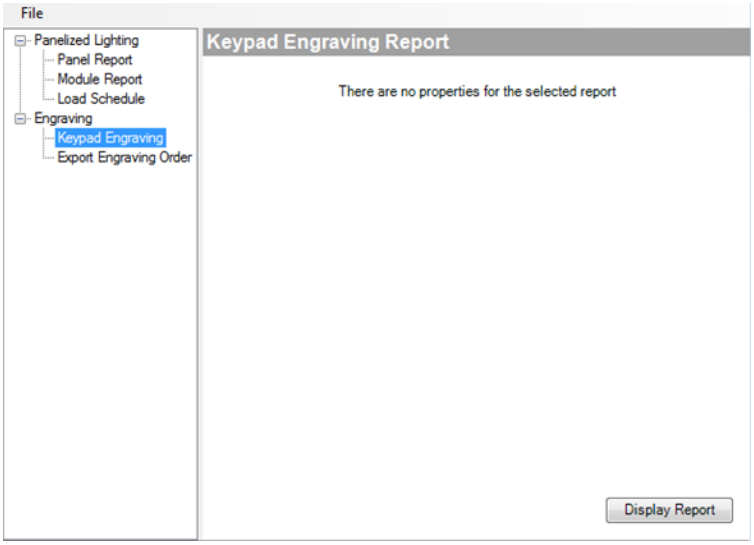
When your custom engraved keycaps arrive, install the keycaps according to the *Keypad Buttons Installation Guide*, then make sure that the keypad configuration matches the device properties in Composer Pro.

To create an engraving order file:

1. In Composer Pro, make sure that the text and icons for each keycap have been entered on the device Properties pages exactly as you want them to appear. Pay special attention to spelling.

   Tip: In a keypad's Button Settings properties, the button Name is used only for defining connections within Composer Pro. For engraving, make sure that you enter text in the Engraving fields.

2. Click **Tools**, then **Reports**.
3. Click **Keypad Engraving**, then click **Display Report**.



4. Print the report and review with your customer to make sure that all engraving meets the customer's expectations.
5. Click **Export Engraving Order**, then click **Export Order File**.
6. Specify a location to store the file, then click **Save**.

To upload the engraving report file on the Dealer Portal:

1. Access the Dealer Portal at dealer.control4.com.
2. Go to **Products** > **Lighting** > **Engraving**.
3. Click **Upload Composer File**. The file upload page opens.

4. Select the file you created above, then click **OK**.
5. Complete the order process.

To enter engraving information on the Dealer Portal:

1. While building the system, take note of the text and icons you want to be engraved on each keycap. Pay special attention to spelling.
2. Access the Dealer Portal at dealer.control4.com.
3. Go to **Products** > **Lighting** > **Engraving**.
4. Click **Single Keycap Engraving**. The configuration page opens.
5. Select the type of keycap, then type the text for the engraving.
6. Complete the order process.

To send the engraving report file to your ISA (international customers only):

1. Create an email message to send to your ISA.
2. Attach the engraving report file you created above, then send the message.
3. Follow up with your ISA regarding order status and schedule.

Configuring lights for 3-way

Rather than creating programming to tie lighting variables and Control4 3-way lights together, you can use a simplified lighting configuration to set up lighting control. In the Connections view, you can configure global changes in Composer Pro Properties, and configure 3-way lights by dragging the lighting and control connections.

The Push and Release features available on the keypads let you dim lights like a dimmer.

> Tip: To find out how to configure global changes for lights and other devices, see "Accessing properties from the project treeAccessing properties from the project tree" in Composer Pro Getting Started.

Configuring a 2-Button Keypad as a 3-way light

Use the Connections view to configure a 3-way light using a 2-button keypad.

> Example: Configure a 2-Button Keypad to turn On (Top button) and turn Off (Bottom button) a dimmer, and to use the Push/Release function available on the 2-Button Keypad to dim a light.

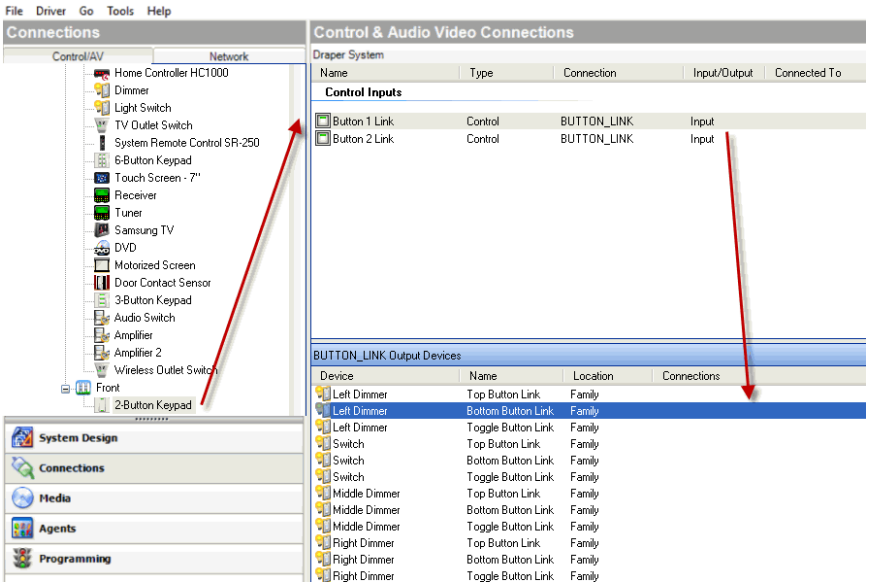
Prerequisites

1. Ensure that your controller hardware is added and identified to the Control4 system.
2. Ensure that you have a 2-Button Keypad and dimmer (or switch) added and identified to the project.

To configure a 2-button keypad as a 3-way light:

1. In the project tree, select the **2-Button Keypad**.
2. In the Control & Audio Video Connections pane under Control Inputs, click the **Button 1 Link** connection, and drag it to the dimmer's **Top Button Link** in the bottom pane.

3. Click the **Button 2 Link** connection, and drag it to the dimmer's **Bottom Button Link** in the bottom pane.



4. Test to ensure that the 2-Button Keypad turns the light on and off, and that the Push/Release functions dim the light.

Configuring a 3-Button Keypad to control a 3-way light

Use the Composer Pro Connections view to configure a 3-Button Keypad to use a toggle for a 3-way light.

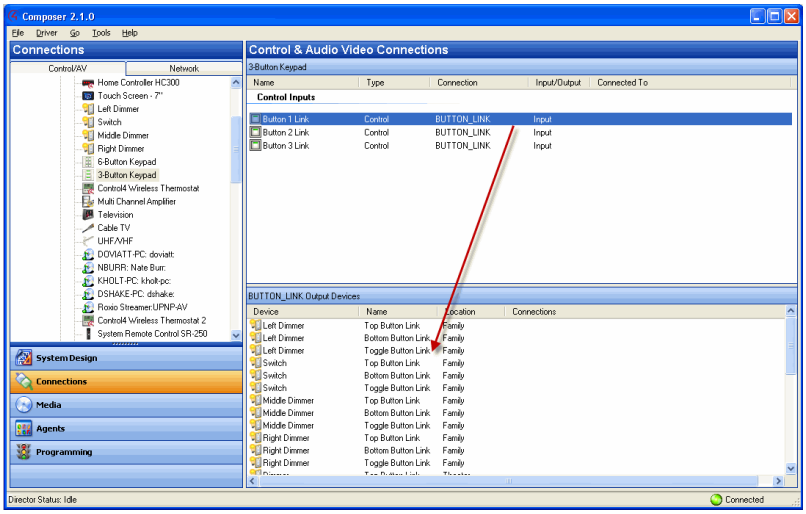
> Example: Configure a 3-Button Keypad to toggle the light On and Off. Use Push and Release to dim and brighten the light as desired.

Prerequisites

1. Ensure that your controller hardware is configured properly, and that the 3-Button Keypad and dimmer (or switch) are added to the project and identified.
2. Ensure that you have a 3-Button Keypad added and identified to the project.

To configure a button on a 3-Button Keypad to control a 3-way light:

1. In the project tree, select the **3-Button Keypad**.
2. In the Control & Audio Video Connections pane, drag the **Button 1 Link** connection from the top list over the light's **Toggle Button Link** in the bottom list.



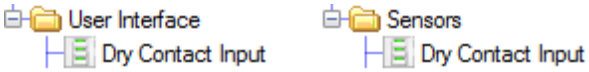
3. Test to ensure that the 3-Button Keypad turns the light On and Off, and that the Push/Release functions dim the light.

Configure a Dry Contact Input Module

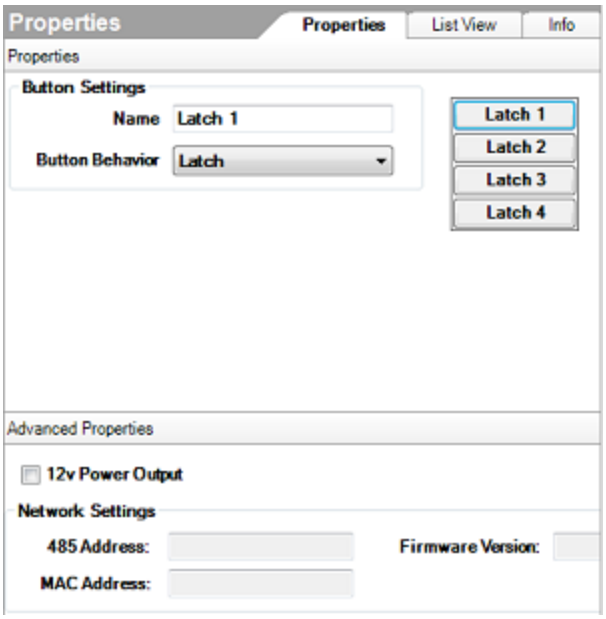
The Dry Contact Input Module (C4-DCIM4) appears in the *User Interface* and the *Sensors* sections of the *My Drivers* list.

To configure a Dry Contact Input Module:

1. Add the Dry Contact Input Module to your project tree, then identify it. When you first add it to the project tree, its default label is “Keypad.”



2. In the *System Design* view, select the device. The device's *Properties* tab opens.



Device settings for Dry Contact Input Module

Properties

- Button Settings
- **Name**—The name of the selected button (used for defining its connections to other devices or events within Composer Pro). After clicking the appropriate button on the right, you can change this name.
- **Button Behavior**—The type of connection that the physical button or mechanism provides.
- **Momentary**—Closure is maintained only while the button is being pressed.
- **Latch**—Closure is maintained indefinitely until reopened.
- **Contact Sensor**—Contact is made by a secondary device that triggers a closure (like the contact sensor on a home controller).

Advanced Properties

- **12v Power Output**—Enables 12V (up to 30mA) power to the connected device (for example, a motion sensor).
- Network Settings
- 485 Address
- MAC Address
- Firmware Version

Configure mobile devices or PCs/tablets as Navigators

Use the Control4 apps to configure an iPod Touch, iPad, iPhone, Android, or PC device for use as a touch screen in a Control4 system.

Ensure that the license and correct apps are installed.

Follow the instructions in the documents mentioned previously to set up the apps for these devices. You don't need to do anything in Composer Pro.

Configure a Door Station

Use the System Design and Connections views to add and configure a Door Station.

Prerequisites

- Ensure that the Door Station is installed as directed in the Control4 Door Station – Exterior Setup Guide or Door Station-Interior Setup Guide available on the Dealer Portal.
- Ensure that your project has a Control4 controller added and identified in the Control4 system.

To add and configure a Door Station:

1. To add the driver and identify the device see " How to add devices to a project." Ensure that the **Door Station** driver is added to the project tree.
2. (Optional) To configure the properties, click **System Design**.
3. In the project tree, select the **Door Station** object. Both Door Station models use the same driver.
4. View and change the properties in the Properties pane as needed.

   Modifiable properties include:

   - **Reboot**—Click **Reboot** to reboot the Door Station.
   - **WiFi Signal Strength (%)**—If Wi-Fi is used this shows the strength of the signal. Ensure that the signal is strong and robust if you use the Door Station for Wi-Fi. We recommend using Ethernet rather than Wi-Fi for best results.

     Notes: (1) Video Intercom. Although this device supports b/g/n, 802.11 b is not supported for video intercom use. (2) Wireless-n is recommended for video intercom.
   - **Refresh**—Click to refresh the signal strength values.
   - **Select Intercom Group**—If a group has been created, use the drop-down list to select the group. The default is **All**.

   Door Station Options:

   - **Enable Camera**—Checked by default. When checked, this allows the device to use the camera for video intercom in addition to audio.

- **Door Bell Ring**—Checked by default. When checked, this allows the device to be used with the doorbell. This can be disabled if programming is used; for example, if you want a different sound or lights to come on.
- Door Bell Button:
- **Forking Call**—Configures the Door Bell Button on the Door Station to perform a forking call. Use this option with T3 series touch screens in the project.
- **Broadcast Call**—Configures the Door Bell Button on the Door Station to perform a broadcast call. Use this option with legacy touchscreens in the project.
- **Programming Only**— Configures the Door Bell Button on the Door Station to not automatically make an intercom call. You can program an announcement or other types of calls in the Programming view when the button is pressed.
- **Enable Button Backlight**—Checked by default. When checked, this turns on the button's backlight. If you don't want to use the backlight, uncheck this option. Tip: This option can be used in programming to turn on the backlight at night.

Note: The Door Station driver includes an Intercom Proxy sub-driver with OS 2.7. See "Configure the Intercom Proxy Properties for touch screen drivers compatible with the Communication agent."

Wireless Network Limitations

Many Wi-Fi Access Points handle Multicasts (Wi-Fi simultaneously sent to multiple devices, for example, when the Door Station broadcasts video to all stations) by slowing down transmission speed to the 1 Mb basic rate. This can cause overall Wi-Fi congestion in the Wi-Fi network during the broadcast. Video intercom response times and images may degrade at each device.

If a home requires a large number of Wi-Fi Video Intercom devices, ensure that you have a robust Wi-Fi network (possibly consisting of multiple access points).

Configuring AV devices

Configuring audio-video (AV) devices means that you want to 'identify' or make the device connection to the Control4 system so the devices communicate with the controller and other devices in the system. See “ How to add devices to a project” to add and identify the device. Also see “ Overview of media management”.

Configure a Triad Audio Matrix Switch

Use the System Design and Connections views to identify a Triad 8x8 or 24x24 Audio Matrix Switch (TS-AMS8 or TS-AMS24) to the Control4 system. These matrix switches switch up to 8/24 input sources and up to 8/24 outputs.

Ensure that the matrix switch is installed as directed in the Triad Audio Matrix Switch Installation Guide.

To add the driver and identify a Triad Audio Matrix Switch:

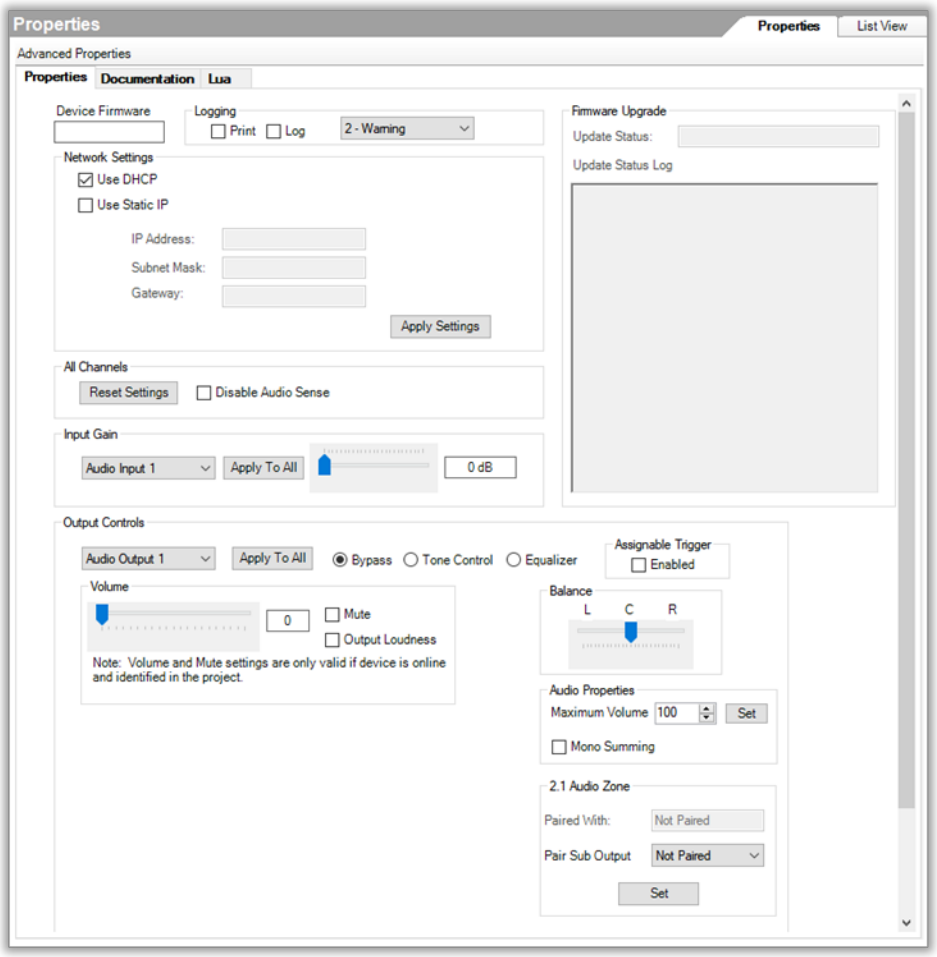
1. Configure the IP settings with System Manager, if required. By default, the audio matrix switch will be configured to DHCP.
2. In the *System Design* view, click on the **Discovered** tab.
3. Double-click on the matrix switch in the list to add it to the system and identify it.

> Note: You can set this device to either DHCP Client (default) or a client that uses Static IP.

To configure the Triad Audio Matrix Switch driver:

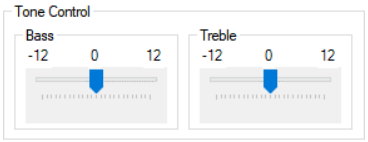
1. Install and set up the audio matrix switch and any associated hardware according to each device’s installation guide.

2. Modify the properties in the *Properties* pane:



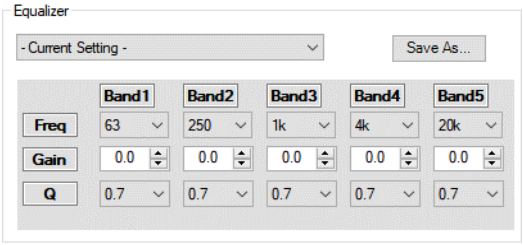
- **Device Firmware**—The firmware version of the switch. Not editable.
- **Logging—**Select the logging behavior and level for the matrix switch driver. Print sends log events to the LUA tab. Log sends log events to a log file on the controller.
- All Channels
- **Reset Settings**—Resets all channel input and output settings to factory defaults.
- **Disable Audio Sense**—Disables audio sensing on the matrix switch inputs.
- Input Gain
- Select an input and adjust the gain or select the gain and click **Apply To All.**
- **Output Controls—**Select one of the outputs to adjust settings for and then adjust settings for that zone or click **Apply To All**.

- **Audio Output**—Choose **Bypass, Tone Control,** or **Equalizer** to adjust settings for the chosen Audio Output.
- **Bypass**—No equalizer settings are applied to the output by the matrix switch.
- **Tone Control**—Enables *Bass* and *Treble* settings for the output.



Move the slider to adjust the Bass and Treble settings.

- **Equalizer**—Enables five-band parametric EQ settings for the output.



Choose a preset or define your own EQ settings. Save your EQ settings using the **Save As...** button to be able to recall and apply them to another output.

Tip: Customized EQ settings for many Triad speakers are already built in and saved as presets into the Triad Audio Matrix Switch driver.

- **Volume**—Sets the volume for the selected output.
- **Mute**—Sets the mute for the selected output.
- **Output Loudness**— Turns on the Loudness setting for the selected output.
- **Balance**—Sets the L/R speaker balance for the selected output.
- **Assignable Trigger**—Assigns the assignable trigger to activate when the selected output is active.
- **Audio Properties**—Assign a maximum volume to the selected output and click **Set**. The output can also function as a mono sum of the source. This setting combines the L + R signals and outputs the mono-summed signal on both outputs.
- **2.1 Audio Zone**—Assigns two outputs to act as a single zone and mono-sums the source and sends the signal on the output selected in **Pair Sub Output**. Choose the output to pair with the output selected (at the top of the *Output Controls* section) and click **Set**.

Configure a Triad Power Amplifier

Use the System Design and Connections views to add a Triad Power Amplifier (TS-PAMP8-100) to the Control4 system.

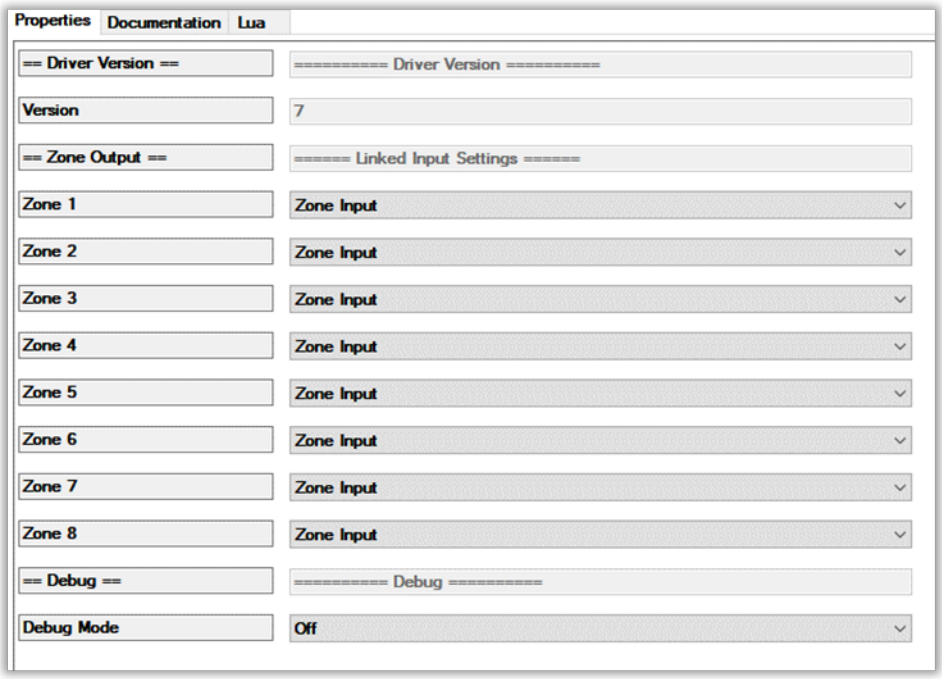
Ensure that the amplifier is installed as directed in the Triad 8-Zone Power Amplifier Installation Guide.

To add the driver for a Triad Power Amplfiier:

1. In the *System Design* view, click on the **My Drivers** tab.
2. Double-click on the Triad 8-Zone Power Amplifier in the list Audio/Video folder to add the driver to the system. This driver does not need to be identified

To configure the amplifier driver:

1. Install and set up the audio matrix switch and any associated hardware according to each device's installation guide.
2. Modify the properties in the *Properties* pane:



- **Zone Inputs (1-8)**
- Select **Zone Input** or **Global Input** to configure the input settings. To link an input to the Global Input, the Link to Global Input dip switch must be enabled on the back of the amplifier.

Configure a Triad One Streaming Amplifier

Use the System Design and Connections views to identify a Triad One Streaming Amplifier (TS-SAMP1-100) to the Control4 system. The Triad One can power a single analog zone and act as a streaming audio output for Control4 digital media.

Ensure that the Triad One is installed as directed in the Triad One Installation Guide.

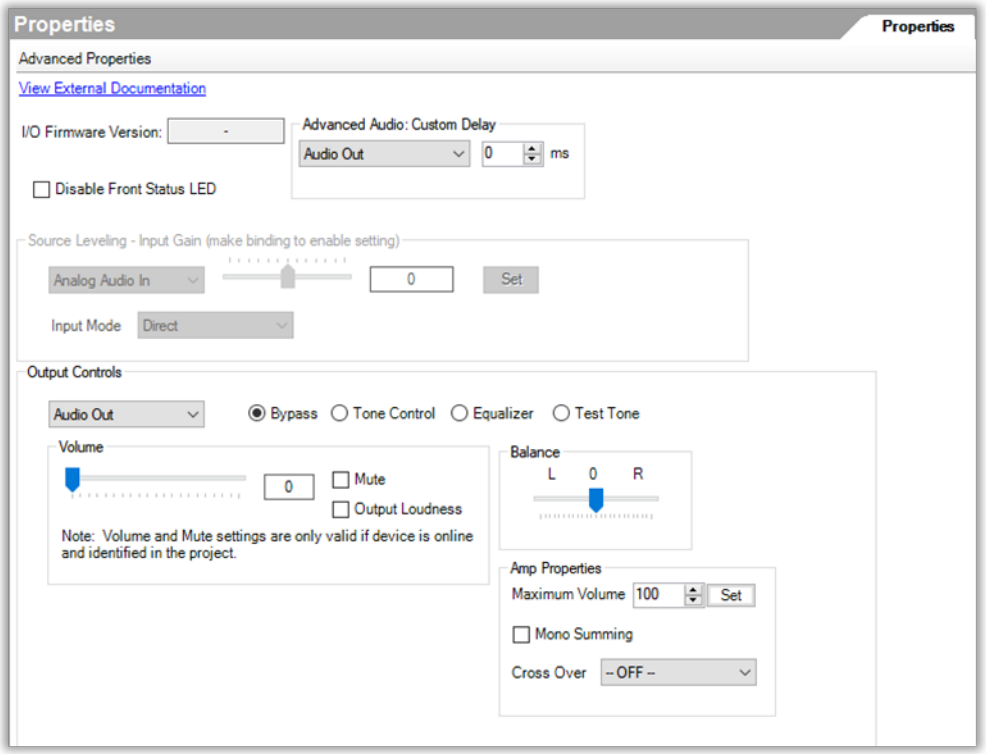
To add the driver and identify a Triad One:

1. Configure the IP settings (or Wi-Fi settings) with System Manager, if required. By default, the Triad One will be configured to DHCP
2. In the *System Design* view, click on the **Discovered** tab.
3. Double-click on the Triad One in the list to add it to the system and identify it.

> Note: You can set this device to either DHCP Client (default) or a client that uses Static IP.

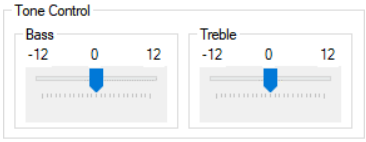
To configure the Triad One driver:

1. Install and set up the Triad One and any associated hardware according to each device's installation guide.
2. Modify the properties in the *Properties* pane:



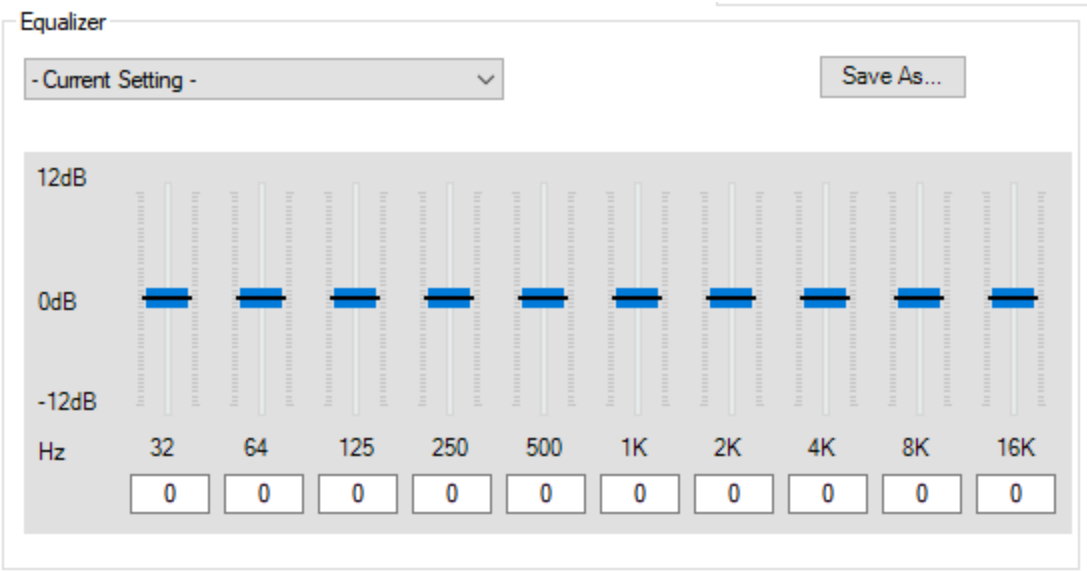
- **I/O Firmware Version**—The firmware version of the switch. Not editable.
- **Advanced Audio: Custom Delay**—This field provides the option to adjust streaming audio output timing to better match other zones.
- **Disable Front Status LED**—Check this box to turn off the status LED on the front of the Triad One.

- Source Leveling - Input Gain
- Select an input and adjust the gain, click **Set** to save.
- Change the *Input Mode* to **Direct**, **Stream**, or **Direct+Stream**. See Input Mode section below for additional details.
- **Output Controls**—Select one of the outputs to adjust settings for and then adjust settings for that zone or click **Apply To All**.
- **Audio Output**—Choose **Bypass (DSP Off), Tone Control, Equalizer**, or **Test Tone** to adjust settings for the Audio Output.
- **Bypass**—No equalizer settings are applied to the output by the matrix switch.
- **Tone Control**—Enables *Bass* and *Treble* settings for the output.



Move the slider to adjust the Bass and Treble settings.

- **Equalizer**—Enables ten-band EQ settings for the output.



Choose a preset or define your own EQ settings. Save your EQ settings using the **Save As...** button to be able to recall and apply them to another output.

Tip: Customized EQ settings for many Triad speakers are already built in and saved as presets into the Triad One driver.

- **Amp Properties**—Assign a maximum volume to the selected output and click **Set**. The output can also function as a mono sum of the source. This settings combines the L + R signals and outputs the mono-summed signal on both outputs.
- **Cross Over**—Sets a low-pass filter on the subwoofer out of the Triad One to **80**, **90**, **100**, **110**, **125**, or **140**.

Input Mode

This field determines how each source input is routed, either locally to the Triad One and/or over the IP network. Select an input from the drop down field above before adjusting this setting. Depending on the installation use case, there are three options.

Direct

Select this option if the source will only be played back locally. The local input is routed directly to the local output(s) of the Triad One with no delay. This setting is best for video sources, where audio must be in sync with video.

Stream

Select this option if the source should be played back locally AND in other rooms. The input is encoded and streamed, with delay, to the local output(s) of the Triad One AND to other Triad One units or EA controller audio outputs on the IP network. Selecting this option ensures audio synchronization across all devices, local or remote. This setting is not recommended for video sources.

Direct + Stream

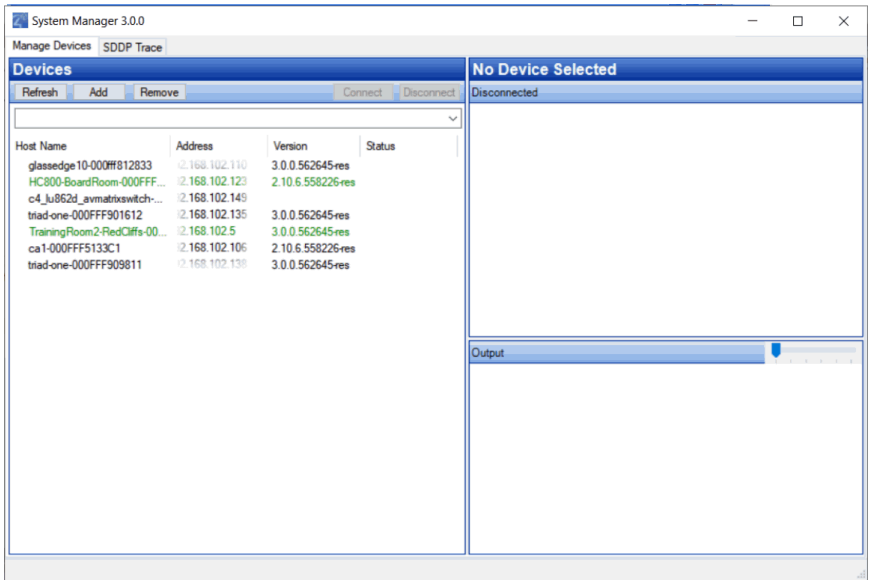
Select this option if the audio must be played back locally with no delay (i.e. video source), but also needs to be available as a source in other rooms. The local input is routed to the local output of the Triad One, with no delay AND is streamed to other Triad One or EA Controller audio outputs on the IP network. Note: This option will cause audio to be out of sync between the local room and other rooms. Direct + Stream mode should only be used when the Triad One is out of earshot of other rooms that are playing the same source.

> Note: When the Triad One's analog or digital input is encoded (streamed) there will be a 2-4 second input-to-output audio delay.

Configure Triad One for Wi-Fi

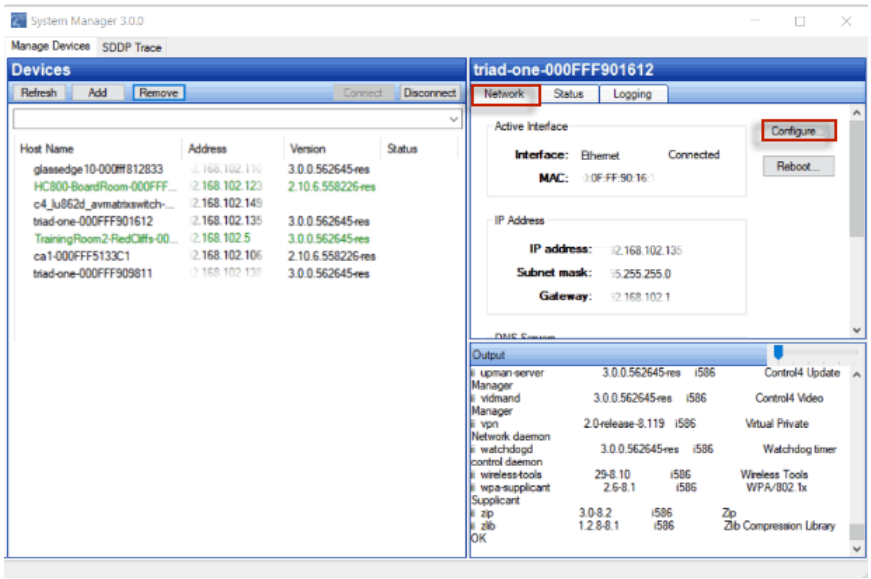
To configure a Triad One for Wi-Fi use:

1. Start Composer Pro and connect to **Director on Local Network**.
2. In the **Tools** menu, select **System Manager**.
3. In the Devices pane, select the **network address** of the device you want to configure, and click **Connect**.



Tip: If the device's network address is not on this list, click **Refresh**. If it still does not appear, click **Add** to enter it manually. If you don't know the network address, look in the **Tools** menu > **Network Tools**.

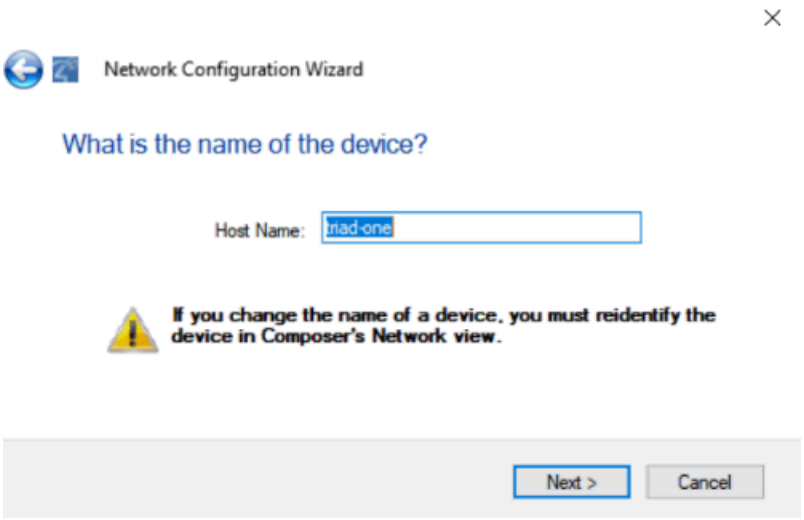
4. Click the **Network** tab, and click **Configure**.



5. Click **Next** when a Network Configuration wizard dialog appears.
6. If desired, enter a new name for the device, and click **Next**.

> IMPORTANT TIP**!** If the device has already been identified on the Control4 system, and you change the name (on this wizard screen), identify the device again.

> Until it is identified again, the controller cannot recognize the name and will not be able to communicate with the device.



7. Select the type of network you want the device to be a part of, and click **Next**.

   > Example: Wireless network.

8. Select the method to obtain an IP address, such as **DHCP** (first option) or **Static IP** (second option) , and click **Next**.

   > Example: Obtain an IP address automatically using DHCP.

9. Select the method to obtain the DNS server address automatically, and click **Next**.

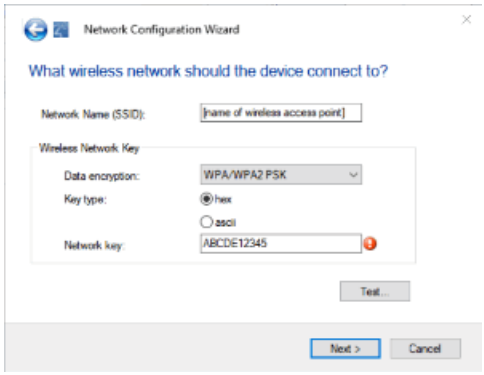
   > Example: Obtain the DNS server address automatically.

10. Enter the **Network Name** (SSID) of your wireless access point.
11. Use the pull-down menu to indicate your Data encryption preference (**64** or **128** bit).
12. Select the Key type (**hex** or **ASCII**).
13. Enter your **Network Key** (WEP Key), and click **Test**.
    - **Hex**—64 bit (10 digits) or 128 bit (26 digits)—acceptable values 0 - 9, A- F
    - **ASCII**—64 bit (5 digits) or 128 bit (13 digits)—acceptable values ASCII characters

    Example:

    - **Network Name** (SSID)—<name of wireless access point>

- **Data encryption**—wep64
- **Key Type**—hex
- **Network Key** (in hex)—ABCDE12345.



Note: If the hex Network Key you insert is not valid, a screen with a red exclamation point comes up. In this case, enter your key again.

14. Click **Test** to test your network connection. If it fails, follow the on-screen instructions.
15. Click **Finish** when you come to the "Congratulations! You have successfully changed your network configuration" screen.
16. At this time, the system reboots. Do not disconnect any temporary Ethernet cables until the device has successfully rebooted and is powered on.
17. If you are using the Wi-Fi to communicate to your controller, disconnect the Ethernet cable.

Configure an Audio Matrix Switch

Use the System Design and Connections views to identify an Audio Matrix Switch V3 (C4-16ZAMS-V3-B) to the Control4 system. This device switches up to 16 input sources and up to 16 outputs.

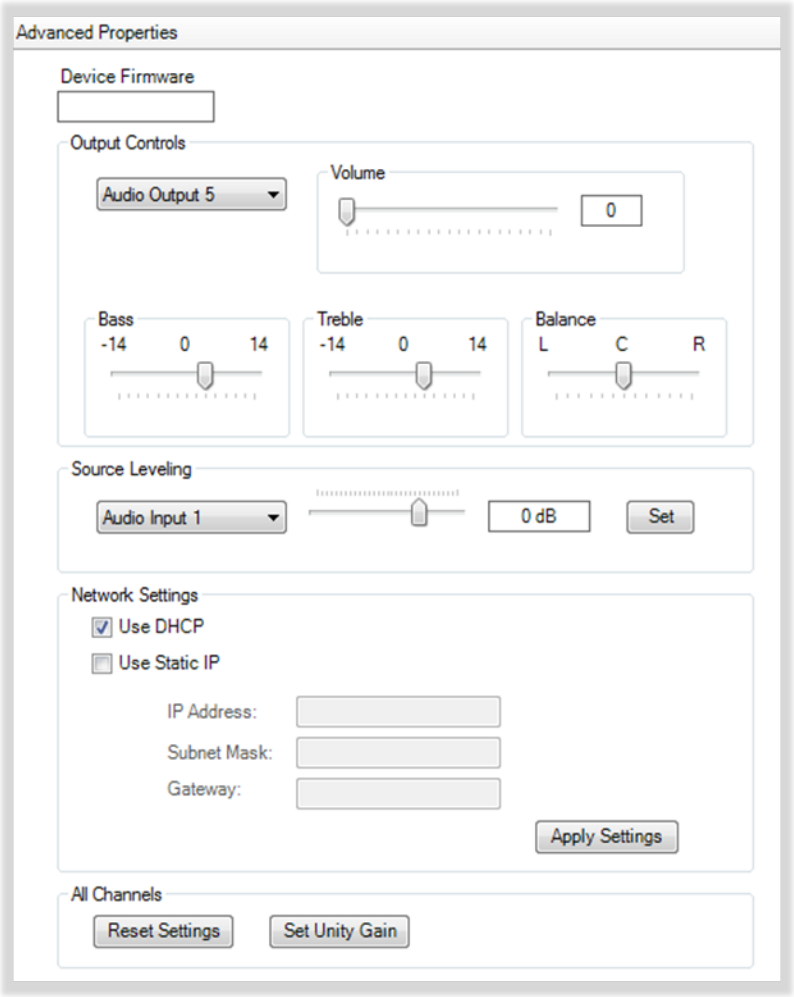
Ensure that the matrix switch is installed as directed in the Audio Matrix Switch Installation and Setup Guide.

To add the driver and identify a

> Note: You can set this device to either DHCP Client (default) or a client that uses Static IP.

To add and configure an Audio Matrix Switch:

1. Install and set up the audio matrix switch and any associated hardware according to each device's installation guide.
2. To add the driver to your project and identify the device, see " How to add devices to a project."
3. Modify the properties in the Properties pane:



- **Device Firmware**—The firmware version of the switch. Not editable.
- Output Controls
- **Audio Output**—Select one of the 16 outputs to adjust settings for.
- **Volume**—Sets the volume for the selected output.
- **Bass**—Sets the Bass level for the selected output.
- **Treble**—Sets the Treble level for the selected output.
- **Balance**—Sets the L/R speaker balance for the selected output.
- Source Leveling
- **Audio Input**—Select one of the 16 inputs to adjust the setting for, move the slider to the desired setting, then click **Set**.
- Network Settings
- **Use DHCP**—Select this option to use DHCP, then click **Apply Settings**.

- **Use Static IP**—Select this and enter values for the **IP Address**, **Subnet Mask**, and **Gateway**, then click **Apply Settings**.
- All Channels
- **Reset Settings**—Resets all channel input and output settings to factory defaults.
- **Set Unity Gain**—Resets the Source Leveling for all inputs to **0dB**.

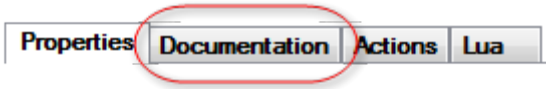
Configure a Control4 4k Ultra HD 10x10 HDMI Matrix Switch

Use the System Design and Connections views to identify a LU1082 HDMI Matrix Switch (C4-LU1082) to the Control4 system. This device switches up to 10 HDMI input sources and uses an HDBaseT Receiver (C4-LU1E) to connect to AV output devices.

> IMPORTANT! The hardware setup for the switch can be complex. Refer to the and the Setup Installation Guide for guidelines, warnings, and cautions to help ensure a smooth setup.

To add and configure an HDMI Matrix Switch:

1. Install and set up the video switch and any associated hardware according to each device's installation guide.
2. To add the driver to your project and identify the device, see "How to add devices to a project."
3. Make any necessary network or control/AV connections as necessary for your configuration. For information on setting each Properties field's parameters, click the Documentation tab in the driver's Properties window.



Configure an audio or AV switch

Use the System Design and Connections view to set up an audio or audio/video switch.

You can access the AV switch drivers from the System Design view in the Items pane by clicking the **Search** tab > Device **Type: A/V Switch or Audio Switch** > Manufacturer: **All Manufacturers**. Use the Driver Wizard for additional support for your audio or AV switch.

Install the audio or AV switch according to the manufacturer's instructions.

To add and configure an audio or audio/video switch:

1. Install and set up the audio or audio/video switch and any associated hardware.

2. In the System Design view, locate the driver. Click the **Search** tab > Device Type: **Audio Switch** or **A/V Switch** > Manufacturer: **All manufacturers**.
3. Select the **Audio Video** or **AV Switch** object in the project tree to view the device properties for that object and make configuration changes if applicable.

   Example: The Knox AV Switch has no properties to modify, but other switches have properties, for example, the Control4 Audio Switch.
4. Make any necessary network or control/AV connections as necessary for your configuration. See "Connect and verify devices" for details.
5. Modify any room connections as needed for your configuration.

Configure a 4-Zone Amplifier

Use the System Design and Connections views to add and configure a 4-Zone Amplifier (C4-8AMP1-B). This device lets you enjoy up to four zones (rooms) of music in the home.

Ensure that the 4-Zone Amplifier is installed as directed in the Control4 4-Zone Amplifier Installation Guide available on the Dealer Portal.

To add and configure a 4-zone Amplifier:

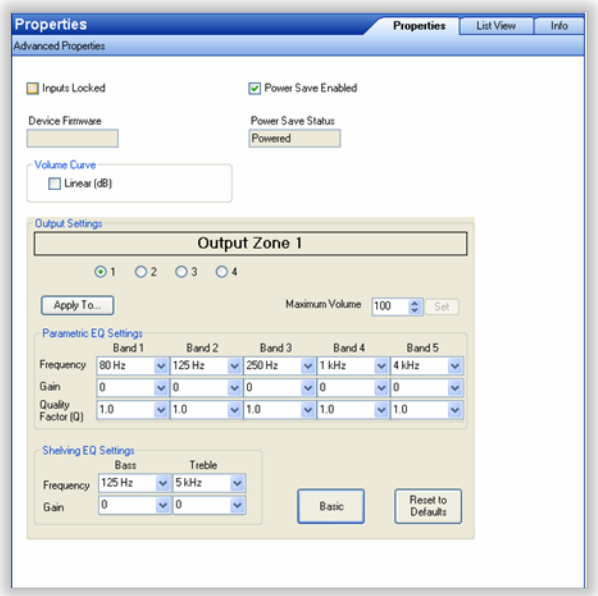
1. To add the driver and identify the device see "How to add devices to a project." Ensure that the **Multi Channel Amplifier 4 Zone** driver (under Audio/Video > Amplifier) is added to the project tree.

   IMPORTANT! The amplifier can be identified by IP only. The amplifier can communicate with the Control4 system using the TCP/IP network.

   Note: If you are using a TCP/IP network and the latest shipping version of this device, you can set this device to either DHCP Client (default) or a client that uses Static IP. To change this setting, see the LCD screen menu on the device.
2. Make the necessary connections. See "Connect and verify devices" for details.
3. (Optional) Change the 4-Zone Amplifier properties.

1. In the System Design view on the project tree, select the **Amplifier** object.

2. Modify the properties in the Properties pane:



Modifiable properties include:

- Advanced Properties
- **Inputs Locked**—This locks Audio Inputs to set Audio Outputs. You can have one Audio Input with several Audio Outputs, but an Audio Output may only have one Audio Input.
- **Power Save Enabled**—Check to save power.
- **Device Firmware**—This displays the firmware version.
- **Power Save Status**—This displays when power save is enabled.
- **Volume Curve**—Shows how the output volume of the amplifier reacts (the device compensates) to an increase in volume as heard by the human ear.
- Output Settings
- **Output Zones**—Select zones 1 through 8.
- **Maximum Volume**—Use the drop-down menu to select the volume up to 100. Click **Set**.
- Parametric EQ Settings
- **Frequency**—Center frequency to be adjusted.
- **Gain**—Set from -24dB (cut) to +6dB (boost) for the center frequency.
- **Quality Factor (Q)**—Width of the EQ boost/cut can be set from 0.5 to 1.0 in 0.1 steps and 1.0 to 10.0 in 1 step (there are no units for Q).

- Shelving EQ Settings
- **Frequency**—Center frequency to be adjusted.
- **Gain**—Set from -24dB (cut) to +6dB (boost) for the center frequency

Notes on EQ settings: The Q setting on the EQ setting determines the bandwidth of the boosted frequency (or cut frequency).

The *Quality Factor* is the center frequency divided by the bandwidth (Q=Center Frequency/Bandwidth), where bandwidth is determined by the frequency points; either side of the center frequency are -3dB from the center frequency. A setting of 1kHz with a Q of 1 means that the boosted frequencies affected are from 500Hz to 1.5kHz (1kHz wide to the -3dB points centered at 1kHz).

Example: If the Q is increased to 10 with the same 1kHz center frequency, then the bandwidth must decrease by the same ratio. Mathematically:

Q = Freq/BW10 = 1kHz/BWBW = 100HzAffected frequencies are Center Frequency +/- ½ (BW)1kHz +/- ½ (100Hz)1kHz +/- 50Hz = 950Hz to 1,050Hz

The higher the Q setting the narrower the frequency range affected by the gain setting, while a lower Q setting increases the frequency range affected by the gain setting at each EQ frequency.

The frequency response can be visualized as a tall, skinny building with a high Q value or a tall, wide (or pyramid shaped) building with a low Q value. The peak (or height of the building) at the center frequency is set by the Gain setting.

Configure a Multi-Channel Amplifier

Use the System Design and Connections views to add and configure a Multi-Channel amplifier (C4-16AMP3-B). This device provides eight stereo inputs and outputs with full audio switching.

> Note: In Release 1.8 and later, the Multi-Channel amplifier does not work with Zigbee Pro. Configure this device with Ethernet.

Ensure that the Multi-Channel amplifier is installed as directed in the Control4 Multi Channel Amplifier Installation Guide available on the Dealer Portal.

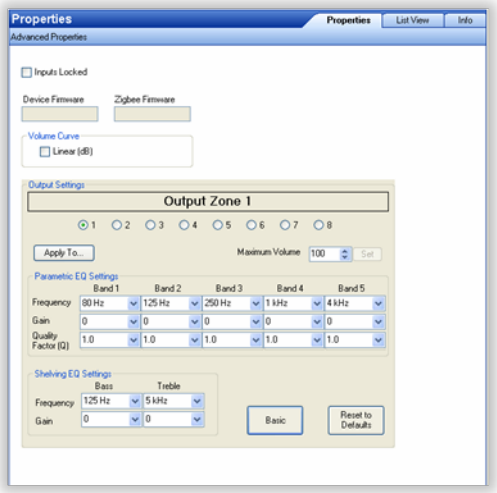
To add and configure a Multi-Channel amplifier:

1. To add the driver and identify the device see " How to add devices to a project." Ensure that the **Multi Channel Amplifier v3 - 16** driver is in the project tree.

Note: You can set this device to either DHCP Client (default) or a client that uses Static IP. To change this setting, see the LCD screen menu on the device.

2. Make the necessary connections. See " Connect and verify devices" for details.
3. (Optional) Change the properties as needed.

1. In the System Design view on the project tree, select the **Amplifier** object.
2. Modify the properties in the Properties pane:



Modifiable properties include:

- **Inputs Locked**—This locks Audio Inputs to set Audio Outputs. You can have one Audio Input with several Audio Outputs, but an Audio Output may only have one Audio Input.
- **Device Firmware**—This displays the version of firmware.
- **Zigbee Firmware**—This displays the version of firmware.
- **Volume Curve**—Shows how the output volume of the amplifier reacts to an increase in volume; the soft-to-loud response of the volume control.
- Output Settings:
- **Output Zones**—Select zones 1 through 8.
- **Maximum Volume**—Use the drop-down menu to select the volume up to 100. Click **Set**.
- Parametric EQ Settings:
- **Frequency**—Center frequency to be adjusted.
- **Gain**—Set from -24dB (cut) to +6dB (boost) for the center frequency.
- **Quality Factor (Q)**—Width of the EQ boost/cut settable from 0.5 to 1.0 in 0.1 steps and 1.0 to 10.0 in 1 step (there are no units for Q).
- Shelving EQ Settings
- **Frequency**—Center frequency to be adjusted.
- **Gain**—Set from -24dB (cut) to +6dB (boost) for the center frequency.

Notes on EQ settings: The Q setting on the EQ setting determines the bandwidth of the boosted frequency (or cut frequency).

The Quality Factor is the center frequency divided by the bandwidth (Q=Center Frequency/Bandwidth), where bandwidth is determined by the frequency points are either side of the center frequency are -3dB from the center frequency. A setting of 1kHz with a Q of 1 means that the boosted frequencies affected are from 500Hz to 1.5kHz (1kHz wide to the -3dB points centered at 1kHz).

Example: If the Q is increased to 10 with the same 1kHz center frequency, then the bandwidth must decrease by the same ratio. Mathematically:

Q = Freq/BW10 = 1kHz/BWBW = 100HzAffected frequencies are Center Frequency +/- ½ (BW)1kHz +/- ½ (100Hz)1kHz +/- 50Hz = 950Hz to 1,050Hz

The higher the Q setting the narrower the frequency range affected by the gain setting, while a lower Q setting increases the frequency range affected by the gain setting at each EQ frequency.

The frequency response can be visualized as a tall, skinny building with a high Q value or a tall, wide (or pyramid shaped) building with a low Q value. The peak (or height of the building) at the center frequency is set by the Gain setting.

Configure a media player

Use the System Design and Connections views to add and configure a media player. The device automatically scans videos. A media player (such as Netgear EVA8000) lets you play media that is stored on a network drive or available through the Internet to a TV.

The media player driver lets the Control4 system interact with the media player hardware through one of the Control4 system remote controls. The driver also supports the video playback functionality of the hardware, allowing the Control4 Navigators to be used to select a video title.

Ensure that your media player is installed according to the instructions in its documentation.

To configure a media player in your system:

1. To add the driver and identify the device see "How to add devices to a project." Make sure that the media player is added to the project tree.
2. Add a **Network File Storage** driver to your Composer Pro project (available on the My Drivers tab), then configure the properties including browsing to the network location. For information on adding and configuring network file storage, see "Using external storage devices." The network location must be an open share location (no password required). The Network File Storage driver supports both audio and video content.
3. Make the necessary audio and video connections. See "Connect and verify devices" for details.
4. To use the features of the media player, do one of the following:
   - Scan the videos. In the Media view, **scan** the videos that are in video_ts format:
   - Select **Video Media** under the network file share where you want to add the videos.
   - Click **Scan**. The scan operation identifies the video_ts format video files, adds them to the media database, and automatically associates the video metadata including cover art. When the scan completes, the videos in video_ts format are available for playback from the Navigators.

- Manually add the videos. In the Media view, manually add videos that are in formats other than video_ts. Video formats other than video_ts that are supported by your media player can be added to the media database in Composer Pro manually.
- Select **Video Media** under the network file share where you want to add the videos.
- Click **New**, and then select the **Browse** option next to the Location text box in the pop-up window. A new pop-up window will appear.
- In the pop-up window, select the drop-down menu for Files of type, and then select the ***.*** option.
- Select the file format you want to add to the database.

When the videos in alternative video formats are added to the system manually, those videos become available for playback from the Navigators.

Note: When using a system remote control Version 2, the Cancel button is mapped to the EVA8000 Back button and the DVR button toggles between aspect ratios.

5. Check the properties. In the System Design view, select the media player, then click the **Documentation** tab for more information about this device.
6. To view logging output, in the *Properties* pane, click the **Lua** tab.

Configure a Wireless Music Bridge

Use the System Design view to identify a Wireless Music Bridge (C4-WMB-B) to a Control4 system. This bridge lets you play music, Internet radio, podcasts, and more through your smartphone and tablet devices to the whole house (supported in OS 2.5 and later).

Prerequisites

- Ensure that the Wireless Music Bridge is physically installed as directed in the *Control4 Wireless Music Bridge Installation Guide*.

This audio output device uses SDDP (Auto Discovery) to identify the device automatically. See "Auto Discovery (SDDP)" in this documentfor details about Auto Discovery. If you ever need to identify the device again, use the standard method. If you want to play different streams for each zone in the home, you need a separate bridge for each stream. This device will play one stream in all supported zones, however.

To add and configure the Wireless Music Bridge:

1. In the System Design view's *Discovered* tab (Items pane), locate the Wireless Music Bridge (also listed in My Drivers > Audio/Video).
2. Make the necessary connections. See " Connect and verify devices" for details.
3. In the *Properties* pane, change the properties as needed.
4. Click the driver's **Documentation** tab for explanations of the *Properties* fields and additional information about the driver and device.
5. Click the **Lua** tab to view logged output.

Configure TuneIn

Use the System Design view to access and change TuneIn properties for a Control4 system. The TuneIn app lets you play music, Internet radio, podcasts, news, sports, and more through your Navigators and smartphone devices to the whole house (supported in OS 2.4 and later).

Prerequisites

- The TuneIn app, driver, and license are included in OS 2.4 and later, but your customers will need to set a TuneIn account to pair TuneIn with their system and they must have an EA, HC-250, or HC-800 Controller as their primary controller. The TuneIn driver appears below the controller in the Composer Pro project when these conditions are met.
- For the best audio experience, have your customers create a TuneIn account and add **Favorites**. They can then pair their TuneIn account to the Control4 system so they can play their favorite stations on their Navigators. See the *TuneIn Setup Guide* or *TuneIn User Guide* in the Residential or dealer Documentation page for details.

This TuneIn driver is added automatically (see "Prerequisites" above). If you need to add the driver again, use the standard method. The driver is located in My Drivers > Audio/Video > Media Service.



To configure the TuneIn properties:

1. In Composer Pro > System Design, locate the TuneIn driver.
2. Select **TuneIn**, then change the properties as needed.
3. Click the **Actions** tab to sync Favorite stations, update the TuneIn pairing status, drop a TuneIn account, or join a TuneIn account.
4. Click the **Documentation** tab for explanations of the Properties and Actions fields and additional information about the driver and device.
5. Click the **Lua** tab to view logged output.

Adding a media service

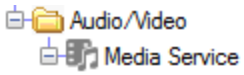
Use the System Design view to add a music service to a Control4 system. In this example, Pandora is used, but the Media Service proxy will support additional services as drivers for them become available.

Prerequisites

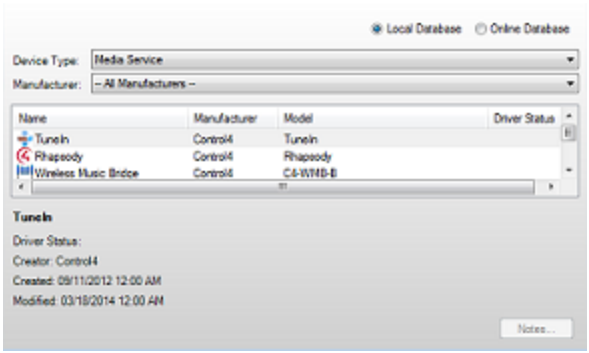
- Ensure that a supported music service account has already been set up by the user.
- Ensure that the devices you want to use for Rhapsody output are added and identified to the system.

To add a media service:

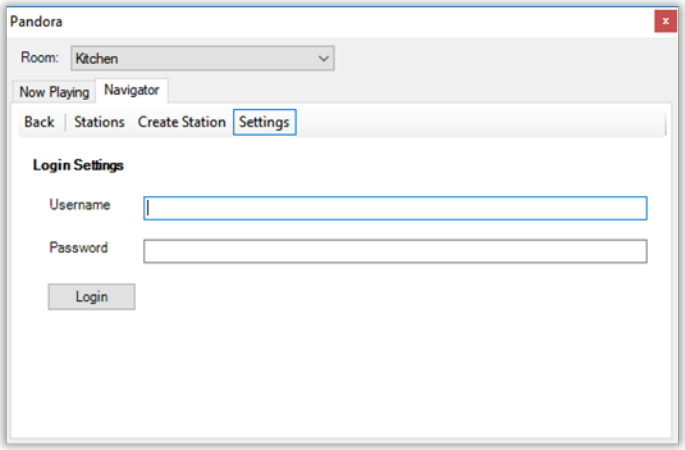
1. In the Items pane > My Drivers tab > Audio/Video, double-click **Media Service**.



The *Select the Driver* dialog box opens.



2. Double-click the music service to add. The service is added to your project tree.
3. The customer should log into their music service account in any Navigator under *Settings*. You can also have them log in to the service on your computer under the service device control's *Navigator* tab.



4. Click the driver's **Documentation** tab for explanations of the *Properties* fields and additional information about the driver and device.

Configuring Motorization

Use the System Design and Connections views to add and configure contacts and relays.

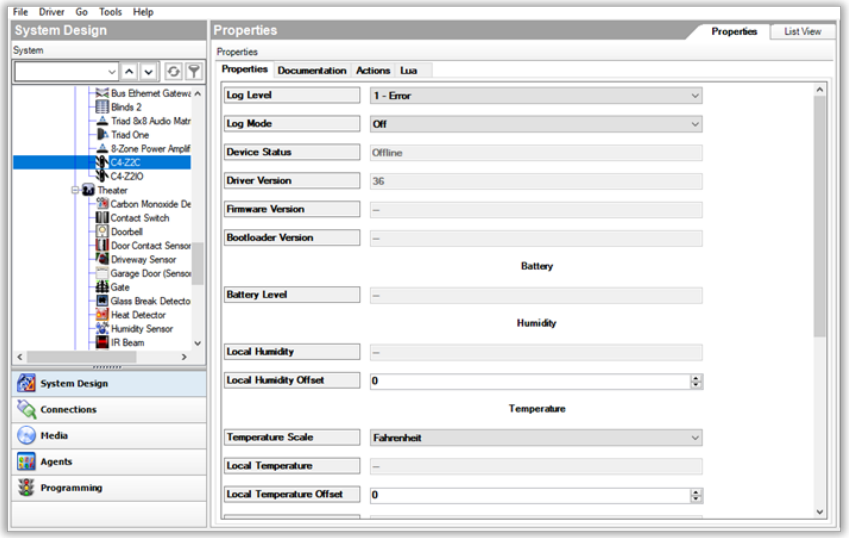
Configuring a Zigbee IO and Zigbee Contact

Ensure the Zigbee IO or Zigbee Contact is installed as described in their respective Installation Guide.

- Zigbee IO Installation Guide (ctrl4.co/z2io-ig)
- Zigbee Contact Installation Guide (ctrl4.co/z2c-ig)

To add and configure a Zigbee IO or Zigbee Contact:

1. To add the driver and identify the device see " How to add devices to a project." Ensure that the **Zigbee IO or Zigbee Contact** driver is added to the project tree.
2. (Optional) To configure the properties, click **System Design**.
3. In the project tree, select the **Zigbee IO or Zigbee Contact** object.
4. View and change the properties in the Properties pane.



A full description of the device properties can be found in the Documentation tab.

Configure a contact

Use the System Design view to check and change properties for contacts.

When using a contact in your project, the physical change of the contact's state might not always result in a single open-to-close or close-to-open state change, but rather bounce between states multiple times before the final state is reached.

To eliminate false notification of the contact state to the Control4 system, you can configure a 'Debounce Timer' to allow the system to see only a single state change.

In the System Design view, you can set this option in the Properties pane when you select a contact.

To set this option:

1. Select the **contact** object from the project tree. View its properties in the Properties pane.

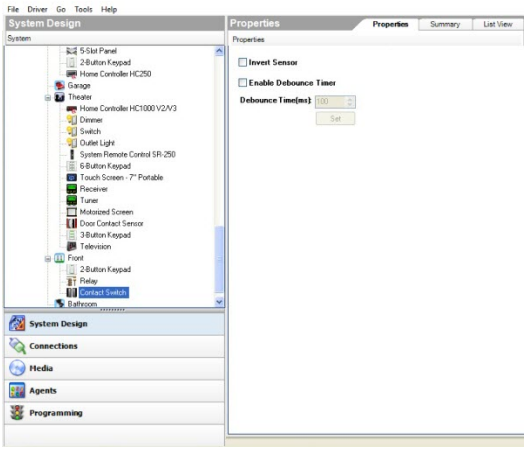
   Modifiable properties include:

   Invert Sensor–Depending on the sensor type, the controller sends a small amount of voltage through the sensor to close it, if for example when a door is closed with feedback indicating such. You use Invert Sensor if you want to feedback to be the opposite.

   Enable Debounce Timer–Sets an amount of time that lapses before the sensor triggers to on.

   Debounce Time(ms)–The amount of time in milliseconds before the sensor state changes to on.

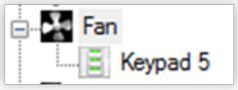
2. Check the **Enable Debounce Timer** box.
3. In the Debounce Time(ms) (in milliseconds) drop-down menu, select to delay notification of the contact state (the default is 100 milliseconds).



Configure a Fan Speed Controller

This applies to next generation lighting (compatible with OS 2.5 and later).

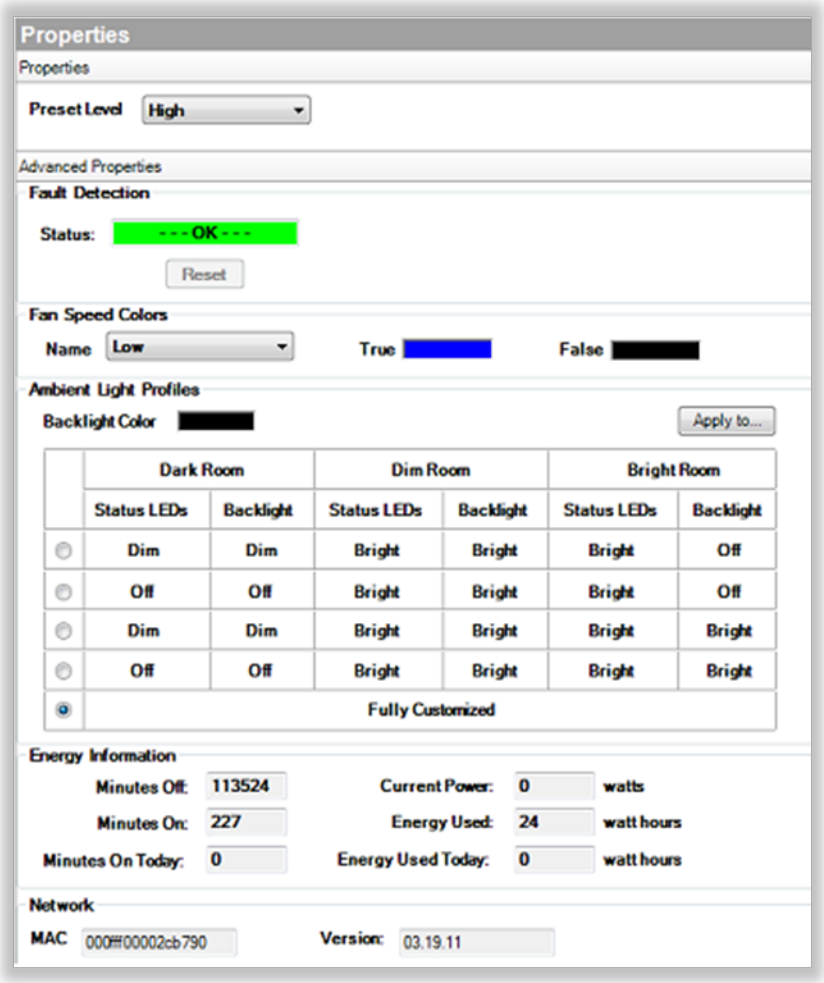
When adding a Fan Speed Controller to your project, a keypad is also added underneath it. Both devices need to be configured.



To configure a Fan Speed Controller:

1. Add the Fan Speed Controller to your project tree, then identify it. For instructions, see "How to add devices to a project."
2. In the System Design view, select **Fan Speed Controller**. The device's *Properties* tab opens.
3. Configure the settings for the device as described in the following *Properties* sections.

If you entered text for custom engraving, go to "Ordering keycap engraving" Fan properties



Properties

- **Preset Level**— Select a fan speed from the drop-down list. This is the speed that will be used when the fan is toggled on.

Advanced Properties

- Fault Detection
- **Status**—Displays the device's current fault status. Green is normal, but red indicates a fault.
- **Reset**—Resets the fault status indicator. If the fault repeats, make sure that the load type is compatible, that the device is wired correctly, and that the device is not damaged.
- Fan Speed Colors
- **Name**—Select the fan speed using the **Name** drop-down menu, then click the **True** or **False** color bars to change them. *True* is the keypad color when

that speed is active.

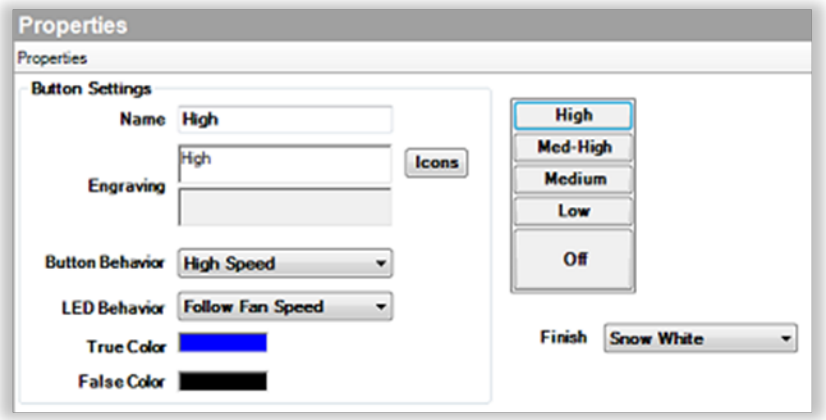
- Ambient Light Profiles
- Select a preset brightness profile for the keypad backlight and LEDs that changes their brightness according to the room's ambient light. You can also select Fully Customized and manually set each brightness level according to ambient lighting.
- **Backlight Color—**Sets the keypad's backlight color. If you don't want a keypad backlight, keep the default setting (black).

Energy Information (view only)

- **Minutes Off**—Elapsed minutes since device was turned off.
- **Minutes On**—Elapsed minutes since device was turned on.
- **Minutes On Today**—Total minutes device has been on for the current day.
- **Current Power**—Power being consumed by the device at the present time.
- **Energy Used**—Total watt hours consumed by the device over its lifetime.
- **Energy Used Today**—Watt hours consumed by the device for the current day.

Network–(read only) The current MAC address and firmware version of the selected device. These fields are not editable.

Keypad properties



Properties

- Button Settings
- **Name**—The name of the button (used for defining its connections to other devices or events within Composer Pro).

- **Engraving**—Text that you want printed onto the buttons. For more information, see "Ignore device when it comes online—When selected, this checkbox tells the system to ignore the older device when it comes back online."—When selected, this checkbox tells the system to ignore the older device when it comes back online.
- **Icons**—Icons that you want printed onto the buttons. To add an icon to the Engraving text box, click **Icons**, then double-click the icon to add.
- **Button Behavior—**The fan speed that the selected button activates. You can also select **Keypad** for the button to act like a standard keypad button that doesn't directly control the fan speed.
- LED Behavior
- **Follow Bound Device**—LED behavior reflects the state of the device the button is bound to.
- **Follow Fan Speed**—LED behavior reflects the fan speed.
- **Push/Release**—LED behavior reflects the button state (pressed or released).
- **Push Color**—Sets the LED color while the button is pressed.
- **Release Color**— Sets the LED color while the button is released.
- **Programmed**—LED behavior follows programming commands.
- **Finish**—Color of the buttons.

Configuring HVAC systems

Use the System Design and Connections views to configure a Control4 Wireless Thermostat. Control4 also supports multiple third-party thermostat models.

> Note: Previous releases of Composer Pro documentation included instructions about how to configure third-party products and older versions of the Wireless Thermostat. Starting with OS 2.0, third-party device configurations are no longer included in the Control4 documentation, although they are still supported in the drivers list (for example, EnviraZone and Aprilaire RS232). Refer to previous releases of the Composer Pro User Guide for information about these third-party drivers and examples of older thermostat models.

Setting up a Wireless Thermostat

Use the System Design and Connections views to set up a Control4 Wireless Thermostat.

Prerequisites

- Ensure that your project has a Control4 controller added to the project tree and is identified on the Control4 system.
- Ensure that the thermostat is installed at the wall as directed in the Control4 Wireless Thermostat Installation Guide available on the Dealer Portal.
- Ensure that the Control4 Wireless Thermostat is added to the project tree.

To configure a Wireless Thermostat for the Control4 system:

1. To add the driver and identify the device see " How to add devices to a project." Ensure that the **Residential Thermostat** driver is added to the project tree (unless you're using a third-party thermostat).
   - To program the schedule, see " Programming the Control4 Thermostat schedule."
   - To set up advanced properties, see " Using the Wireless Thermostat advanced properties."

Programming the Control4 Thermostat schedule

Use the System Design view to set a heating and cooling schedule for your Control4 Wireless Thermostat (model number: Control4-CCZ-T1-x for OS 2.0 and later). The Control4 Wireless Thermostat works with your heating and cooling system to maintain a consistent temperature called a 'set point.' Using the Control4 Wireless Thermostat, you can specify separate heating and cooling set points.

> Tip: New in OS 2.0 and later, you can set the heating and cooling schedule from a touch screen or on-screen Navigator. See the Control4 System User Guide for details.

The Control4 Wireless Thermostat automatically engages the appropriate heating or cooling system until the room reaches the desired temperature. In Composer Pro, you can set up a Heat Point and a Cool point for six possible Program Events in a day time period.

Program Events include:

- **Awake**—Sets the wakeup time and related Heat/Cool Points.
- **Leave**—Sets the away time and related Heat/Cool Points.
- **Return**—Sets for return time and related Heat/Cool Points.
- **Sleep**—Sets for sleep time and related Heat/Cool Points.
- **Custom 1**—Sets a specified time and related Heat/Cool Points.
- **Custom 2**—Sets a specified time and related Heat/Cool Points.

You can enable these Program Events for weekdays, weekends, or individual days to match activity in the home.

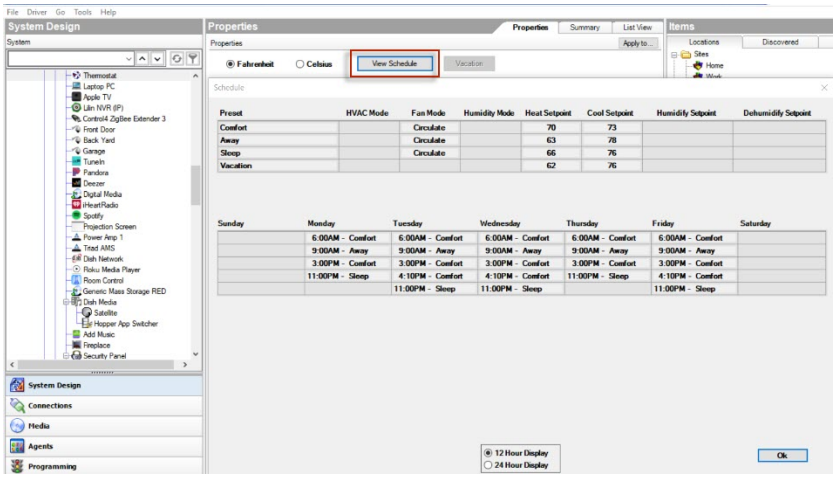
Prerequisite

Ensure that the thermostat is installed as directed in the Control4 Wireless Thermostat Installation Guide available on the Dealer Portal.

To program the Wireless Thermostat schedule:

1. In the System Design view, select the **Control4 Wireless Thermostat** object.
2. The Properties appear in the center pane. Fahrenheit is selected by default; select Celsius as needed.
3. In the Properties tab, select **View/Edit Schedule**. The Schedule dialog appears with the currently programmed schedule for Monday through Sunday.

Note: You can schedule the thermostat either in Composer Pro or in the Control4 touch screens, Control4 apps, or on-screen Navigators. See the Control4 Wireless Thermostat User Guide or the Control4 System User Guide for information about scheduling a Wireless Thermostat from a Navigator.



Tip: To return to the original settings, click the **Restore Default** button.

4. For each line item: Awake, Leave, Return, Sleep, Custom 1, and Custom 2, use the **up** and **down** arrows to set the day and temperature Heat and Cool set points.

Notes: (1) You can view the schedule by selecting the **12 Hour Display** or the **24 Hour Display**. (2) The Cool and Heat Points stay two degrees apart. Example: If you set the Heat Point to **72** degrees, the lowest you can set the Cool Set Point is **74** degrees. This keeps your furnace and your air conditioner from competing with each other.

5. When you are finished, click **Ok**. Your updated schedule displays. You may then set the modifiable properties. See "Using the Wireless Thermostat advanced properties."

Using the Wireless Thermostat advanced properties

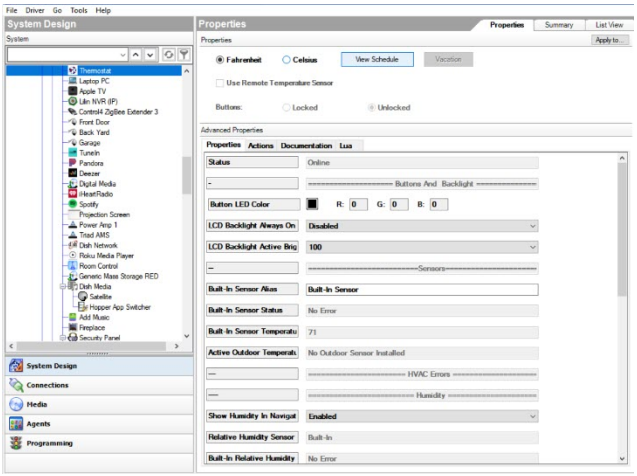
Use the System Design view to view and change the Wireless Thermostat properties. Set the Properties to create a schedule and the Advanced Properties to modify the thermostat's configuration.

Ensure that the Control4 Wireless Thermostat (model number: Control4-CCZ-T1-x for OS 2.0 and later) is installed as directed in the Control4 Wireless Thermostat Installation Guide available on the Dealer Portal.

To use the thermostat advanced properties:

1. In the project tree select the **Control4 Wireless Thermostat**.
2. Click the **Properties** tab to view the list below.

Note: Different properties may appear, depending on the thermostat model. The properties below apply to the Control4 Wireless Thermostat for OS 2.3.0 or later.

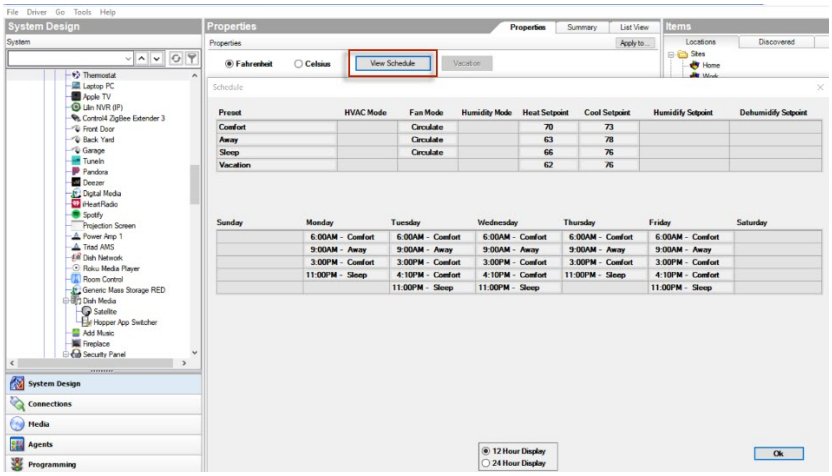


Modifiable Advanced Properties include:

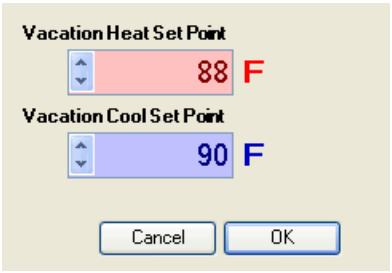
Properties

- **Fahrenheit** or **Celsius**—Sets the temperature display in Fahrenheit or Celsius.
- **View/Edit Schedule**—Brings up the schedule page to set heat and cool set points for auto mode (see below). In the mode (Awake, Leave, Return, etc.), set the day and temperature set points. Click **OK** to close the window. Note: You can view the

schedule by selecting the **12 Hour Display** or the **24 Hour Display**.



- **Vacation**—Lets you set the Heat Set Point and Cool Set Point when the homeowner is on vacation. Use the **up** or **down** arrows to set the heat and cool set points, and then click **OK**.



- **Use Remote Temperature Sensor**—Sets the thermostat to use either the on-board Local temperature sensor (default) or an optional Remote temperature sensor to control the HVAC system by selecting the **Use Remote Temperature Sensor** radio button.
- **Buttons**—Locks local buttons to prevent unwanted changes to thermostat settings. Select the **Locked** and **Unlocked** radio buttons. Note*:* If buttons are disabled, they will be re-enabled when the thermostat power cycles. This is a safety mechanism to prevent a thermostat from becoming completely inoperable if it were removed from a project while the buttons were disabled.

Advanced Properties

- General Setup
- **Backlight Mode**—Lets you select your preferences for the backlight. Select **On Button Press** to light the backlight for ten seconds when any button is pressed.

Select **Always On** to keep the backlight on constantly. When using batteries for power with power stealing enabled, the Always On option is not recommended.

- **Battery**—Shows the power source or battery level (for example, "Externally Powered").
- **Time Format (Date and Time)**—Lets you set preferences regarding Date Format (MM/DD/YYYY or DD/MM/YYY) and Time Format (12 h or 24 h). Click the **Sync Time** button under Time Format to update the time on your thermostat manually to the controller. (The thermostat also updates automatically at 3:00 AM each morning.)
- **Network**—Displays informational boxes that provide Zigbee networking information (MAC and Firmware Version).
- **Advanced Device Configuration**—Click this button to fine-tune your thermostat (see below).

3. Select **Apply to** to apply the current properties to the selected Wireless Thermostats.

Advanced Device Configuration

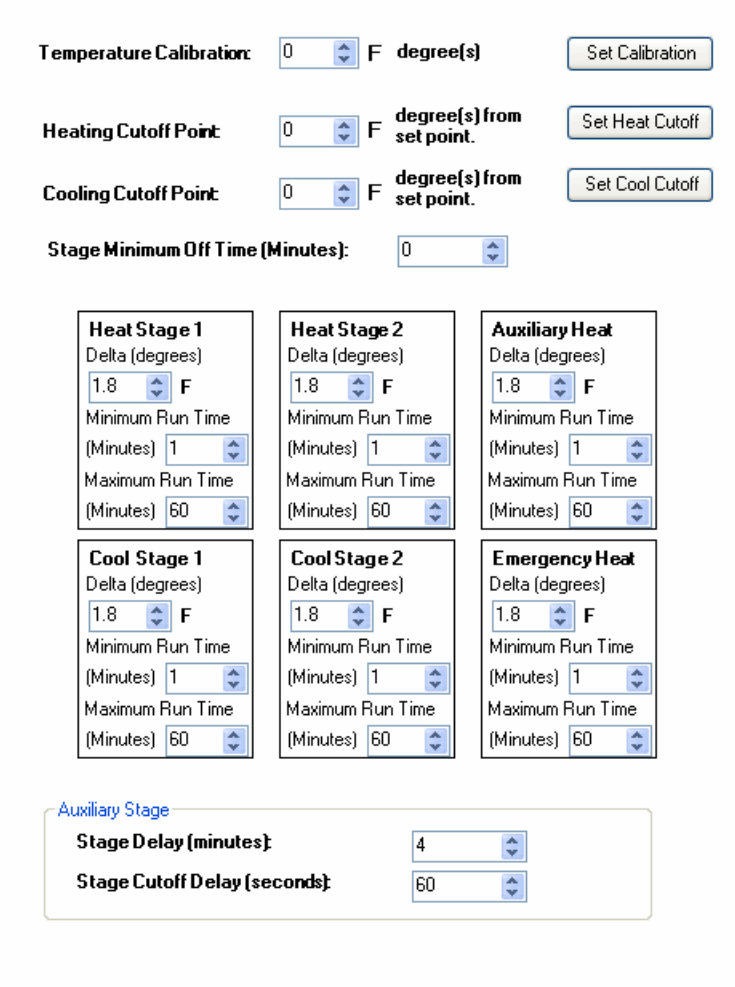
Control4 has enhanced the available thermostat settings to allow users and installers to modify engage and cutoff temperature deltas–as well as maximum and minimum run time, off, and delay times–so that the thermostat can be configured to run optimally with any HVAC system.

Note: Allowing such fine tuning of all settings can result in setting improper values and combination of values to cause the HVAC system to run less than optimal. To prevent thrashing the cool and heating engage (constant heat, then cool, engagement), cutoff and set points are enforced to have at least a one degree difference for engage temperatures.

The formula for the dependency of these values is:

Heat/cool engage delta–Opposite stage (if heat engage, then cool cutoff and visa versa) cutoff delta + set points delta (cool set point - heat set point) >=1

The screen below shows the Advanced Device Configuration properties.



- **Temperature Calibration**—Use the **up** or **down** arrows to set *x* degree(s), and then click **Set Calibration**. This lets you fine tune the current temperature reported by the thermostat by +/- 5 degrees. Example: If your thermostat reads **72** degrees Fahrenheit, and you determine that the current temperature should be **70** degrees Fahrenheit, press the **down** button two times to lower the thermostat's reading to 70 degrees Fahrenheit. Click **Set Calibration**.

  Note: No changes to calibration should be made within 20 minutes of powering on the thermostat. The thermostat generates a small amount of heat which affects the calibration. After 20 minutes of continuous operation, this will stabilize allowing proper calibration.

- **Heating Cutoff Point**—Use the **up** or **down** arrows to set *x* degree(s) from the set point, and then click **Set Heat Cutoff**. This sets how far over the setpoint you want the heating system to remain engaged before shutting off. Example: If the heat set point is set to **68** degrees Fahrenheit and the cutoff

point is set to **2** degrees Fahrenheit, the heating system will engage until reaching **70** degrees.

- **Cooling Cutoff Point**—Use the **up** or **down** arrows to set *x* degree(s) from the set point, and then click **Set Cool Cutoff**. This sets how far under the setpoint you want the cooling system to remain engaged before shutting off. Example: If the cool setpoint is set to **68** degrees Fahrenheit and the cutoff point is set to **2** degrees Fahrenheit, the cooling system will engage until reaching **66** degrees.
- **Stage Minimum Off Time (Minutes)**—Use the **up** or **down** arrows to set the minimum off time in minutes. Note: This setting takes effect as soon as the Advanced Device Configuration box is closed.

  This is the minimum amount of time that the heating or cooling will remain off before initiating again. Example: If while cooling, the temperature does not reach the designated cutoff point before the maximum run time is reached, the cooling system will shut off and not initiate cooling again until the Minimum Off Time is reached. Note: Some HVAC systems automatically enforce a Minimum Off Time. In this case, the heating or cooling will remain off for the higher of the two settings (thermostat or HVAC system).

  Stage Configuration (Heat Stage 1, 2; Cool Stage 1, 2; Auxiliary; Emergency)

  The stage configuration boxes allows for setting the engage delta, minimum run time and maximum run time for each stage.

  Note: These settings take effect as soon as the Advanced Device Configuration box is closed.

- **Delta** (degrees)—Use the **up** or **down** arrows to set the stage engage temperature delta. This sets how many degrees the current temperature will reach beyond the setpoint before the stage engages.

  Example:

  For heat, if the heat setpoint is **70** degrees Fahrenheit and the engage delta is **2** degrees Fahrenheit, the heat stage will engage when temperature reaches **68** degrees.

  Note: For multi-stage systems, the deltas for the first and second stages are cumulative. If the first stage delta is set at **2** degrees Fahrenheit and the second stage delta is set at **2** degrees Fahrenheit, the second stage will not engage until the current temperature has passed the stage setpoint by **4** degrees Fahrenheit. However, the Auxiliary Heat and Emergency Heat deltas are NOT cumulative.

- **Minimum Run Time**—Use the **up** or **down** arrows to set the stage *x* minimum run time in minutes. The minimum run time is one minute. This sets the minimum time the heating and cooling will run before shutting off. Example: If while cooling or heating, the temperature reaches the designated Cutoff Point before the Minimum Run Time is reached, the system will not shut off until the Minimum Run Time is reached. Also, if heat or cool is engaged and shut off manually, the system will not shut off until the

Minimum Run Time is reached. Note: Some HVAC systems have built-in Minimum Run Times that may be greater than that set on the thermostat.

- **Maximum Run Time**—Use the **up** or **down** arrows to set the Heat Stage *x* maximum run time in minutes. The maximum run time is 255 minutes. This sets the maximum time the heating or cooling will run before turning off. Example: If heating or cooling is engaged, but does not reach the Cutoff Point before the Maximum Run Time is reached, the cooling system will turn off. Note: The Maximum and Minimum Run Times are not per stage, but for cooling and heating run times regardless of first or second stage transitions.

Auxiliary Stage

The Auxiliary and Emergency Heat stages are specifically for heat pump systems. The switches on the back of the thermostat allow the thermostat to operate a heat pump system.

Note: These settings take effect as soon as the Advanced Device Configuration box is closed.

- **Stage Delay (Minutes)**—Use the **up** or **down** arrows to set the stage delay for *x* minutes. This sets the allotted time the main heat pump system will run without reaching the desired heat setpoint goal before the Auxiliary stage engages. Note: If set to the maximum time allowed, the auxiliary system will be disabled and never engage.
- **Stage Cutoff Delay (seconds)**—Use the **up** or **down** arrows to set the stage cutoff delay in seconds. This sets how much of a delay before the main heat pump cuts off, leaving the Auxiliary heating stage to run on its own. Note: If set to the maximum time allowed, the main heat pump stage and the Auxiliary heat stage will run together indefinitely.

Configuring a camera

Use the System Design and Connections views to configure this device. Security cameras, including on-screen controls in Navigators such as pan, tilt, zoom, and preset settings, are supported, along with HTTP control and JPEG or MJPEG images.

Drivers for cameras (also referred to as *IP cameras*, *web cameras*, or *security cameras*) now have greater configurability within Composer Pro. A camera diagnostics page has also been added to the basic properties. In addition, the video feed quality is greatly improved for mobile viewing.

Prerequisites

- Ensure that your project has a Control4 controller added to the project tree and is identified on the Control4 system.
- Ensure that the camera is installed as directed in the manufacturer's installation guide.

To add and configure a camera:

1. In the camera's *Properties* pane, click **Help**. A help topic opens explaining how to configure and test the camera driver.

Configuring Black & Decker locks

Use the System Design view to add and configure Black & Decker KwikSet® SmartCode® with Home Connect™ Technology Zigbee Deadbolt locks, Baldwin, or other supported locks for exterior doors. In general, these instructions can be used to add and configure lock drivers for other lock products compatible with Control4 systems.

Ensure that the Black & Decker locks are installed as directed in the Black & Decker Installation instructions shipped with the product.

To add and configure Black & Decker locks:

1. To add the driver and identify the device see " How to add devices to a project." Ensure that the **Black and Decker SmartLock RF Zigbee** driver is added to the project tree.

Tip: If you are adding several locks in a home, it might be useful to give each lock a unique name.

2. For each lock you add to the project, add a **Relay** to the project tree also. See "Configuring Motorization."
3. Click the **Connections** view.
4. In the Connections view, use the **Control & Audio Video Connections** tab to make the necessary control connection.
5. Under Control Outputs, select the **Lock State** and drag it down to the **Relay** in the RELAY Input Devices pane.
6. (Optional) For additional Black and Decker Zigbee Lock setup, configure the Properties.

1. In the System Design view project tree, select the **Black and Decker Zigbee Lock** object.
2. Modify the properties in the Properties pane, and then click **Set** (if applicable).
   - **Debug Mode**—Use the drop-down menu to select logging and printing.
   - **Lock Sleep Timer**—Use the drop-down menu to select how long the lock is in sleep mode (in seconds).
   - **# of Log Items**—Use the up or down arrows to set the number of items to log.
   - **Last Status**—Last change made in Debug Mode.
   - **Firmware Version**—Indicates the Zigbee firmware version for the lock.
   - **Instructions**—See the *Documentation* tab.
   - **Name, Code** x—Enter the lock name and code here. You can enter up to 30 code entries. Set up the user codes here. Type the user's name, then a comma (,), and then add the numeric code (4 to 8 characters allowed). Example: Bob, 12345. Up to 30 codes can be entered.

Tip: The codes can be entered also on the touch screen or on-screen Navigator if you download the Black & Decker application from 4Store.

3. Click the **Documentation** tab for additional information about setting the properties, user codes, and actions for the locks.
4. Click the **Actions** tab.
   - **Get Battery Status**—Click to show the status of the battery on the lock.
   - **Show User Codes**—Click to show all of the user codes assigned to this lock. The user codes appear in the Properties tab.
   - **Hide User Codes**—Click to hide all user codes assigned to this lock. The user codes appear as x's in the Properties tab.
   - **Delete All Codes**—Click to delete all user codes assigned to this lock.

   Note: You can set the user codes either from Composer Pro, or from the touch screen or on-screen Navigator in My Apps (downloaded from 4Store). The priority for setting user codes and Actions is whoever set the codes or actions last, whether it was in Composer Pro or on a touch screen or on-screen Navigator, will be the valid codes or actions used. See the Black & Decker KwikSet SmartCode with HomeConnect™ Locks User Guide on the Control4 Products page for details.
5. Click the **Lua** tab. This is used for the DriverWorks SDK (developers only).

Connecting devices

After you plan and create the project in Composer Pro's System Design for a Control4 system (adding the buildings, rooms, devices, etc.), you are ready to make the necessary connections in the system. Just like you connect cables and wires between your physical devices so they work together, those same connections need to be added virtually in Composer Pro using the Connections view.

Use this chapter to learn how to:

- Connect devices virtually
- Verify the connections by testing them

Why you need connections

The software connections represent either connections between the controller and its attached devices or connections among AV devices.

When you match the connections together in Composer Pro, the software connections mirror the hardware connections in the system where appropriate. The system can then control the connected devices and identifies where to route the media where it's available.

These types of connections are used in the Control4 system:

- **Network Connections**–Defines the devices that use a network address. Network connections include IP and Zigbee or Zigbee Pro devices.
- **Control Connections**–Defines the control connection between a device and the controller. Control connections include contact*s*, relays, serial, and IR -controlled devices.
- **Audio and Video Connections**–Defines the devices that have audio and/or video signals.
- **Room Connections**–Defines the video, audio, or video/audio end points and the video/audio or audio volume for the selected room.

Connection design tips for CentralizedLighting

Because there could be potentially many devices in a Centralized Lighting solution, making the proper connections between the modules and loads is key to efficient Centralized Lighting design. It will require some practice and trial and error on each project to get the system designed the way you want it.

Keep these things in mind:

- Each module ideally should use all channels and be close to the maximum wattage allowed. This must be traded off, however, against certain realities; for example, arc-fault breakers, numerous small loads, and very large loads.
- Whenever possible, put the loads in the same room on the same module. This allows each module override scene to control loads that would be grouped together logically.
- When using multiple panel/module installation locations, connect loads to modules in a nearby location to minimize long wiring runs.

Connect and verify devices

In Composer Pro Connections, you can:

- Identify Control4 devices to establish a network connection
- Check all network connections
- Define AV connections
- Define control connections

When only one connection is available in a room for a given connection type, Composer Pro assumes that connection.

> Tip: To remove any inappropriate connection, right-click the connection, and select **Disconnect**.

> Example: If a TV is the only Audio Output device in a room, the system assumes that the Audio Output connection is routed to the TV. This feature adds value to Composer Pro, but increases the need to verify every connection.

To connect devices:

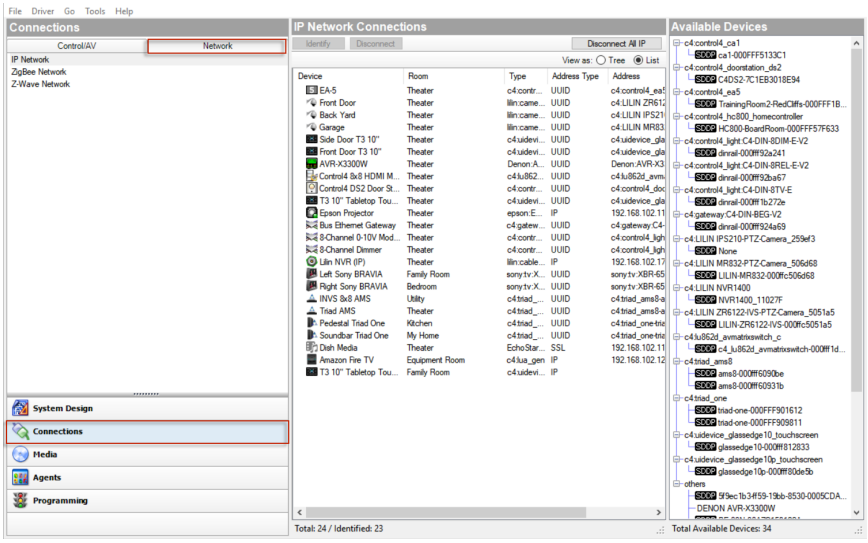
1. Start Composer Pro and connect to a Director.
2. Click **Connections**.
3. Identify the devices to add their network addresses to the project.

1. In Connections, click the **Network** tab > **IP Network** (default).

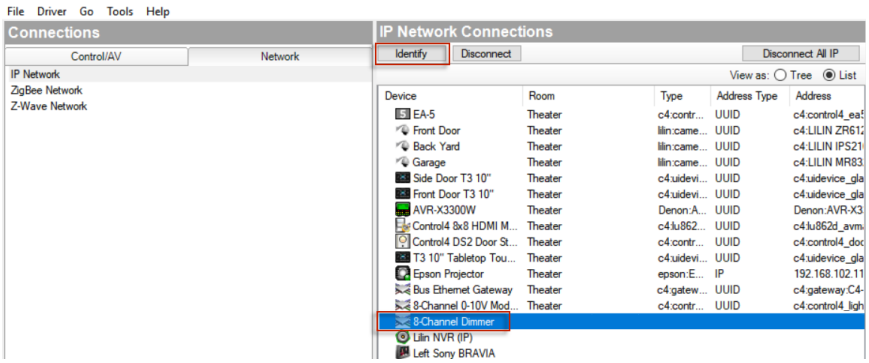
Notice the devices that do not have an address listed in the Address column of the IP Network Connections pane. These devices need to be identified and connected.

> Tip: Devices that appear with a highlighted SDDP in the Available Devices pane can be added and identified using Auto Discovery. See "Auto Discovery (SDDP)"

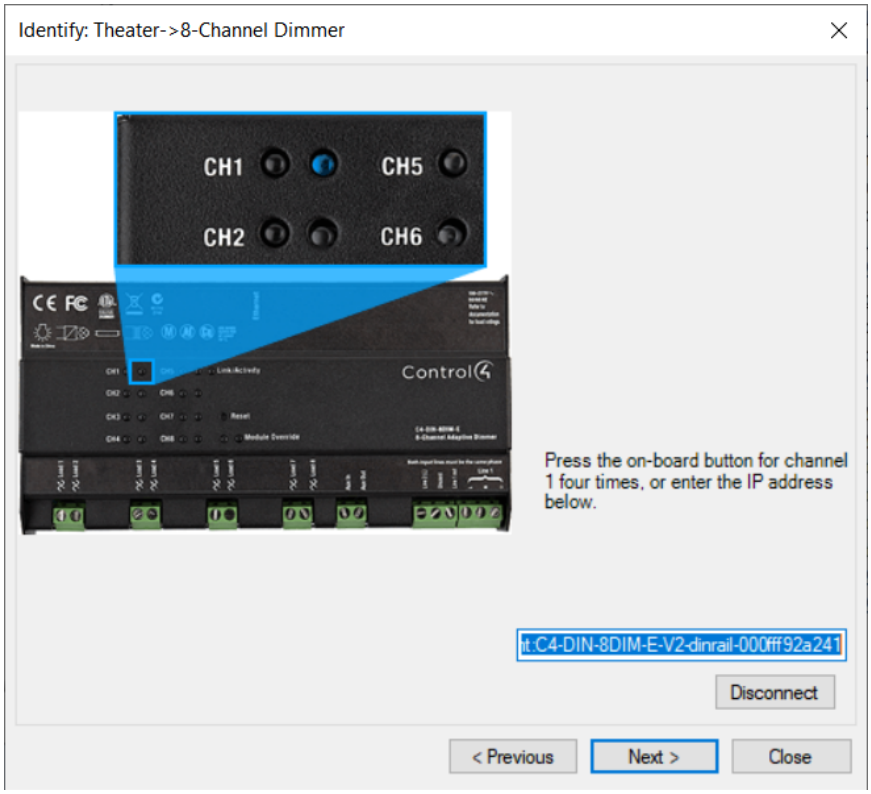
> in this document for details.



2. Select an unidentified device in the address list, then right-click and select **Identify** (or click the **Identify** button in the list header). A device-specific instruction screen with a graphic of the device displays (for example, 8 Channel Dimmer).

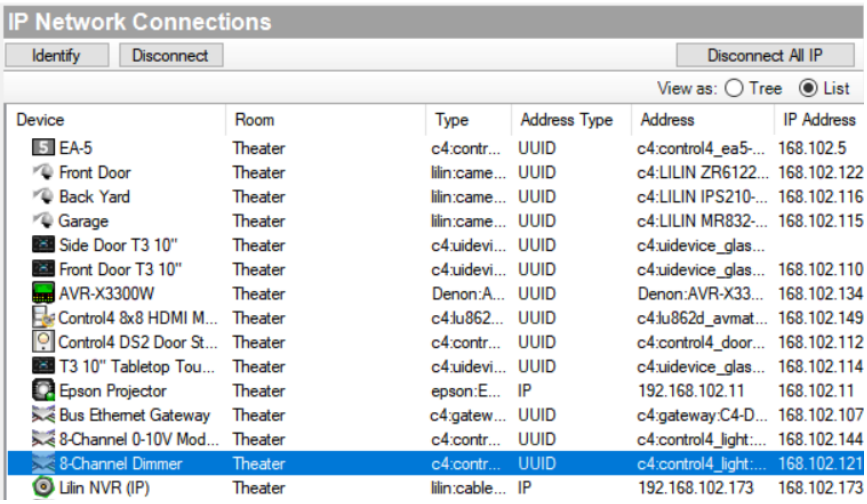


3. At the physical device, press the **Identification** button or dial, as indicated on the screen. The button to be pushed on the device flashes on the screen.



4. When the device's network address displays in the box, click **Next** to continue, or click **Close** if you've identified the IP network device. Follow these steps for each device.

   When you are finished, notice that the Address column is populated with an address for the network device.



Device	Room	Type	Address Type	Address	IP Address
EA-5	Theater	c4:contr...	UUID	c4:control4_ea5-...	168.102.5
Front Door	Theater	lilin:came...	UUID	c4:LILIN ZR6122...	168.102.122
Back Yard	Theater	lilin:came...	UUID	c4:LILIN IPS210-...	168.102.116
Garage	Theater	lilin:came...	UUID	c4:LILIN MR832-...	168.102.115
Side Door T3 10"	Theater	c4:uidevi...	UUID	c4:uidevice_glas...	
Front Door T3 10"	Theater	c4:uidevi...	UUID	c4:uidevice_glas...	168.102.110
AVR-X3300W	Theater	Denon:A...	UUID	Denon:AVR-X33...	168.102.134
Control4 8x8 HDMI M...	Theater	c4:lu862...	UUID	c4:lu862d_avmat...	168.102.149
Control4 DS2 Door St...	Theater	c4:contr...	UUID	c4:control4_door...	168.102.112
T3 10" Tabletop Tou...	Theater	c4:uidevi...	UUID	c4:uidevice_glas...	168.102.114
Epson Projector	Theater	epson:E...	IP	192.168.102.11	168.102.11
Bus Ethernet Gateway	Theater	c4:gatew...	UUID	c4:gateway:C4-D...	168.102.107
8-Channel 0-10V Mod...	Theater	c4:contr...	UUID	c4:control4_light:...	168.102.144
8-Channel Dimmer	Theater	c4:contr...	UUID	c4:control4_light:...	168.102.121
Lilin NVR (IP)	Theater	lilin:cable...	IP	192.168.102.173	168.102.173

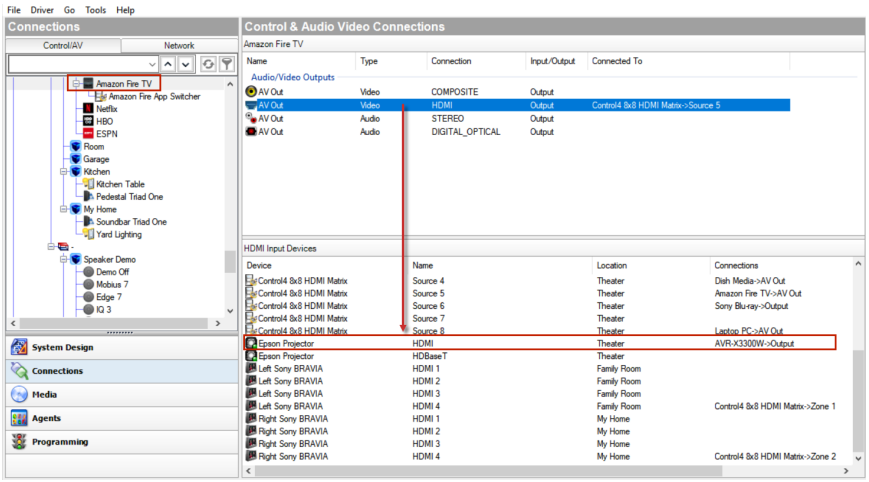
Define the control and AV connections

4. For each device, define the following when applicable:
   - Video connections (path of video signals)

- Audio connections (path of audio signals)
- Control connections (how the controller communicates with the device)

To define the connections:

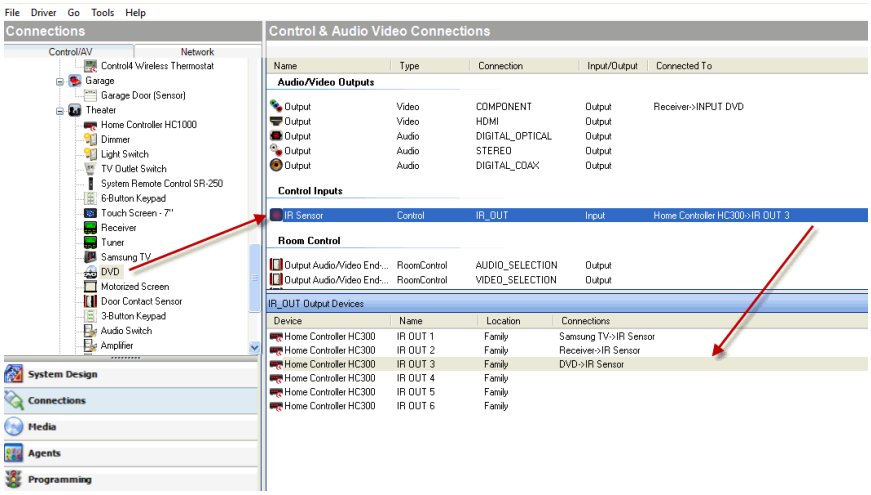
1. In Connections, click the **Control/AV** tab.
2. Select a **device** in the Control/AV tab. The Control & Audio Video Connections for the selected device display in the top pane.
3. Select one of the device's connections in the top pane. The available connections for the selected connection display in the bottom pane.
4. To make a connection, **drag** a device's input (or output) in the top pane to the output (or input) in the bottom pane.



Example 1: Make Receiver Connections

In the top pane under Audio Video Inputs:

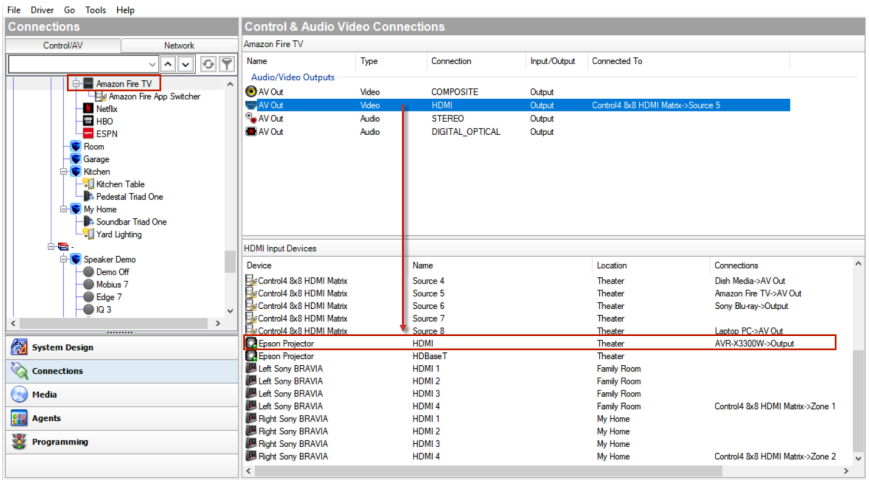
5. Click **INPUT** DVD **(Video-COMPOSITE)**, and drag it to **DVD (Output–Theater)** in the bottom pane.
6. Click **INPUT VIDEO 1 (Video-COMPOSITE)**, and drag it to **Home Controller HC-800 (Video Out 1-Theater)** in the bottom pane. This connects the Receiver Video 1 input to the controller Video 1 output.
7. Click **INPUT DVD (Audio-STEREO)**, and drag it to **DVD (Output-Theater)** in the bottom pane.
8. Click **INPUT VIDEO 1 (Audio-STEREO)**, and drag to **Controller (Stereo 1-Theater)** in the bottom pane.
9. In the top pane under the Control Inputs pane (scroll down), click **IR Sensor (Control-IR_OUT)**, and drag it to **Controller (IR Output 2-Theater)** in the bottom pane.



Example 2: Make Television Connections

In the top pane under the Audio Video Inputs pane:

10. Click **AV (Video-COMPOSITE)**, and drag it to **Receiver (Output-Theater)** in the bottom pane.
11. Click **AV (Audio-STEREO)**, and drag it to **Receiver (Output -Theater)** in the bottom pane.
12. Under Control Inputs, click **IR Sensor (Control-IR_OUT)**, and drag to **Controller (IR Output 1-Theater)** in the bottom pane.

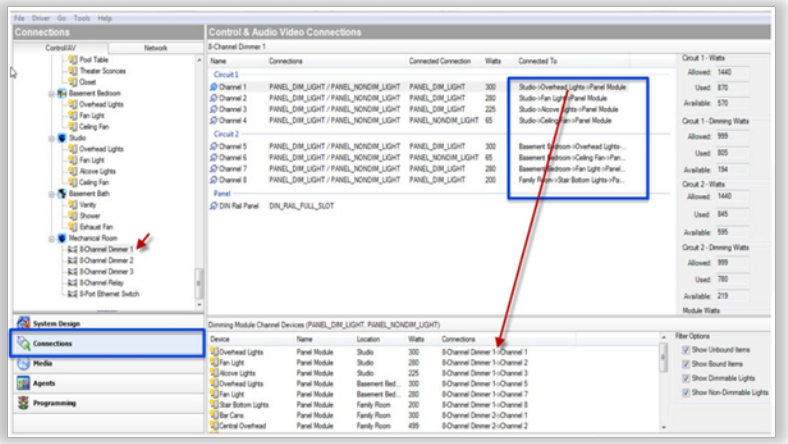


Example 3: Make module and load connections for Centralized Lighting

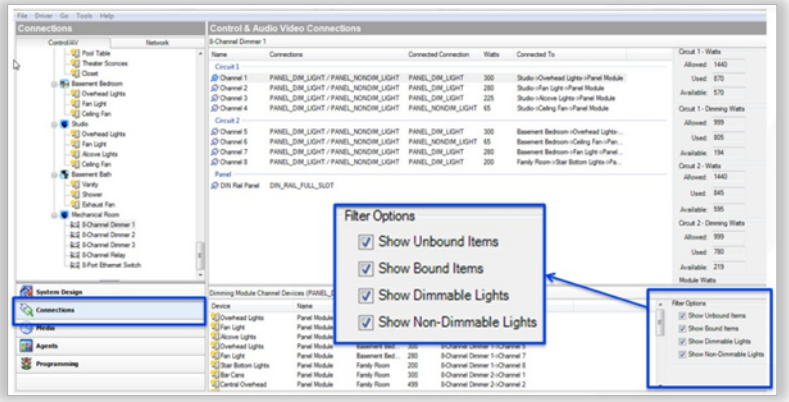
In the Control/AV tab:

13. Select the room where the module is located, **Mechanical Room**, and then select the module, for example, **8-Channel Dimmer 1**.

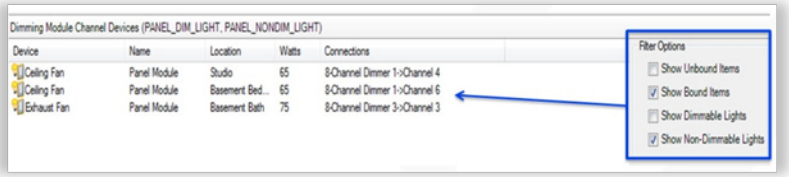
14. In Control & Audio Video Connections, locate the first entry **Channel 1** under Circuit 1.
15. Click **Channel 1** and drag it to **Overhead Lights** in the bottom pane.
16. Click **Channel 2** and drag it to **Fan Light** in the bottom pane.
17. Click **Channel 3** and drag it to **Alcove Lights** in the bottom pane.
18. Note 'Connected To' in the top pane and 'Connections' in the bottom pane. You should see that the module and load are now connected.



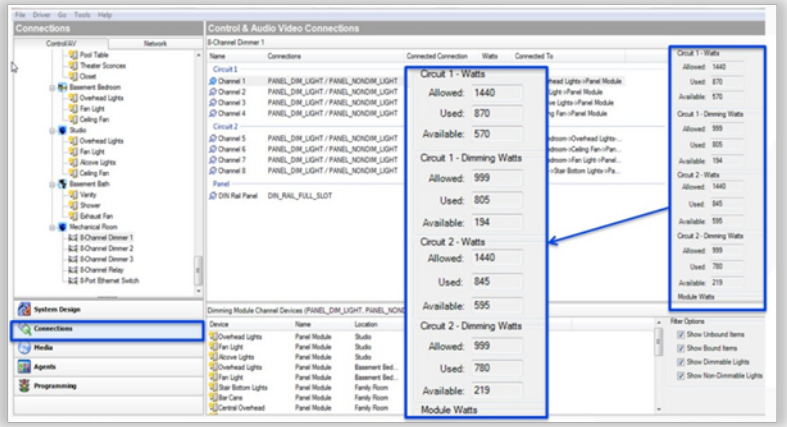
19. Filter the loads by Unbound, Bound, Dimmable lights, and Non-Dimmable lights:



20. The following example shows bound, non-dimmable lights. This is an easy way to make sure all of your connections are correct.



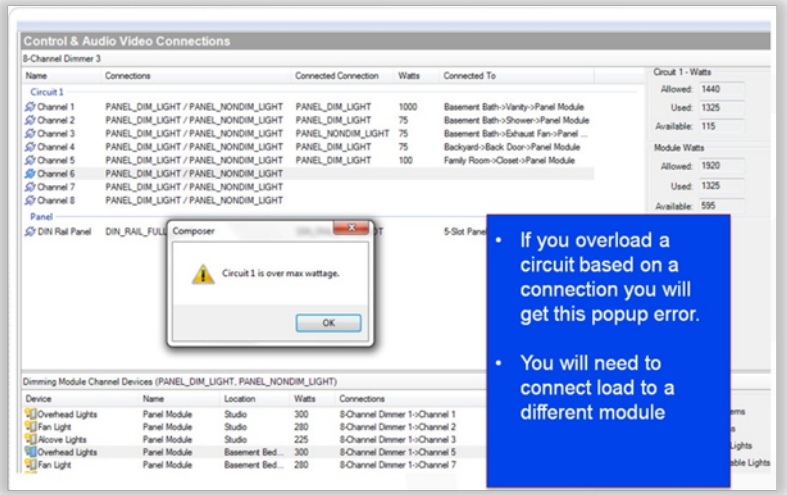
21. View the wattage: max, used, and available wattage for each circuit as you make the connections.



Watt types:

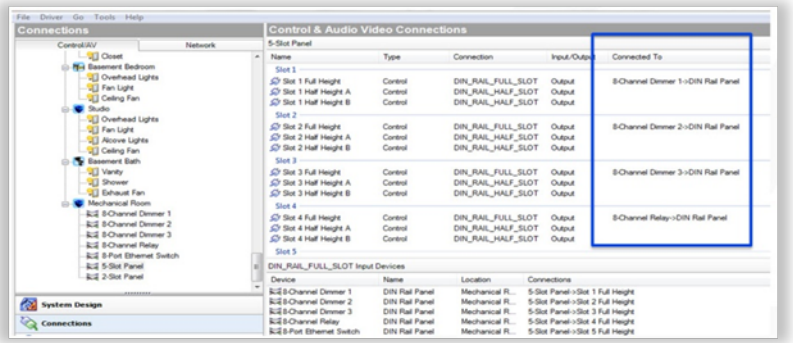
- **Circuit watts**—The total number of watts allowed on each circuit.
- **Dimming watts**—The dimming number of watts allowed when using Arc-Fault breakers.
- **Module watts**—The total number of watts allowed for the module.

22. If you get an overloaded circuit error message, connect the load to a different module.



23. Connect the modules to the panels.

- It's easier to connect from the panel to the module.
- Ethernet switches are installed in Slot 5 (bottom slot).
- If 8-channel dimmers are mixed with other module types, the dimmers should be installed toward the top of the panel for the best heat ventilation.

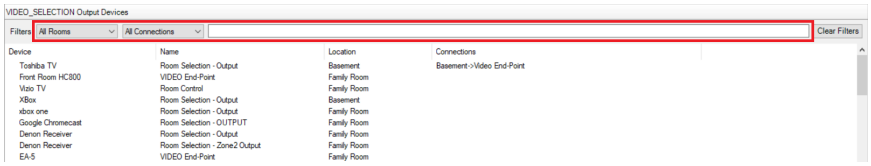

File Driver Go Tools Help
Connections
Control/AV
Network
Closet
Basement Bedroom
Overhead Lights
Fan Light
Ceiling Fan
Studio
Overhead Lights
Fan Light
Alcove Lights
Ceiling Fan
Basement Bath
Vanity
Shower
Exhaust Fan
Mechanical Room
8-Channel Dimmer 1
8-Channel Dimmer 2
8-Channel Dimmer 3
8-Channel Relay
8-Port Ethernet Switch
5-Slot Panel
2-Slot Panel
System Design
Connections
Control & Audio Video Connections
5-Slot Panel
Name
Type
Connection
Input/Output
Connected To
Slot 1
Slot 1 Full Height
Slot 1 Half Height A
Slot 1 Half Height B
Control
DIN_RAIL_FULL_SLOT
DIN_RAIL_HALF_SLOT
Output
8-Channel Dimmer 1->DIN Rail Panel
Slot 2
Slot 2 Full Height
Slot 2 Half Height A
Slot 2 Half Height B
8-Channel Dimmer 2->DIN Rail Panel
Slot 3
Slot 3 Full Height
Slot 3 Half Height A
Slot 3 Half Height B
8-Channel Dimmer 3->DIN Rail Panel
Slot 4
Slot 4 Full Height
Slot 4 Half Height A
Slot 4 Half Height B
8-Channel Relay->DIN Rail Panel
Slot 5
DIN_RAIL_FULL_SLOT Input Devices
Device
Name
Location
Connections
8-Channel Dimmer 1
8-Channel Dimmer 2
8-Channel Dimmer 3
8-Channel Relay
8-Port Ethernet Switch
DIN Rail Panel
Mechanical R...
5-Slot Panel->Slot 1 Full Height
5-Slot Panel->Slot 2 Full Height
5-Slot Panel->Slot 3 Full Height
5-Slot Panel->Slot 4 Full Height
5-Slot Panel->Slot 5 Full Height

Connection Filters

In Composer Pro Connections view, you can use filters to narrow the output connections to more easily find connections. This can save you time in small and large projects.

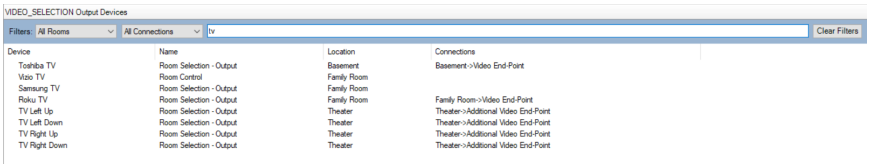
To use Connection Filters:

1. In Composer Pro, click **Connections**.
2. Select a connection to make, for example, click on a **room** and **Video End-Point**.
3. In the bottom-right pane, VIDEO_SELECTION Output Devices, the available filters are listed above the output devices.



1. Select a room to filter output devices by a specific room.
2. Select All Connections, Not Connected, or Connected to filter output devices by connection status.
3. Enter text to filter output devices by name, location, or connection.
4. Click Clear Filters to remove any applied filters.

> Tip: When filters are active, the background around the filters is blue.



Connecting rooms

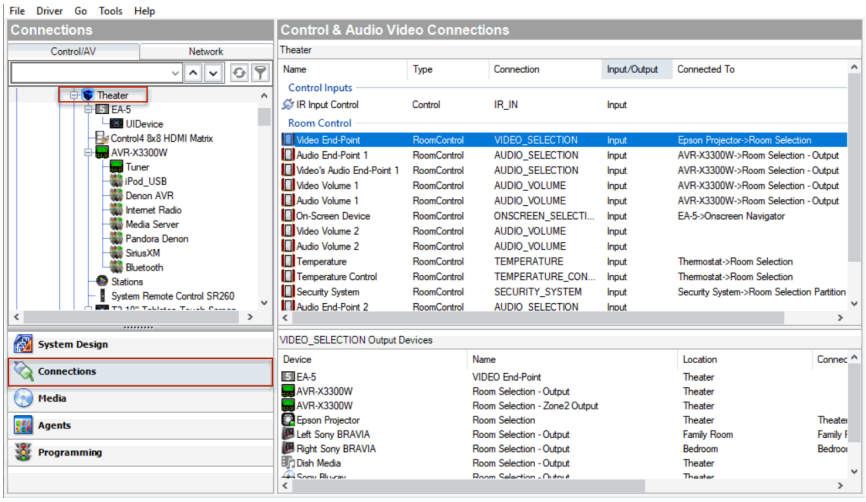
Use the Room Connections to set configuration connection options to customize and optimize audio and AV paths to control devices in a room.

Get room connections

To get to room connections:

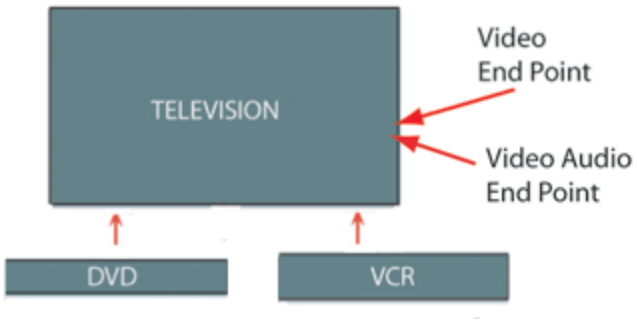
1. Start Composer Pro and connect to a Director.
2. Click **Connections**.
3. Select the **room** in the project tree.
4. Click the **Control/AV** tab. The Control & Audio Video Connections pane displays.

   If you use System Design views, room connections use the default settings according to the devices you add.



> Example: For a basic system with a television, DVD player, VCR, and satellite, Composer Pro by default makes the television the video end point which is the end of the AV path for viewing video. The video audio end point is the end of the AV path for listening and managing volume for sound when viewing a DVD, VCR or satellite.

> Example: Video End-Point—The Plasma Television displays video for DVD, VCR, and satellite.



> Note: For the Control4 system to work properly, verify that the default settings match your physical environment. Define each room connection according to your Control4 system. If the default settings do not match your system setup exactly, change the settings to match the physical environment, and define each room connection according to that system setup.

An End Point defines the software path that an audio or video signal must follow to reach the desired destination.

> Example: When a device is selected as a Video End Point, start at the device and work backward to figure out the source-selection and input-switching that must take place to display video.

> Note: Speakers are not included in the Control4 project configuration.

A room provides two priority levels for end points of audio (Audio End Point 1 and 2) and two for audio playing for video (Video Audio End Point 1 and 2). The system automatically connects the first end point in the room to End Point 1 as the first priority. If that device is part of AV path selected, it manages the volume in the room automatically.

Room connection types

The general types of room connections are:

- **Video End Point**–On the Control4 system, this is the end of the path in the selected room that defines video. The default is the Television.
- **Audio End Point 1 and 2**–On the Control4 system, this is the end of the path in the selected room that defines audio. The default is the first applicable devices added to the system, for example, a Speaker Point. However, when a television is added, it overrides the initial setting. When a receiver is added, it overrides the television.
- **Video Audio End Point**–On the Control4 system, this is the end of the path in the selected room that defines audio when watching video on the Control4 system. The default is the first applicable device added to the system. However, when a television is added, it overrides the first device. When a receiver is added, it overrides the television.
- **Video Volume 1 and 2**–Options that let you set the volume management to a device that is not an audio end point or a video audio end point.

Example: If you added an AV switch to your system, the television is probably the video audio end point, but you want to use the AV switch for volume control to utilize added features of the switch.

- **Audio Volume 1 and 2**–Options that let you set the volume management to a device that is not an audio end point or an audio video end point.

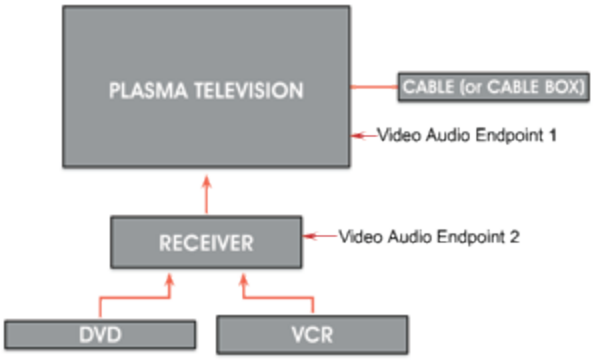
  Example: If you added an audio switch to your system, another device is probably the audio end point, but you should use the audio switch for volume control.

- **On-Screen Device**–Defines the device (television) that displays the on-screen Navigator.
- **Temperature and Temperature Control**–Defines the device that manages the temperature in the room, such as a thermostat.
- **Security System**–Defines the device that manages the security system in the room, such as a security system.

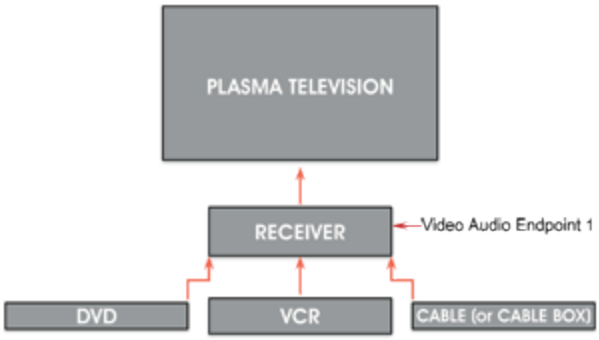
Examples of system configurations

The following examples show possible system configurations.

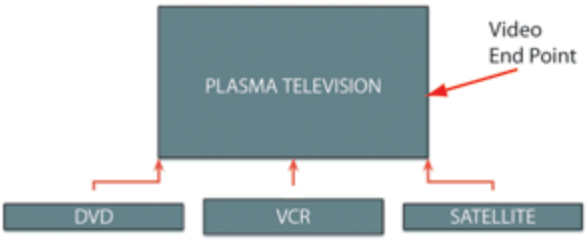
> Example 1: Video Audio End Point 1 and 2—The Plasma Television is Video Audio End Point 1 and the receiver is Video Audio End Point 2The Plasma Television manages the volume when the homeowner watches cable, and the receiver manages the volume when the homeowner watches the DVD or VCR.



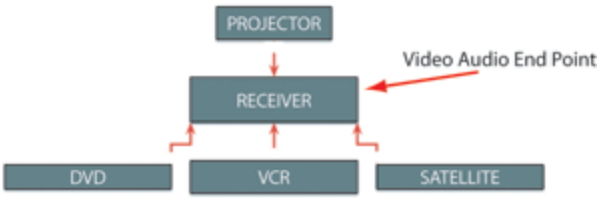
Example 2: **Video Audio End-Point 1**—The receiver is Video Audio End Point 1 and manages the volume in the room when the homeowner watches video using the DVD, VCR, or cable.



Example 3: **Video End-Point**—The Plasma Television switches video for DVD, VCR, and satellite.



Example 4: **Video Audio End-Point (combined)**—The receiver switches both audio and video for DVD, VCR, and satellite.



Example 5: **Audio End-Point**—The receiver switches audio for DVD, VCR, and satellite.



> Tip: Understand the physical room connections on your system. The system uses default settings. It cannot auto-detect how your system is set up.

Verify default room connections

To verify default room connections including prioritized AV audio end point providers:

1. Add devices to the project using Composer Pro System Design view. See Composer Pro Getting Started for details.

   While you set up the project, room connections are set for you according to the default settings. The defaults are set by rules in the system, and they might not match your physical environment. Manually ensure that the settings match your desired outcome.

2. Verify that the initial room connections are set up correctly for each room.

1. From Connections, click the **Control/AV** tab (default).
2. Click the room in the project tree.
3. Verify each **connection** by ensuring that it mirrors your exact hardware setup.
4. To change a connection, select a **device** in the project tree, and then select the **device** to change in the Control & Audio Video Connections pane.
5. In the Room Control list, select an item in the upper list, and then drag it to an **item** in the lower list to connect the two items. When successful, both lists update to reflect the connection.

Example: To show how to change a connection from the top center pane, click **Video Audio End Point (RoomControl-AUDIO_SELECTION)**, and drag it to the bottom pane to connect it to **Television (Room Selection - Output-Theater)**.

Example Project: Using the sample project, ensure that the following room connections exist as outlined in the table.

Room	End Point or Volume	Device (End Point or Volume Management)
Theater	Video End Point 1	Television (default setting)
	Audio End Point 2	Receiver (default setting)
	Video Audio End Point 1	Receiver (default setting)
	Video Volume	Not set
	Audio Volume	Not set
Bedroom	Audio End Point Mini	Touch screen
	Audio Volume	Touch screen
Front	There are no video or audio End Points or any devices that can manage volume in the Front room, so you don't need to identify the video or audio source or volume control device in that room, or modify the room for room connections.	

3. Create a connection to define the other devices in the room where you want volume.

1. Select a room in the project tree.
2. In the Room Control list, select an item in the Control & Audio Video Connections, and then drag it to an item in the lower list to connect the two items. When successful, both lists are updated to reflect the connection.

Example: From the top center pane, click **Video Volume 2 (RoomControl-AUDIO_VOLUME)**, and drag to the bottom center pane to connect it to Television (Room **Selection - Output-Theater)**.

Connecting devices to the network

After you complete your planning and design of a Control4 system (adding the buildings, rooms, devices, etc., see the Composer Pro Getting Started guide for details), you are ready to make the necessary connections in the system.

Connecting a device to the network

The Network tab lists all devices in the systems with a network connection and lists network addresses.

Verify the network address for any device that communicates to the controller using TCP/IP, Wi-Fi, Zigbee, Zigbee Pro or any other device that uses a network address.

To connect network devices:

1. Start Composer Pro and connect to a Director.
2. Click **Connections** > **Network** tab.
3. Select the device, and then click **Identify** for the wizard to open.
4. Follow the on-screen instructions to identify each device as indicated. After identifying the network connection, the device's address appears.
5. Use the **Network** tab to identify devices to the Control4 system that use a network address.

   There are two places to verify network connections: the Network tab and the Tools menu.

Configuring a Wi-Fi connection

Use the System Manager tool to connect to Wi-Fi.

Some devices can be connected directly to Ethernet, and then can be configured on a Navigator. See your device's installation instructions for details about how to configure wireless on a Navigator page (**More** > **Settings** > **Network**).

Prerequisites

To establish a Wi-Fi network connection to a controller or other wireless device in the Control4 system, first establish an Ethernet connection, and then configure the Wi-Fi.

To connect to Wi-Fi, complete the following steps:

1. Establish an initial temporary Ethernet connection from the device to the Ethernet network using a Category 5 (CAT5) cable.
2. Start Composer Pro and connect to a Local Director.
3. From the Tools menu, select **System Manager**.
4. From the Devices pane, select the network address for the device you want to set up, and click **Connect**.
   - If the device's network address is not on this list, click **Refresh**.
   - If it still does not appear, click **Add** to enter it manually.
   - If you do not know the network address, you can find it at the **Connections** > **Network** tab.

5. Click the **Network** tab, and then click **Configure**.
6. Click **Next** when the Network Configuration Wizard dialog appears. Continue through the wizard screens and provide the following information appropriate for your system. Much of this information has to match that of your Wireless Access Point (WAP).
7. Enter the new **device name**. Do not include spaces in the new name.
8. Indicate the network type: **Wireless (WiFi) network**.
9. Indicate the method for obtaining DNS server address: **DHCP** or **Static IP**. Control4 recommends DHCP (automatically selected).
10. Enter the **SSID** number.
11. Enter the **WEP** key (if any).
12. Enter the encryption type (**64** or **128**).
13. Click on a key type (**hex** or **ascii**).
14. Click **Finish** to complete the wizard; reboot the adapter to apply the network configuration changes.
15. Disconnect the Ethernet cable from the controller.

Verifying the network connections

Use the Network tab or Network Tools to verify the Control4 system network connections.

Prerequisites

Ensure that the devices to be connected have been added to the project.

Network Tab

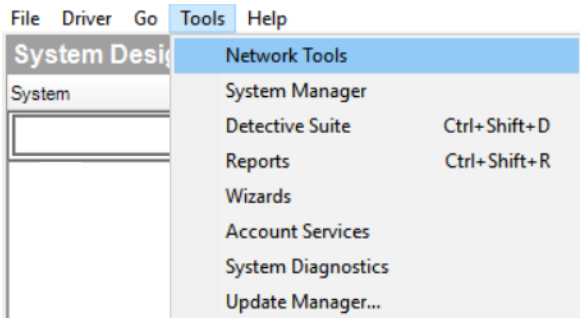
To ensure that all network connections are identified on the Network tab:

1. Click **Connections** > **Network** tab > **IP Network**.
2. In the Address column, check whether there is an address for every line item.

Network Tools Option

To ensure that all Network connections are connected and active at the Network Tools:

1. From the Tools menu, select **Network Tools**.



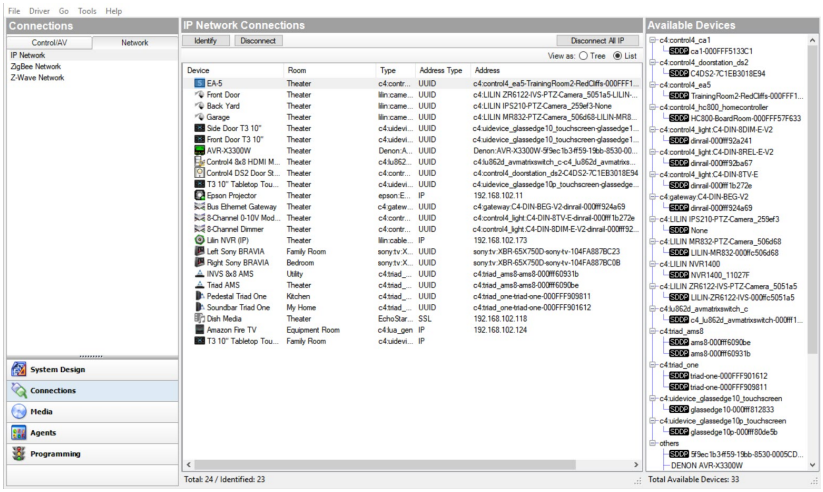
2. Check both the IP Network and ZigBee Network tabs for Green, Yellow, and Red connection icons.

   The colors indicate the following:

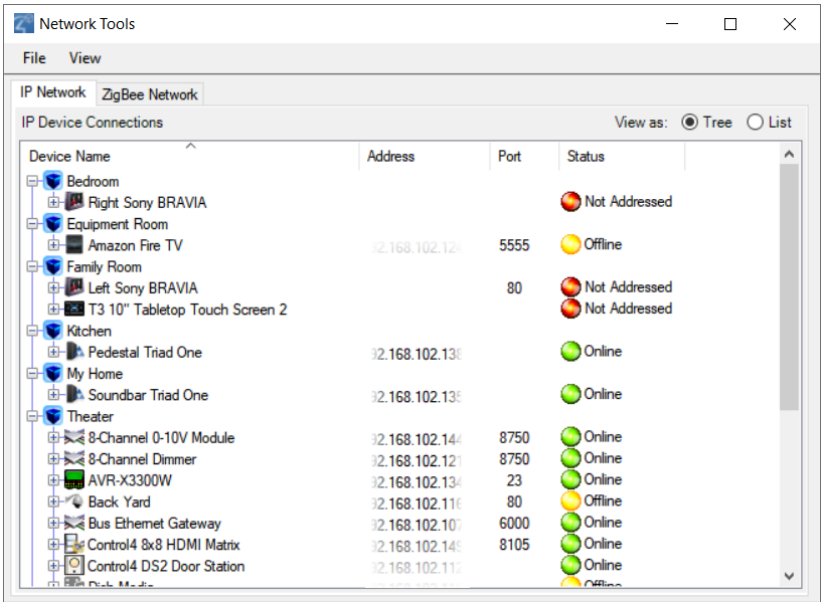
- **Green**—An address is identified and the device is online. For example, the dimmer is identified and communicating to the system.
- **Yellow**—An address is identified and the device is offline. For example, if the System Remote Control goes to sleep, the status turns yellow. This indicates that the System Remote Control has been identified, but is offline. Make this device active so it can communicate to the system.
- **Red**—A device is not identified. Go to the **Connections** view > **Network** tab and identify the device to the system.

Tip**: Be patient.** In cases where the Zigbee mesh is moved, it can take up to five minutes for all connections to get re-established.

3. If you find yellow or red icons, do the following:
   - **Yellow icons**—Go to the device and activate it according to its documentation.
   - **Red icons**—Go to the **Connections** view > **Network** tab and identify the device to the system.



Example: At this point in your project, the System Remote Control should be yellow (or the only device not green). The System Remote Control turns green as soon as you wake it. To wake the System Remote Control press the red Control4 **4** button.



Tip: You can also review a device's Zigbee signal strength by checking the strength meter icons in the Signal column. The strength meters show the strength of the signal as detected by the next nearest Zigbee device.

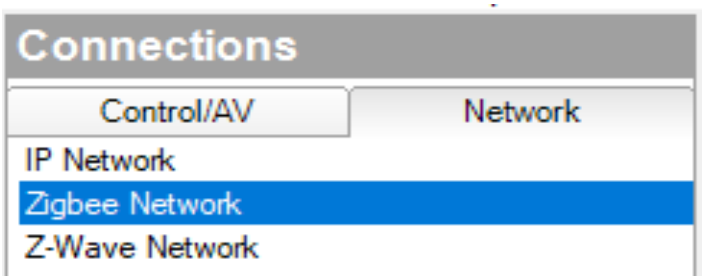
Connecting Zigbee devices

After you have added all the necessary device drivers into your project and configured a Zigbee mesh controller, you are ready to make the necessary connections for these drivers.

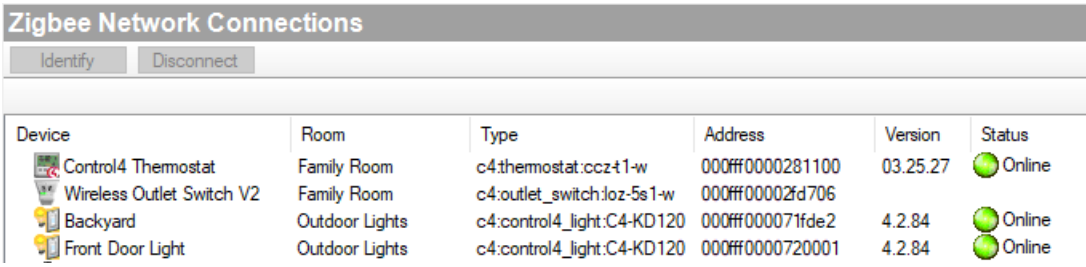
Connecting Zigbee device drivers to the Zigbee network

To connect a Zigbee device driver to the Zigbee controller:

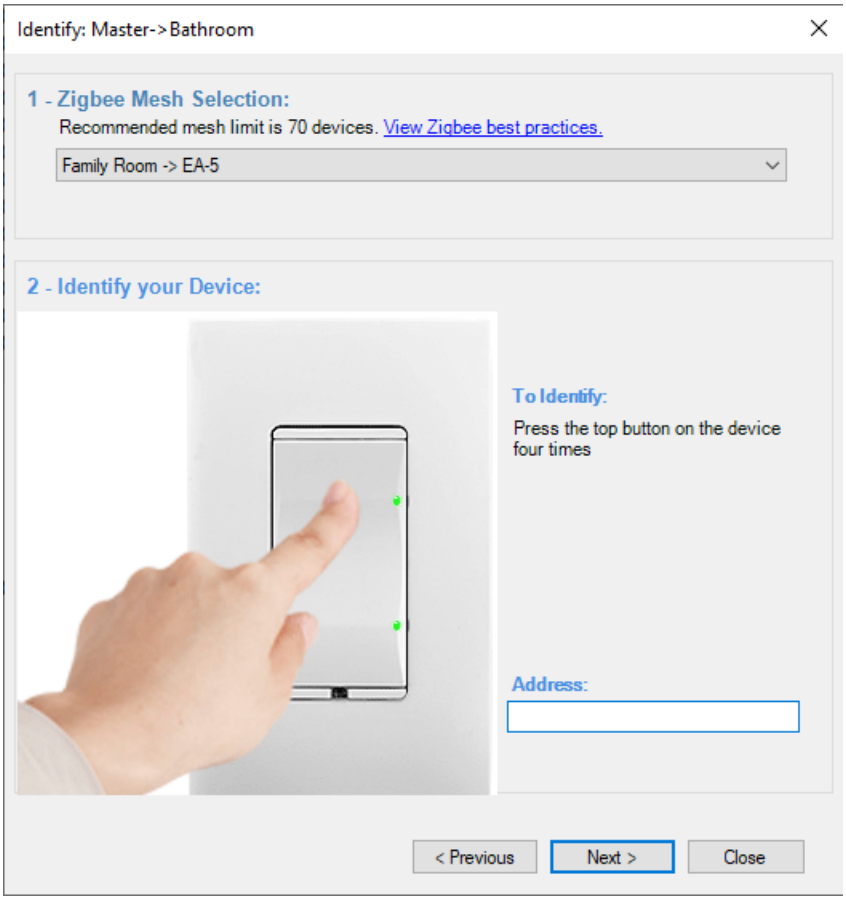
1. In Connections in the *Network* tab, select **Zigbee Network**.



A list of Zigbee device drivers will show in the *Zigbee Network Connections* window.



2. **Double-click** on the Zigbee device driver to open the identify window or highlight the device and click on the **Identify** button.



3. Identify (add) the Zigbee device according to the instructions, usually by pressing a Zigbee button on the device.

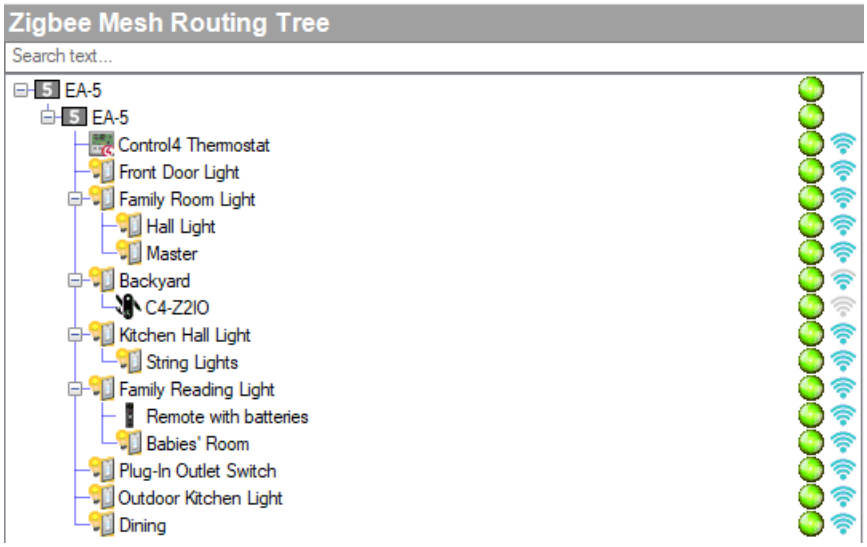
> **Note**: You have 60 seconds to identify (add) the Zigbee device to the network and a timer will show the time remaining. If you run out of time, close the window and try to identify the Zigbee device again.

4. If the device is added, configured, and identified successfully, the address will show in the address field.

> Note: If the Zigbee device will not identify (add), you should try to remove the device and then try to identify the device again.

Zigbee Mesh Routing Tree

When the device is identified and added to the Zigbee network, the Zigbee Mesh Routing Tree window will show the device online with a green icon.


Zigbee Mesh Routing Tree
Search text...
EA-5
EA-5
Control4 Thermostat
Front Door Light
Family Room Light
Hall Light
Master
Backyard
C4-Z2IO
Kitchen Hall Light
String Lights
Family Reading Light
Remote with batteries
Babies' Room
Plug-In Outlet Switch
Outdoor Kitchen Light
Dining

Connecting Z-Wave devices

After you have added all the necessary device drivers and motorization, sensor or light drivers into your project, you are ready to make the necessary connections for these drivers.

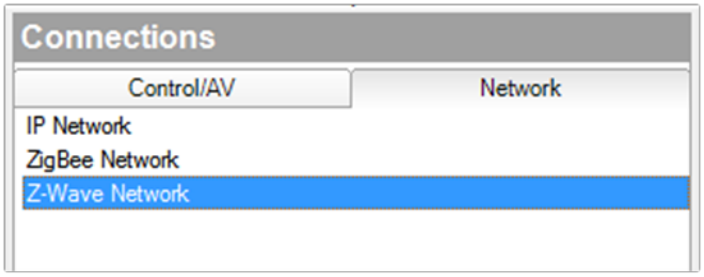
There are two types of connections that need to be made:

- Connect Z-Wave device drivers to the Z-Wave controller and identify them into the project
- Connect Z-Wave device drivers virtually in the Control4 project to motorization, sensor, or light drivers

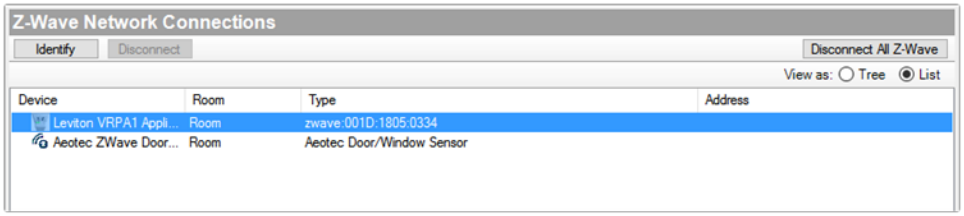
Connecting Z-Wave device drivers to the Z-Wave network

To connect a Z-Wave device driver to the Z-Wave controller:

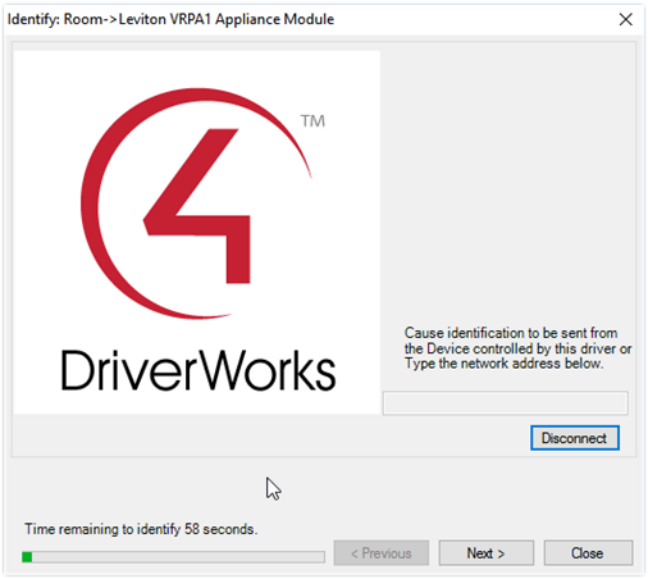
1. In Connections in the *Network* tab, select **Z-Wave Network**.



A list of Z-Wave device drivers will show in the *Z-Wave Network Connections* window.



2. **Double-click** on the Z-Wave device driver to open the identify window or highlight the device and click on the **Identify** button.

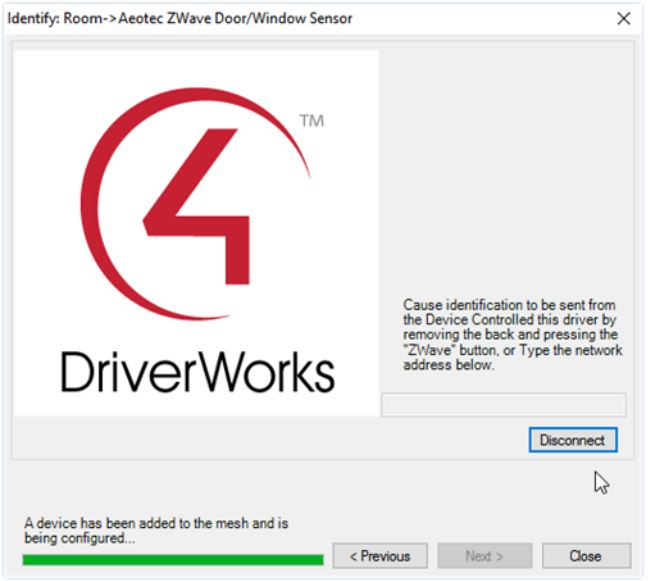


3. Identify (add) the Z-Wave device according to the manufacturer's instructions, usually by pressing a Z-Wave button on the device. See the documentation for the Z-Wave device for more information.

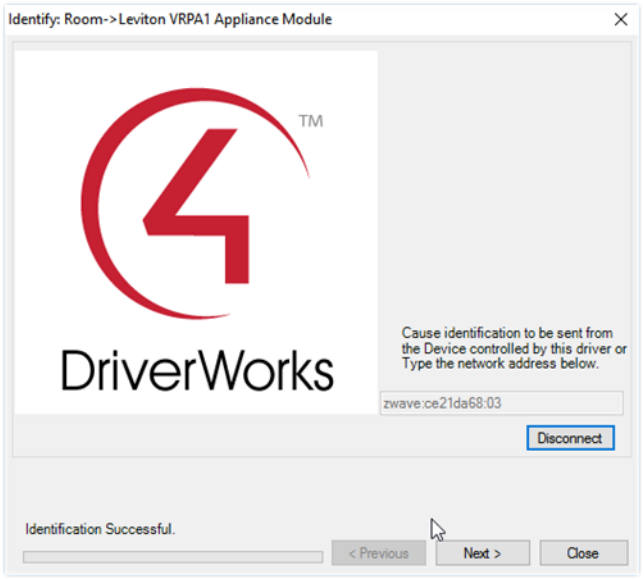
> Note: You have 60 seconds to identify (add) the Z-Wave device to the network and a timer will show the time remaining. If you run out of time, close the window and try to identify the Z-Wave device again.

4. After adding the Z-Wave device to the Z-Wave network, the driver will do some additional configuration.

Important: Do not skip this step by closing the window or clicking next!



5. If the device is added, configured, and identified successfully, the address will show in the address field and the timer instructions will change to say “Identification Successful”.

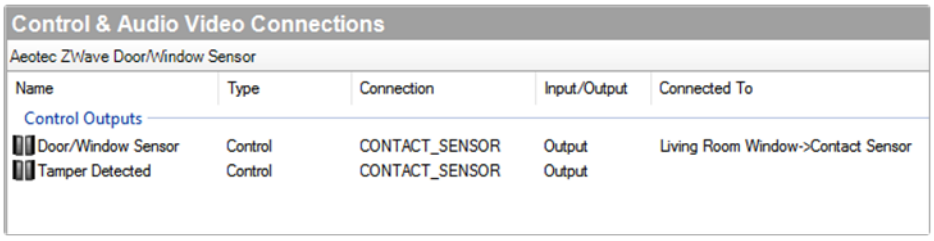


> Note: If the Z-Wave device will not identify (add), you should try to remove the device and then try to identify the device again. See “*Removing Z-Wave devices*”.

Connecting Z-Wave device drivers to motorization, sensor or light drivers

To connect a Z-Wave device driver to a motorization, sensor or light driver:

1. In Connections under the Control/AV tab, select the Z-Wave device driver. The *Control & Audio Video Connections* window will show the available connections.



2. Click on the Control Output connection **Door/Window Sensor** and the available devices to connect appear below in the *CONTACT_SENSOR Input Devices* window.



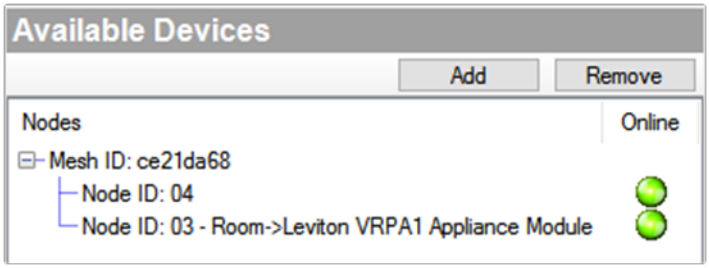
3. **Click and drag** the contact sensor output in the upper window to the contact sensor input in the lower window. When a valid connection is available, the cursor changes and has a + symbol. **Release** the mouse button to make the connection.



When the Z-Wave devices are connected to the appropriate motorization, sensor or light drivers, the UI will now show appropriate drivers to represent the Z-Wave devices. Now the Z-Wave device drivers must be connected to the Z-Wave controller and identified in the project.

Available Devices

When the device is identified and added to the Z-Wave network, the Available Devices window will show the device online with a green icon. A Z-Wave device that is added to the Z-Wave network and also identified to a device driver will show the device driver name and location next to the Node ID.



Z-Wave devices that are added to the Z-Wave network, but not identified to a device driver will show up with just the Node ID.

Removing Z-Wave devices

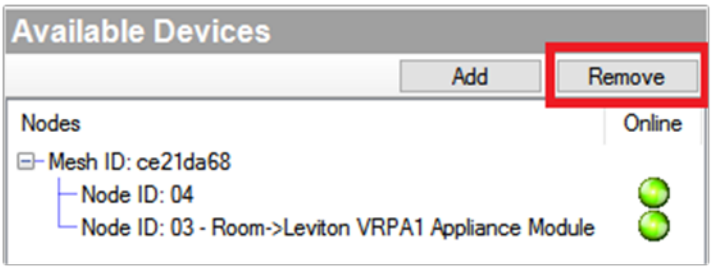
Z-Wave devices can be removed from any network at any time by using the Remove button found in *Available Devices*. This is true even if they are not part of the network performing the remove operation.

Removing Z-Wave devices from a previously installed network requires an available Z-Wave controller and interaction with the Z-Wave device-usually by pressing the Z-Wave button on the device. There is no “Remove from mesh” button press sequence similar to ZigBee Pro devices.

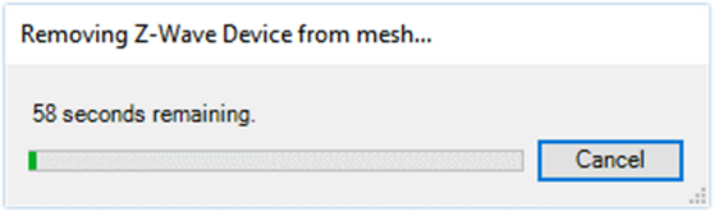
Removing Z-Wave devices from the network

To remove a Z-Wave device from the network:

1. In Connections in the Z-Wave Network, click **Remove** in the *Available Devices* window.



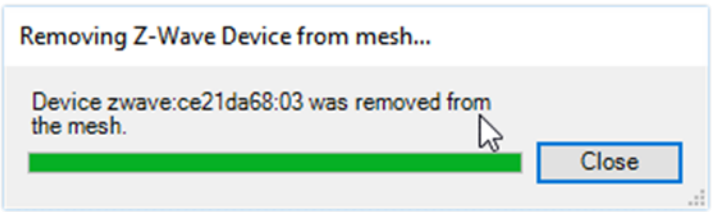
The Removing Z-Wave Device window appears and a 60 second timer starts.



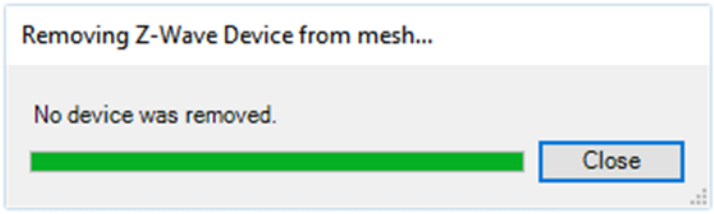
2. Remove the Z-Wave device from the network according to the manufacturer’s instructions, usually by pressing a Z-Wave button on the device. See the documentation for the Z-Wave device for more information.

> Note: If the device is not removed from the network before the timer ends, close the window and click the **Remove** button to try again.

3. If the device was removed successfully, the timer will stop and the window will say the devices was removed from the network.



4. If the device is not removed from the network before the timer ends, close the window and click the **Remove** button to try again.



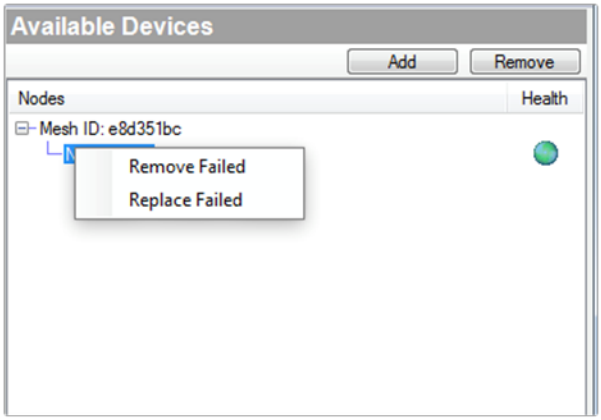
Removing failed Z-Wave devices

If a Z-Wave device has become lost or inoperable so that a physical button press cannot be performed to remove it from the network, the Remove Failed option is provided. Remove Failed is used to force a Z-Wave device off of the network.

> Important! Do not use this option if the device is operational. See "*Removing Z-Wave devices from the network*". Use this option only if a device has physically failed and is inoperable!

To remove a failed Z-Wave device:

1. In Connections under Z-Wave Network, right-click on the **Node ID** of the failed Z-Wave device, and select **Remove Failed.**



2. The controller will make one last attempt to communicate with the Z-Wave device. If the device successfully communicates, the Remove Failed will not proceed and the device must be removed using the Remove button instead. Remove the device according to the manufacturer's instructions, usually by pressing the Z-Wave button.
3. If the communication attempt fails, the device will be removed from the network and will not be tracked as a Z-Wave node by the Z-Wave controller. Be aware that this device must now be reset to defaults before using the device again within the system. See the manufacturer's instructions for more information.

Replacing failed Z-Wave devices

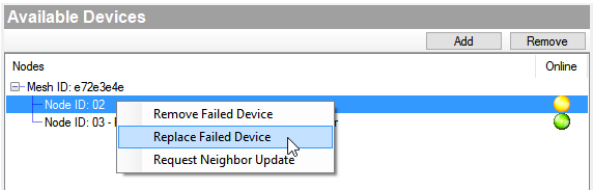
If a Z-Wave device has become lost or inoperable so that a physical button press cannot be performed to remove it from the network, the Replaced Failed option is provided. Replace Failed is used to force a Z-Wave device off of the network and prompt the user for a replacement. The new device can be either the same type or different.

This option allows you to replace a Z-Wave device and preserve the same Node ID. This can be useful if you have some direct device associations done between Z-Wave devices. It is *not* needed for most Control4 systems.

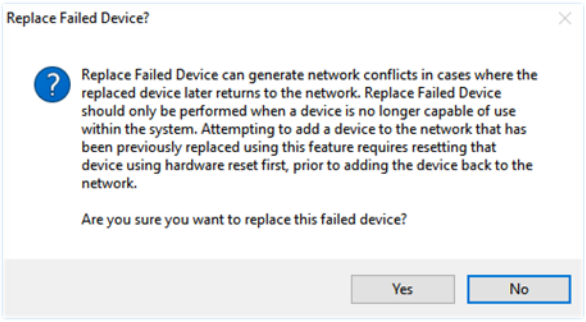
> Important! Do not use this option if the device is operational. See "*Removing Z-Wave devices from the network*". Use this option only if a device has physically failed and is inoperable!

To replace a failed Z-Wave device:

1. In Connections under Z-Wave Network, right-click on the **Node ID** of the failed Z-Wave device, and select **Replace Failed.**



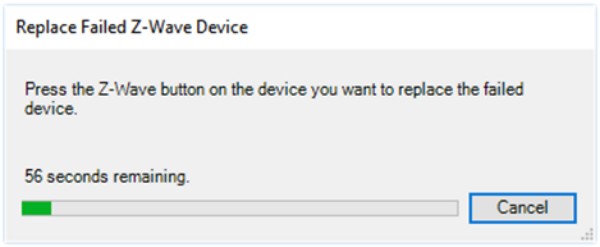
2. Click **Yes** to continue only if you are replacing a failed device.



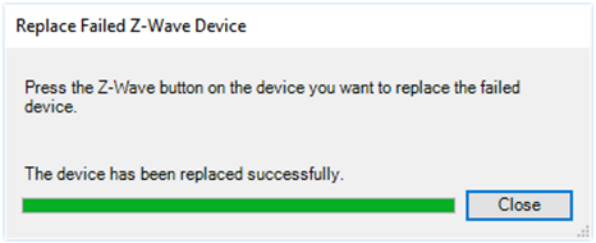
   The controller will make one last attempt to communicate with the Z-Wave device. If the device successfully communicates, the Replace Failed will not proceed and the device must be removed using the **Remove** button instead. Remove the device according to the manufacturer's instructions, usually by pressing the Z-Wave button.

   If the communication attempt fails, the device will be removed from the mesh and will not be tracked as a Z-Wave node by the Z-Wave controller. Be aware that this device must now be reset to defaults before using the device again within the system. See the manufacturer's instructions for more information.

3. Add the replacement Z-Wave device to the mesh according to the manufacturer's instructions (usually by pressing the Z-Wave button) before the timer expires.

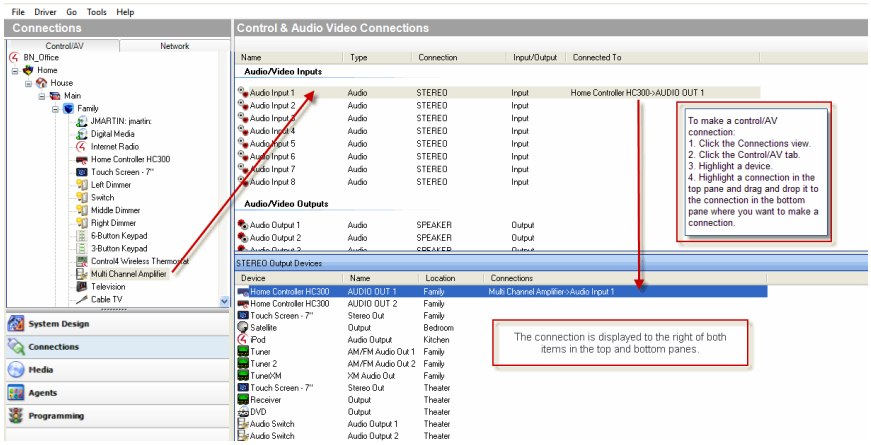


4. When the device is added successfully, the timer will show complete and a message will say the replacement was successful.



Connecting and managing control and AV devices

Control/AV connections are visible when you select the Control/AV tab in the Connections view. The Control/AV tab lets you define the physical connections between the controller or other devices, including AV signals, IRs, relays, contacts, and/or serial connections.



> Tip: If connections do not appear as needed, edit the driver to create the needed connections as described in “Editing a Driver Using the Driver Wizard.”

Verifying control and AV connections

Use the Control & Audio Video Connections pane to verify connections, and use the System Design view to verify room connections.

To verify all Control and *AV* connections by checking the *connection* list:

1. Click **Connections**, and select the project from the project tree. The Control & Audio Video Connections pane displays.
2. Carefully go through all your Control and AV connections by verifying each connection in the pane.

To verify all Control and *AV* connections by checking room properties:

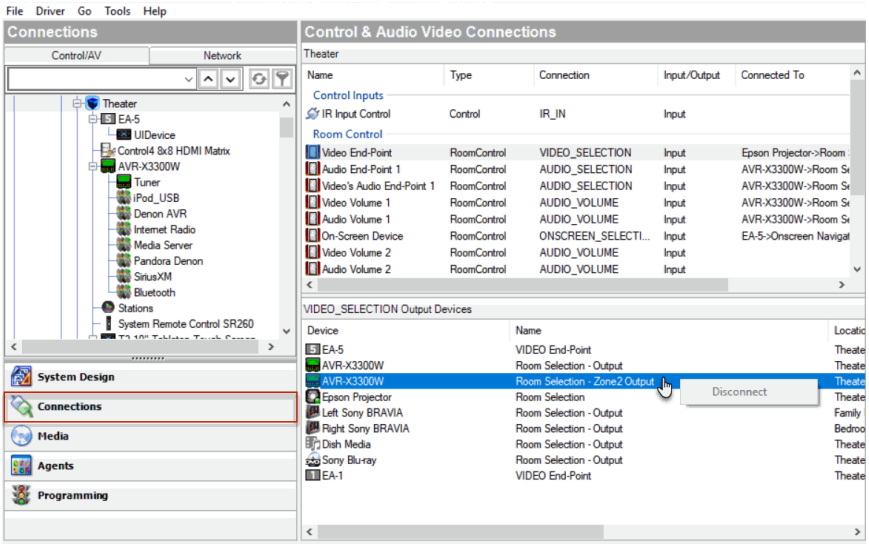
1. Start Composer Pro and connect to a Director.
2. Click **System Design**.
3. Select a **room** in the project tree.
4. Click the **List View** tab. On the List View tab check whether your AV devices are accessible in the room. If an AV device is in a room and in your project; but if it is not in the view, see “Connect and verify devices.”

Disconnecting or removing control/AV connections

Use the Connections view to remove and disconnect a connection.

To disconnect or remove a Control/*AV* connection:

1. Start Composer Pro and connect to a Director.
2. Click **Connections**.
3. Click the **Control/AV** tab.
4. In the Control/AV project tree, select a device for the device’s control and AV connections to appear.
5. In the Control and AV Connections pane, right-click an input (or output) connection and select **Disconnect**.



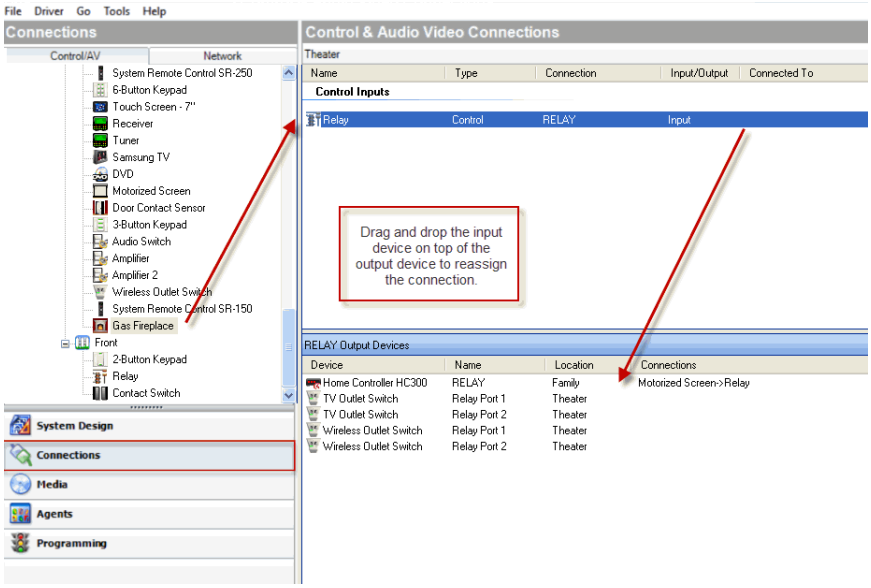
Re-assigning control/AV connections

Use the Connections view to reassign connections.

To re-assign Control/*AV* connections:

1. Start Composer Pro and connect to a Director.

2. Click **Connections** > **Control/AV** tab.
3. In the project tree, select a device. The device's control and AV connections appear.
4. In the Control and AV Connections pane, **drag** an input from the top pane to a different output on the bottom pane. The connection is moved to the specified output.



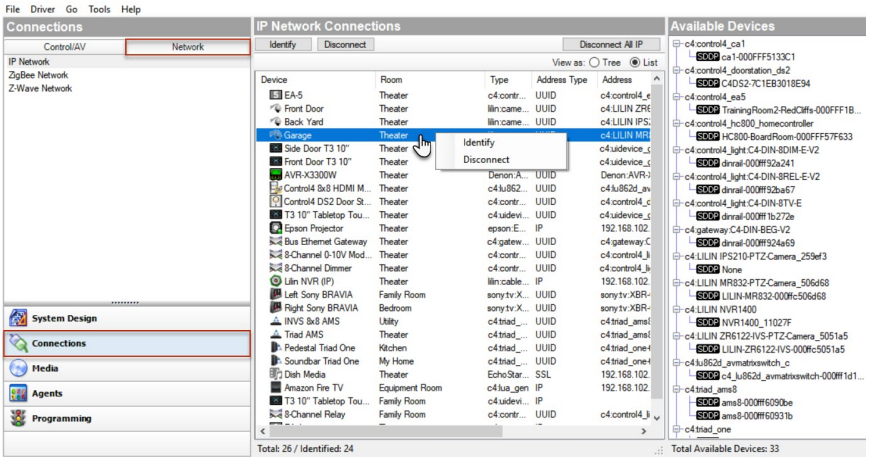
Updating connections when a location changes

If you use the same project but you change locations, update all of the Control4 system connection information in Composer Pro.

To update the connection information in an existing project:

1. Start Composer Pro and connect to a Director.
2. Click **Connections**.
3. Click the **Control/**AV tab, and review your connections to ensure they are updated in the current control and AV topology.
4. Click the **Network** tab. Disconnect all connections by right-clicking and selecting **Disconnect**.

5. Re-assign each connection.



Testing device connections

Use the Connections view to test that connected devices work.

After you've added and identified the device, in Connections check the Network tab to see if an IP address appears in the IP Network Connections pane. If it doesn't, the device has not been connected properly. Try to connect the device again.

Testing device controls

After you add an item to the project tree and the device is physically connected, test that you can control the device.

To ensure the devices are controllable:

1. Click **System Design**.
2. In the project tree, double-click the icon of each device for its Device Control window to appear.

Example: Television



3. Click the available controls in the graphical representation to:
   - Ensure that the commands work
   - Set the parameters temporarily (for example, configuring the LED lights on dimmers)

Notes:

- If you double-click a device and a Device Control window does not appear, it indicates that one is not available for that device or item.
- These user interfaces are not specific for each device and model. Understand the capabilities of a device before testing it.

Device Control examples

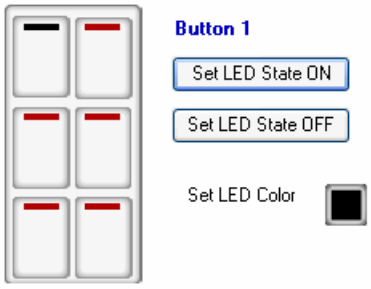
> Note: The Device Control windows in Composer Pro are provided for testing purposes only. When you make changes on the Device Control windows for each device, it only changes the device settings temporarily. Use the **Properties** pane or programming to change the device settings permanently.

The following examples show Device Control windows for various devices:

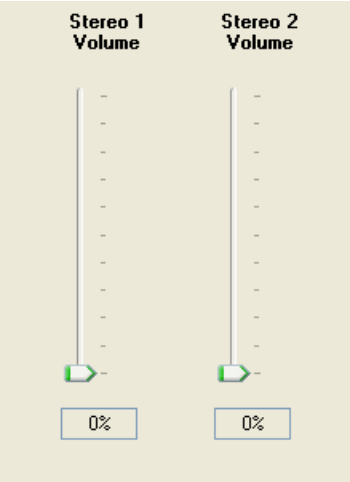
3 Button Keypad



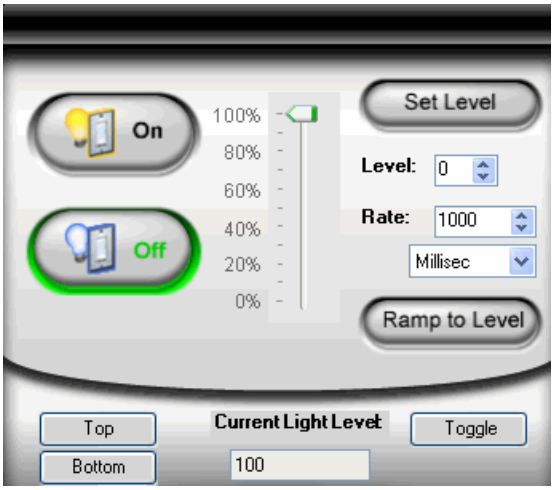
6 Button Keypad



Controller



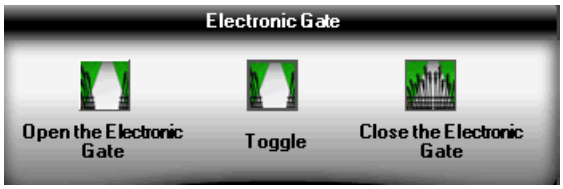
Dimmer



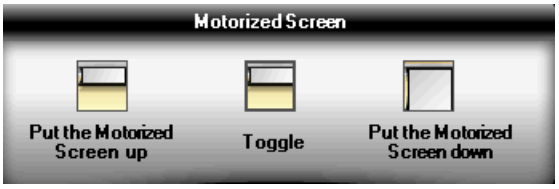
DVD Player



Electronic Gate



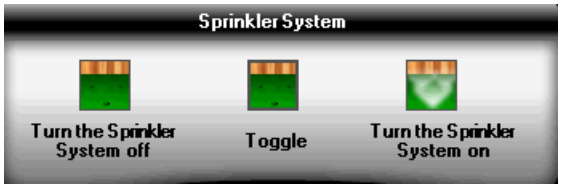
Motorized Screen



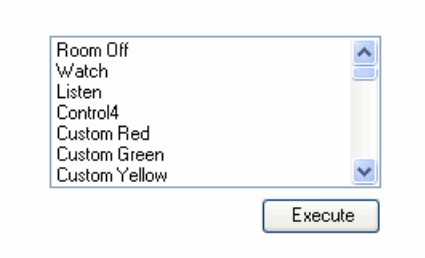
Receiver



Sprinkler System



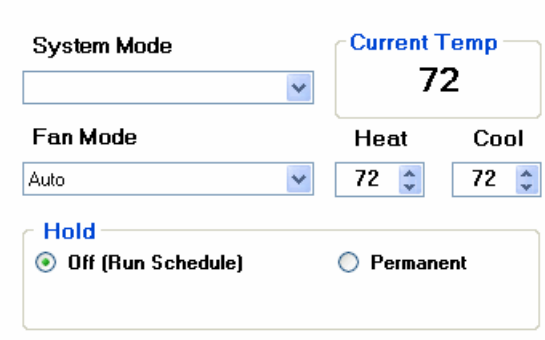
System Remote **Control, SR-250**



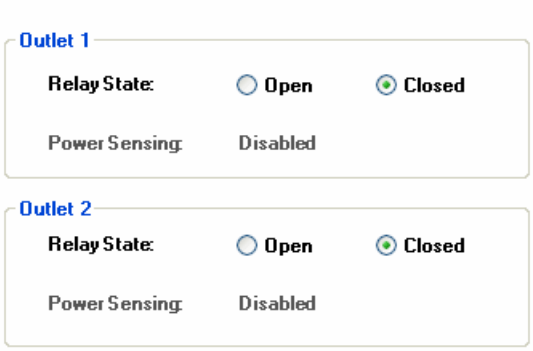
Television



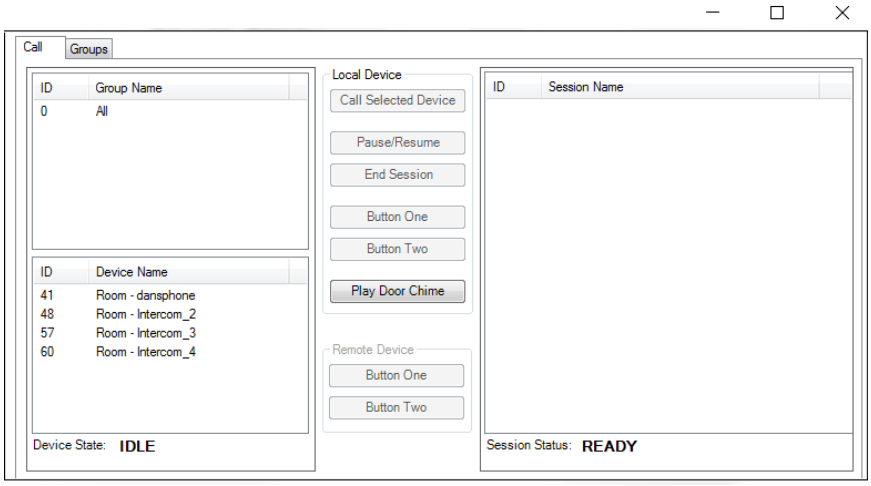
Wireless Thermostat



Wireless Outlet Switch



Intercom device



Examples

Use this chapter to see examples of how to:

- Set up a project using the Composer Views method
- Manage apps with the 4Store agent
- Use the Access agent
- Use the Advanced Lighting agent

Example home project: Composer views method

The following sample project sections step you through the creation of a Control4 project using the Composer Pro views.

Example: Design and create the project

Use the Composer Pro views to design and create a project.

Composer views

In this view, you create the foundation of the Control4 system by building the project tree.

To design the Smith Home project:

1. Start Composer and connect to a Director on a local network.
2. Enter the Project Properties for the Smith home.
   - **Name**—Franklin Smith Home.
   - **ZIP Code**—84003 or enter a latitude and longitude manually.
   - **Date & Time**—Use the drop-down menu to change these as desired.
   - **Time Zone**—Use the drop-down menu to select the appropriate zone.
3. Add rooms to the project tree.

1. In the Locations tab, double-click on a **room** to add it to the project tree.
2. Continue to add **rooms** until you have included all rooms you want in the house (rooms that will have automated devices). You can also drag these items to an object in the project tree.

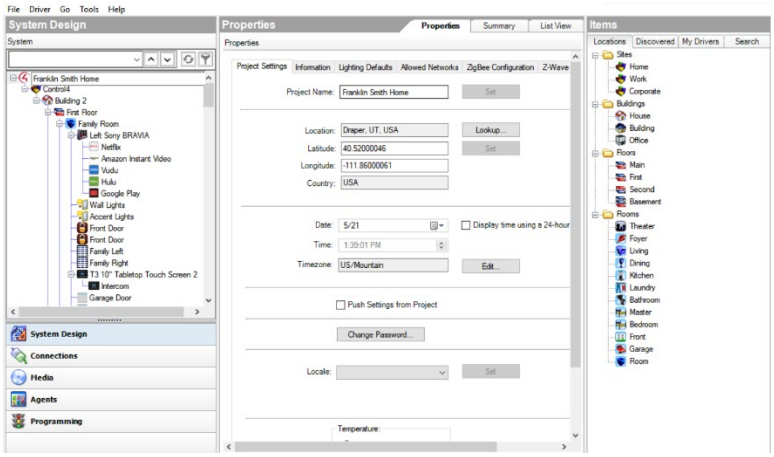
Example: Add three rooms.

- Theater
- Bedroom
- Front

Tips: To build the system design, define the project configuration in the project tree. You do not have to add all the items in the project tree manually, such as Site > Building > Floor > Room because Composer Pro automatically adds the required infrastructure.

Also, you can rename the objects as desired; for example, Franklin Smith Home > Home > House > Main

>Theater. For more information, see *Composer Pro Getting Started*.



To add the devices:

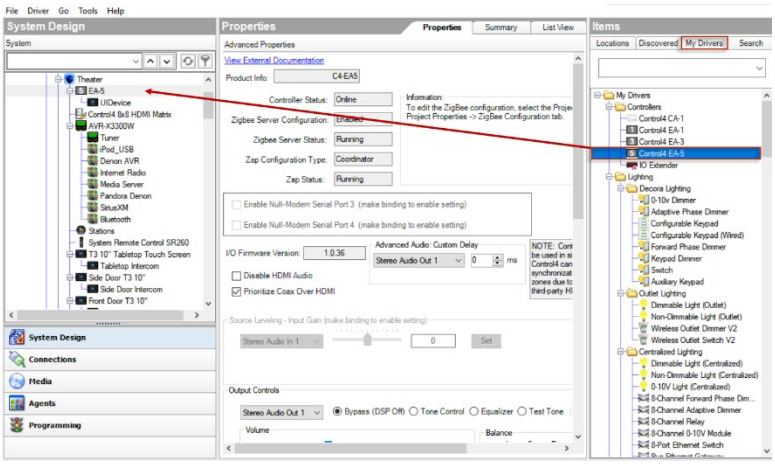
1. Add the controller to a **room** in the project tree.

1. When setting up a system, first add the controller driver to the list. In the project tree, select the room where you want the controller to reside. In the **Items** pane > **My Drivers** tab, double-click a **controller** to move it to the room. See the example below.

Note: If you installed this version of Composer Pro on a computer with an older version of Composer Pro, right-click in the **My Driver** tab, and select **Restore Default List**. This will update the My Driver list.

Example: Add a controller to the Theater Room:

2. From the project tree, select **Theater**. In the **Items** pane > **My Drivers** tab under Controllers, double-click **Controller** or drag it to the room where it resides—in this case, Theater. The controller and Digital Audio appear in the project tree. The Digital Audio object resides on the controller, but shows up as a separate object in the project tree. The Digital Audio provides the functionality to play media.



2. Add the **Lighting** and **Navigators** to the applicable **rooms**. The example below shows some devices you can add.

Example: Select **Theater** in the project tree. In the **My Drivers** tab, do the following:

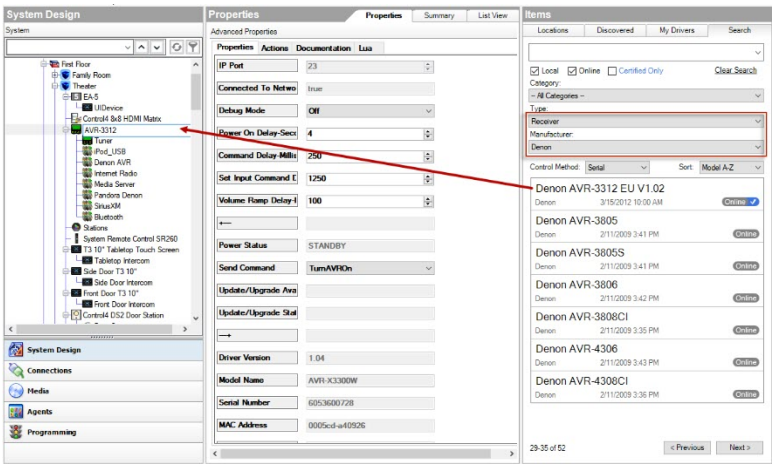
1. In Lighting > Light, double-click **Wireless Dimmer**, and then rename to **Dimmer**.
2. In Lighting > Light, double-click **Wireless Switch,** and then rename to **Light Switch**.
3. In Lighting > Light, double-click **Wireless Outlet Switch**, and then rename to **Television Outlet Switch**.
4. In User Interface, double-click System Remote **Control**.
5. In User Interface, double-click **6-Button Keypad**.

Tip: Use a descriptive name. When adding devices to the home, right-click and select **Rename** to rename them with a descriptive name. For example, if you have two dimmers in a room, give them a descriptive name such as “Wall Dimmer” or “East Dimmer.” This helps you identify the specific dimmer later when identifying connections. If there's only one dimmer or switch in a room, however, you can keep the generic title "Dimmer" or "Switch."

3. Add a **Receiver** to the applicable **room**.

Example: Add a **Receiver** to the **Theater**. To add, select **Theater** in the project tree. From the **My Drivers** tab, do the following:

1. In Audio/Video, double-click **Receiver**.
2. In the dialog box that appears, select **Online Database**, select the manufacturer **Denon**, and then double-click **AVR-3312]** to add the receiver to the project tree.



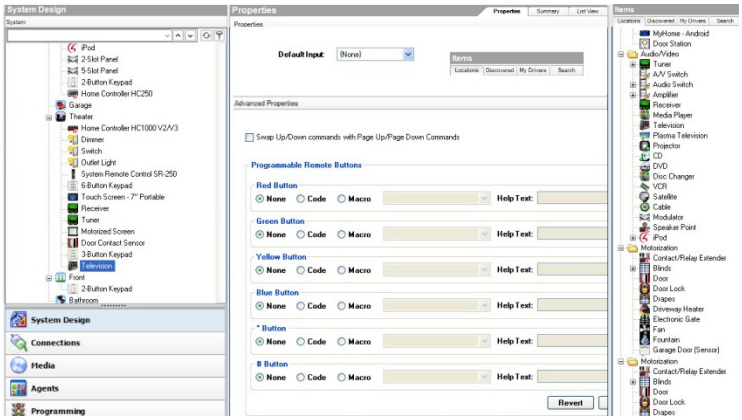
4. Add a **Television** to the applicable **room**. This will probably be the same room where the controller is.

Example: Add the television to the **Theater**. To add, select **Theater** in the project tree. From the **My Drivers** tab, do the following:

1. In Audio/Video, double-click **Television**.

2. In the dialog box that appears, select **Online Database**, select the manufacturer **Samsung**, and then double-click **HC-J655W[IR]**.

   The UHF/VHF object may be added to enable you to scan for UHF/VHF broadcast channels.



5. Add additional **Audio/Video** devices to the **room**.

Example: Add the DVD player to the **Theater**. To add, select **Theater** in the project tree. From the **My Drivers** tab, do the following:

1. In Audio/Video, double-click **DVD**.
2. In the dialog box that appears, select **Online Database**, select the manufacturer **Samsung**, and then double-click **DVD HD841[IR]**.

Note: If you can access a wireless touch screen, add it now to your project. If you previously had a wireless touch screen on your system prior to Release 1.3, follow the special update instructions in “Information about older releases.”

6. Add a **motorized** device or **sensor** to the applicable room.

Example: From the My Drivers tab, add a motorized screen and a door contact sensor to the Theater room from the online database. To add, select **Theater** in the project tree. In the **My Drivers** tab, do the following:

1. In **Motorization**, double-click **Motorized Screen**.
2. In **Sensors**, double-click **Door Contact Sensor**.

7. Repeat Steps 2 through 6 as needed to add more devices to the applicable rooms.

Example: To finish creating the project tree for the example project, add devices to the **Bedroom** and **Front Room** as follows.

Bedroom:

1. Select **Bedroom** in the project tree. In the My Drivers tab, do the following:

   - In Lighting > Light, double-click **Wireless Dimmer**, and then rename it to **Bedroom Dimmer**.
   - In **User Interface**, double-click **Touch Screen**.

Front Room:

2. Select **Front Room** in the project tree. In the My Drivers tab, do the following:
   - In **User Interface**, double-click **3-Button Keypad**.
   - In **Motorization**, double-click **Electronic Gate**.
   - In **Motorization**, double-click **Sprinklers**.
   - In **Sensors**, double-click **Doorbell**.
   - In **Sensors**, double-click **Motion Sensor**.
   - In **HVAC**, double-click **Wireless Thermostat**.

Example: Make and verify the connections

This section discusses using Composer Pro views to make and verify the connections.

> Note: This process follows Example: Design and create the project .

In the Connections view, you can:

- Identify Control4 devices to establish a network connection
- Check all network connections
- Define AV connections
- Define control connections

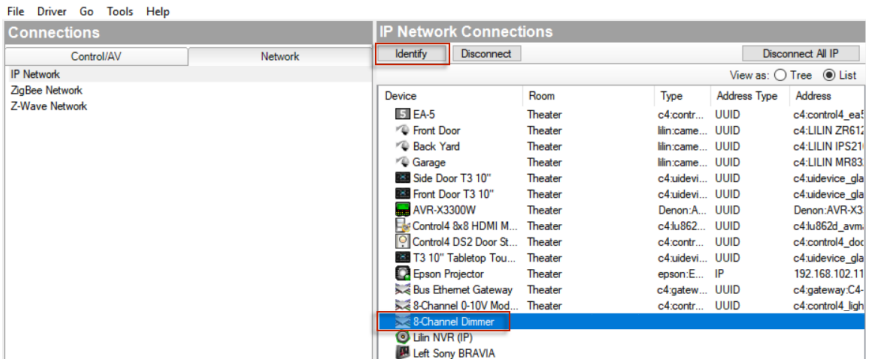
> Note: When only one appropriate connection is available in a room for a given connection type, Composer Pro assumes the connection (example: if a TV is the only Audio Output device in a room, the system assumes that the Audio Output connection is routed to the TV). This feature adds value to Composer Pro, but increases the need to verify every connection.

> Note: To remove a connection, right-click on the connection and select **Disconnect**.

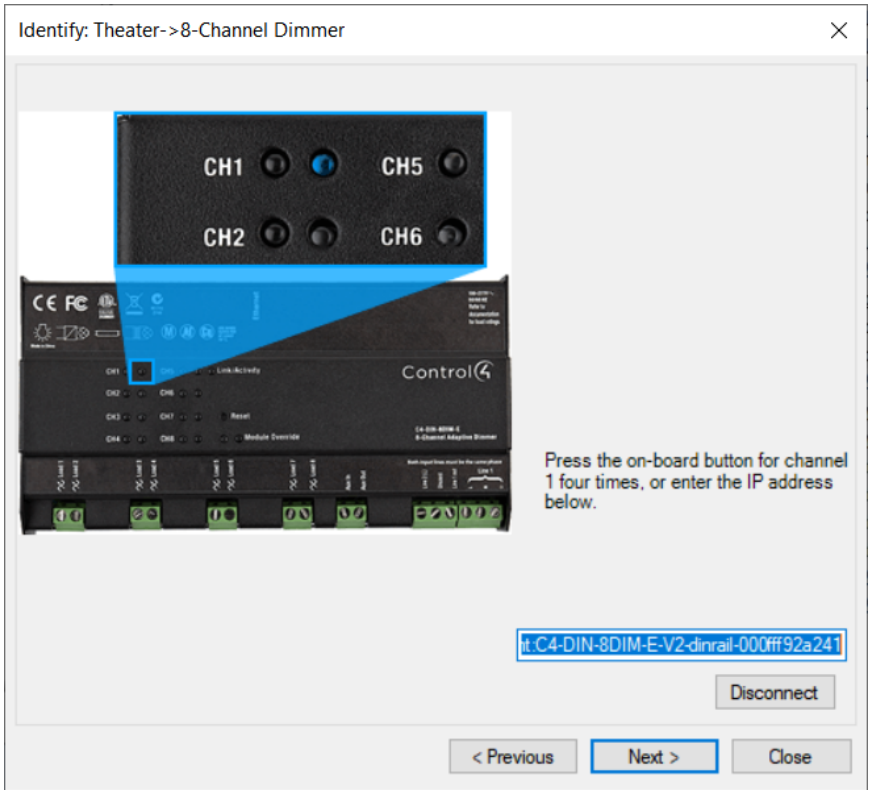
To make connections:

1. In Composer Pro, click the **Connections** view.
2. Identify the Control4 devices that connect to the controller through the network. Go to each physical device and press the button indicated on the Composer Pro screen.
1. Click the **Network** tab > **IP Network**.

   Notice the devices that do not have an address listed under the Address column.

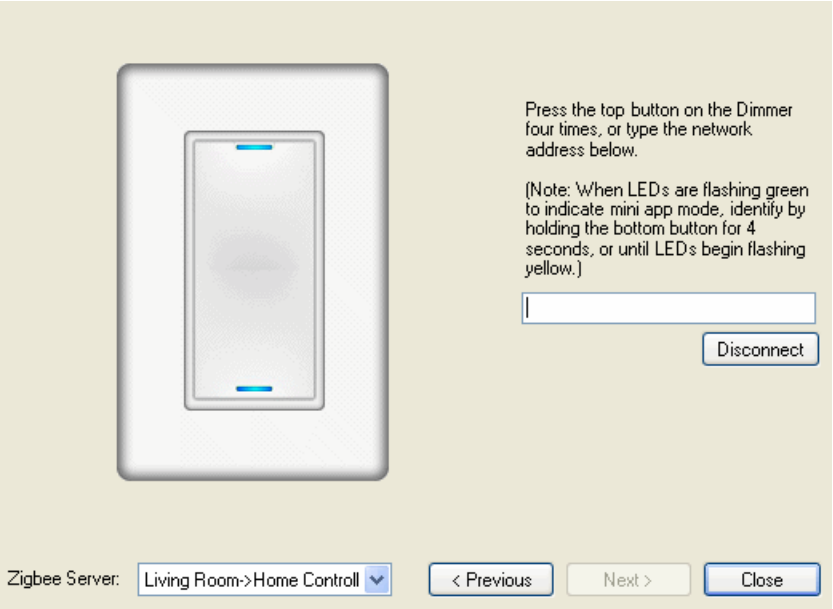


2. Select the **controller**, and then click **Identify**. The screen to identify the controller appears (in this example, the 8 Channel Dimmer).
3. At the physical controller, press the **Identification** button. This identifies the controller with a unique address in the system. When the address appears on the screen, click **Next**.

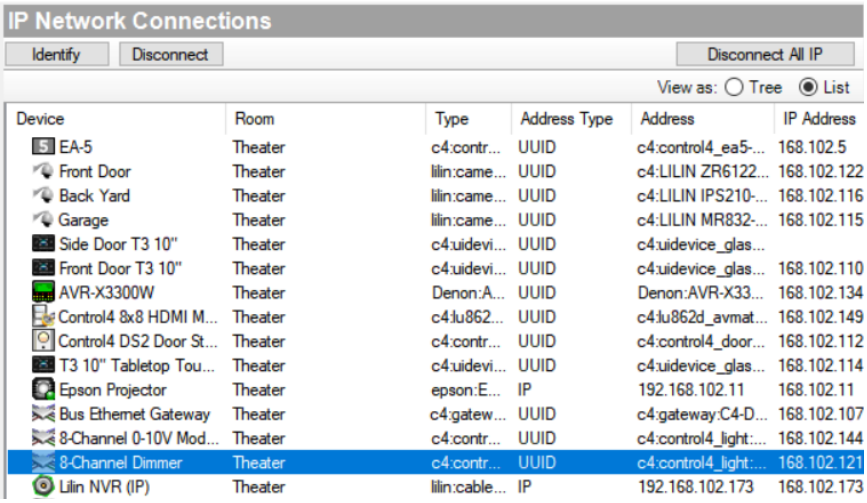


4. Select **Dimmer**, and then click **Identify**. The screen to identify the dimmer appears. Press the top dimmer button **four** times. This identifies this specific dimmer with a

distinctive address to the system. When the address appears, click **Next**.



5. When the Light Switch identification screen appears, press the **top** button four times. When the address appears, click **Next**.
6. When the system remote control identification screen appears, holding the physical system remote control press the red **4** button once. When the address appears in the box, click **Next** to continue.
7. If you have a touch screen in your project, press the **Enter** button on the front of the touch screen. When the address appears in the box, click **Next** to continue.
8. When the Outlet Switch identification screen appears, press the **button** on the module **four** times.
9. When the 6-Button Keypad identification screen appears, press the **top** left button four times. When the address appears, click **Next**.
10. When the Dimmer identification screen appears, press the **top** button four times. When the address appears, click **Next**.
11. When the touch screen identify screen appears, press the indicated button as shown. When the address appears, click **Next**.
12. When the 3-Button Keypad identification screen appears, press the **top** button **four** times. When the address appears in the box, click **Next**.
13. When the Control4 Wireless Thermostat identification screen appears, press the **middle** button four times. When the address appears in the box, click **Close** to exit Identify mode.
14. When you finish identifying the devices, notice that the Address column now has an address for every network device.

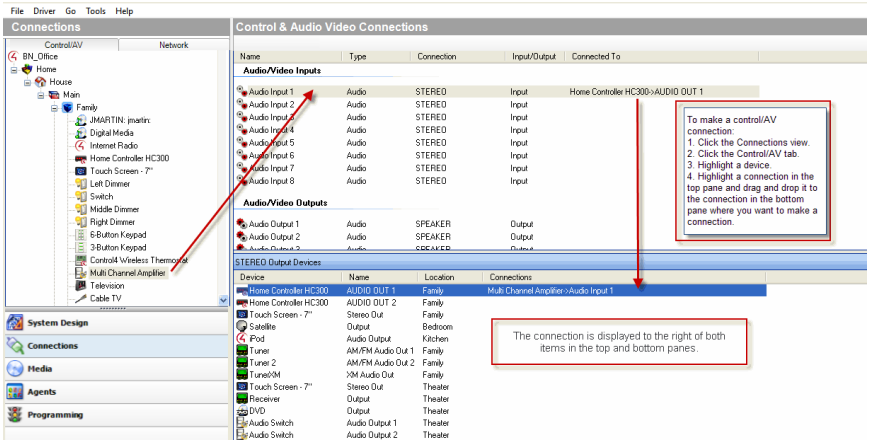


3. Define the AV and Control connections.

   Control and AV connections for a device are visible when you click the **Connections** view > **Control/AV** tab, and then select the device. To make a connection between inputs and outputs, from the top pane drag a device's input (or output) to the output (or input) in the bottom pane.

For each device, define the following when applicable:

- Video connections (path of video signals)
- Audio connections (path of audio signals)
- Control connections (how the controller communicates with the device)

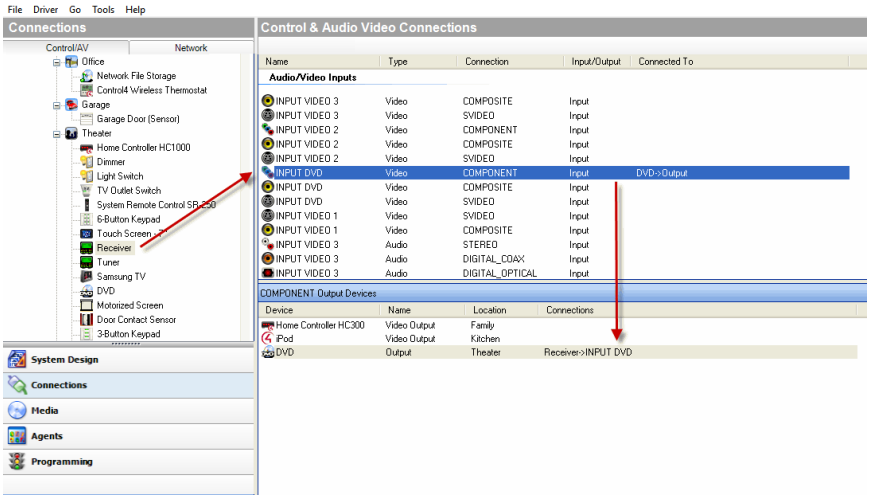


1. Define the **AV** connections for the **Receiver**.

Example: In the Connections view under Theater, click **Receiver**. The right top pane displays all the inputs and output on the back of the Receiver. For Receiver, from the top pane in Audio Video Inputs, make the following connections:

- Click INPUT DVD (Video-COMPOSITE), and drag it to DVD (Output-Theater) in the bottom pane.

- Click INPUT VIDEO 1 (Video-COMPOSITE), and drag it to Home Controller HC300 (Video Out 1- Family) in the bottom pane. This connects the Receiver Video 1 input to the Controller Video 1 output.
- Click INPUT DVD (Audio-STEREO), and drag to DVD (Output-Theater) in the bottom pane.

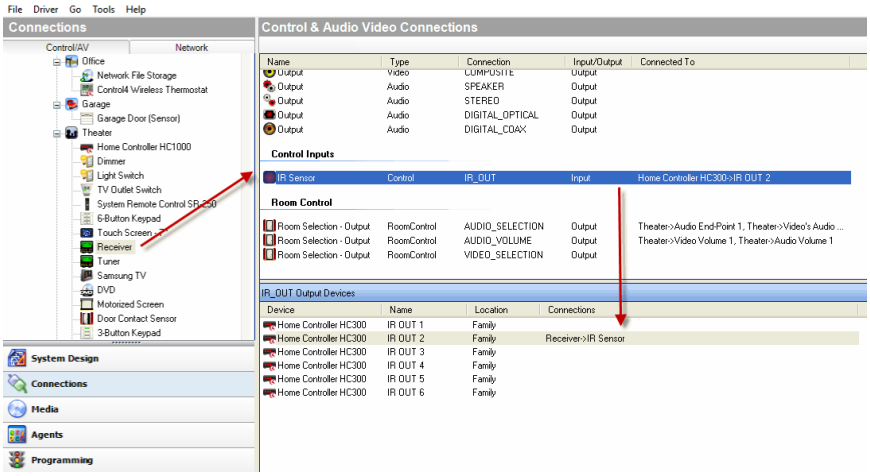


2. Define the **Control** connection for the **Receiver** to the **Controller**.

Example: In the Connections view under Theater, click **Receiver**. The right top pane displays all the inputs and output on the back of the Receiver.

For Receiver, from the top pane under Control Inputs, make the following connections:

- Click IR Sensor (Control-IR_OUT), and drag it to Controller (IR Output 2-Theater) in the bottom pane.



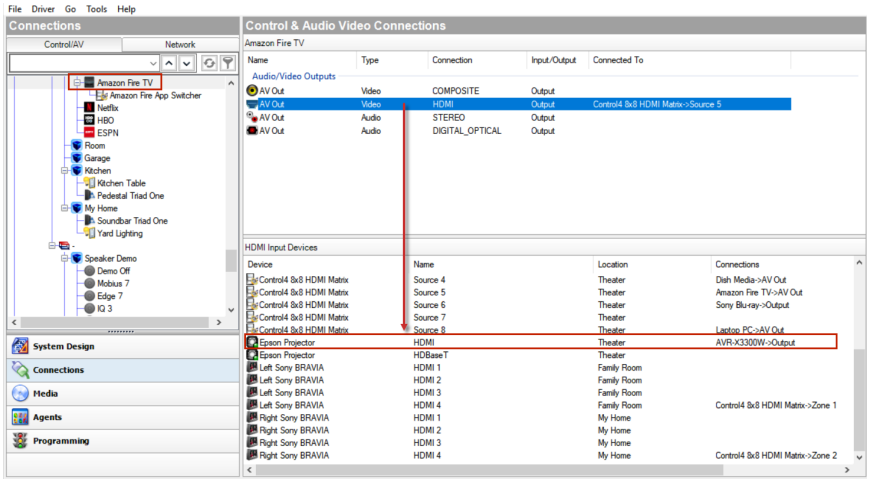
3. Define **AV** and **Control** connections for the **Television**.

   Example: In the Connections view under Theater, click **Television**. The right top pane displays all the inputs and outputs on the back of the Television. For Television, from the top pane do the following:

   In Audio Video Inputs:

   - Click AV (Video-COMPOSITE), and drag it to Receiver (Output-Theater) in the bottom pane.
   - Click AV (Audio-STEREO), and drag it to Receiver (Output -Theater) in the bottom pane.

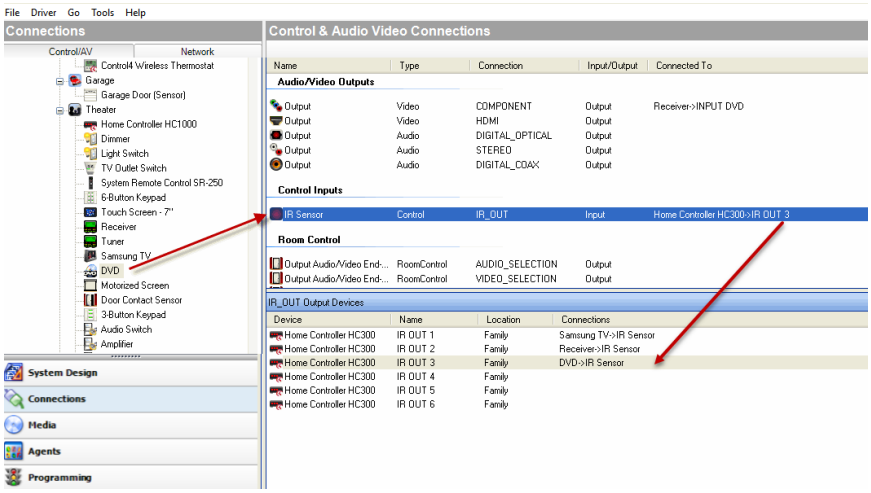
   In Control Inputs, click **IR Sensor (Control-IR_OUT)**, and drag it to **Controller (IR Output 1—Family)** in the bottom pane.



4. Define the **Control** connections for the **DVD player** to the **Controller**.

   Example: In the Connections view under Theater, click **DVD**. The right top pane displays all the inputs and outputs on the back of the DVD. From the top pane, do the following:

   In Control Inputs, click **IR Sensor (Control-IR_OUT)** and drag it to **Controller (IR Output 3-Family)** in the bottom pane.

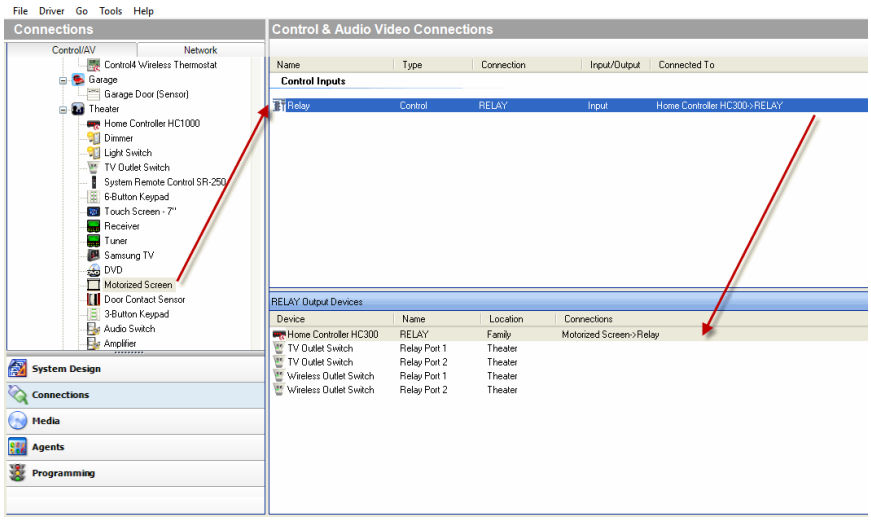


Tip: If you prefer to set up a video sense loop instead of using a macro, see "Changing power management options." After you add a video sense loop connection to the DVD player driver, add a control connection between the controller and the DVD player.

5. Define the **Control** connections for the **Motorized Screen** to the **Controller**.

Example: In the Connections view under Theater, click **Motorized Screen**. The top right pane displays all the inputs and outputs on for the screen.

In the top pane under Control Inputs, click Relay **(Control-RELAY)**, and drag to **Controller (Relay Port 3-Family)** in the bottom pane.



6. Define the **Control** connections for the **Door** Contact **Sensor** to the **Controller**.

Example: In the Connections view under Theater, click **Door Contact Sensor**. The top right pane displays all the inputs and outputs for the Door Contact Sensor.

In the top pane under Control Inputs, click **Contact Sensor (Control-CONTACT_SENSOR)**, and drag it to **Controller (Contact Port 1-Family)** in the bottom pane.

7. Define the **Control** connections for the **Electronic Gate** to the **Controller**.

   Example: In the Connections view under Front, click **Electronic Gate**. The top right pane displays all the inputs and outputs for the Electronic Gate.

   In the top pane under Control Inputs, click **Relay (Control-RELAY)**, and drag it to **Controller (Relay Port 4-Theater)** in the bottom pane.

8. Define the **Control** connections for the **Sprinklers** to the **Controller**.

   Example: In the Connections view under Front, click **Sprinklers**. The top right pane displays all the inputs and outputs for the Sprinklers.

   In the top pane under Control Inputs, click **Relay (Control-RELAY)**, and drag it to **Controller (Relay Port 2-Theater)** in the bottom pane.

9. Define the **Control** connections for the **Contact Sensor** to the **Controller**.

   Example: In the Connections view under Front, click **Doorbell**. The top right pane displays all the inputs and outputs for the Doorbell.

   In the top pane under Control Inputs, click **Contact Sensor (Control-CONTACT_SENSOR)**, and drag it to **Controller (Contact Sensor 2-Theater)** in the bottom pane.

10. Define the **Control** connections for the **Motion Sensor** to the **Controller**.

    Example: In the Connections view under Front, click **Motion Sensor**. The top right pane displays all the inputs and outputs for the Motion Sensor.

    In the top pane under Control Inputs, click **Motion Sensor (Control-CONTACT_SENSOR)**, and drag it to **Controller (Contact Sensor 1-Theater)** in the bottom pane.

4. Go to the next section, "Example: Verify the network connections."

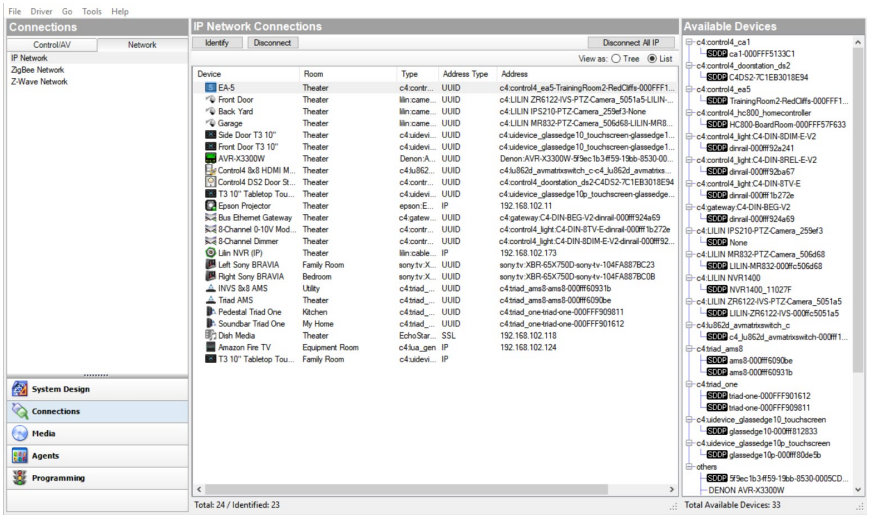
Example: Verify the network connections

This section discusses using Composer Pro views to verify the network connections.

Note: This process follows "Example: Verify the network connections."

There are two places to verify network connections:

- The Network tab (shown below)
- The Tools menu



Follow the instructions below to check your connections in both locations.

To check your connections from both locations:

1. From the Connections view > **Network** tab, verify that every device that communicates to the controller using TCP/IP, Wi-Fi, and/or Zigbee has a network address. If a device doesn't have a network address, the device needs to be identified.
2. To identify a device from this location, **right-click** on the **device** and select **Identify** (or click the **Identify** button). Follow the on-screen instructions provided for each device, such as those listed in the following table.

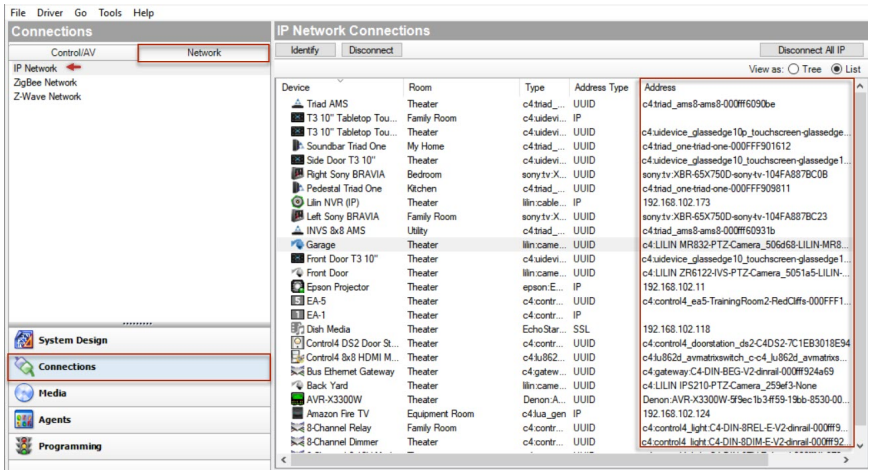
   After identifying the network connection, the device's address appears in the list.

Device	Instructions to Identify a Device to the Control4 System
Controllers	Press the **Identification** button on the controller.
Lights and keypads	Press **top** button **4** times (6-Button Keypad — press top left button). MiniApp mode: press and hold bottom left or bottom button for four seconds.
System remote controls	Press the red **4** button on the remote control.
Speaker point	Press button **1** time.
Multi-tuners	Press button **1** time.
16-channel amps	Press button **1** time.
Thermostats	Press center button **4** times.
Wireless outlet switch*es*	Press button **4** times.
Wireless touch screens	Press the **Enter** button on the front of the touch screen **1** time.
Black & Decker Kwikset locks	Press the **Top Left** button on the top of the board (remove the lock's cover first) **4** times. To disconnect, press the **Top Right** button on the top circuit board **9** times.
1-button products	Press **4** times.
IO extenders	Press the Link button on the back of the IO extender.
Touch screens	Press the button indicated on the diagram of the device in Composer Pro.

Using the Network tab

To ensure all devices have been identified from the Network tab:

1. Click **Connections** > **Network** tab > **IP Network**.
2. In the Address column, make sure there is an address for every line item.



Using Network Tools

To ensure all network connections exist and are active from Network Tools:

1. From the Tools menu, select **Network Tools**.
2. Check both the **IP Network** and **Zigbee Network** tabs for Green, Yellow, and Red connection icons. The colors indicate the following:
   - **Green**—An address is identified, and the device is online (communicating).

     Example: The dimmer is identified and communicating to the system.
   - **Yellow**—An address is identified, and the device is offline (not communicating).

     Example: If the system remote control goes to sleep, the status turns Yellow. This indicates that the system remote control has been identified, but is offline (not communicating). Make the device active so it can communicate to the system.
   - **Red**—A device is not identified. Go to the **Connections** view > **Network** tab, and identify the device to the system or see "Example: Make and verify the connections."
3. If you find yellow or red icons, do the following:
   - **Yellow Icons**—Go to the device, and activate it according to its documentation.
   - **Red icons**—Go to the Connections view > Network tab, and identify the device to the system.

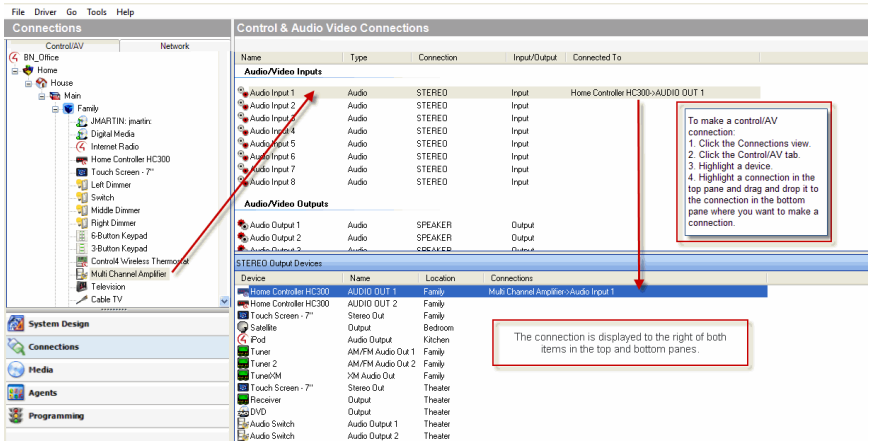
Example: At this point in your example project, the system remote control should be yellow (or the only device not green). The system remote control turns green as soon as you wake up the system remote control. To wake up the system remote control, press the red Control4 **4** button.

Example: Define the control and audio/video connections

This section discusses using Composer Pro views to define AV connections.

> Note: This process follows "Verifying the network connections."

Control/AV connections are visible when you select the **Control/AV** tab in the Connections view. The Control/AV tab lets you define the physical connections between the controller or other devices, including AV signals, IRs, relays, contacts, and/or serial connections.



> Tip: If connections do not appear as needed, edit the driver to create the needed connections. See "Editing a driver using the Driver Wizard."

The following steps are described in the next sections:

"Verify that all control and AV connections use room properties"

"Disconnect/Remove control/AV connections"

"Re-assign control/AV connections"

"Update connections in the project if you change locations"

Verify that all control and AV connections use room properties

To verify all Control and AV connections by checking room properties:

1. Click the **System Design** view.
2. Select a **room**.
3. On the default tab Audio Video Devices, see if your **AV** devices are accessible in the room. If an AV device is not there, see "Example: Make and verify the connections."

Disconnect/Remove control/AV connections

To disconnect or remove a control/A/V *connection*:

1. Click the **Connections** view.
2. Select the **Control/AV** tab.
3. In the Control/AV project tree, select a **device** for the device's control and AV connections to appear.
4. In the Control and AV Connections pane, right-click an **input** (or output) connection and click **Disconnect**.

Re-assign control/AV connections

To reassign Control/AV connections:

1. Click the **Connections** view > **Control/AV** tab.
2. In the project tree, select a **device** for the device's control and AV connections to appear.
3. In the Control and AV Connections pane, **drag** an input from the top pane to a different output on the bottom pane. The connection is moved to the specified output.

Update connections in the project if you change locations

If you use the same project but you change locations, you have to update all of the connection information.

To update the connection information in an existing project:

1. Click the **Connections** view.
2. Click the **Control/AV** tab, and **review** your connections to ensure that they are updated in the current control and AV topology.
3. Click the **Network** tab and **disconnect** all connections by **right-clicking** and selecting **Disconnect**.

Example: Use the Access agent

Use the Control4 Access agent view to allow or deny access or hide parts of the user interface on supported touch screens and on-screen TV interfaces. The Access agent is ideal for commercial applications including hotels, bars, or board rooms where settings need to be locked or hidden to restrict their use by unauthorized personnel. By adding this agent to a project, an access code is required to gain access to selected functions of the Status Bar or the More and Settings modules. When enabled, the **Access** agent settings apply to profiles created in the **Identity** agent and each profile can be applied to any number of touch screens and on-screen TV interfaces in the system using the **UI Configuration** agent..



The Access agent provides these key features:

- **User**–Select a profile and define the Access restrictions for that profile. After you apply the settings to a profile, use the **UI Configuration** agent to apply the profile to a user interface.
- **Current Access Code**–The programmer can establish a four-digit access code to restrict access to user interface elements globally.
- **Access Agent**–**Enable** or **Disable** the Access agent for the selected user profile.
- **Hide Digits**–Hide or show numbers on the user interface when entering the **Access Code** on a user interface.

Navigation

- **Experience Menu**–Lock the Experience Menu (C4 icon). If locked, you can only see the favorites in the Room Menu and must enter the Access Code to see the Experience Menu.
- **Return To Room**–Lock the **Return to Room** icon (Room icon in the top left that replaces the Experience Menu icon after you select a device). When locked, you must enter the **Access Code** to return to the Room Menu.
- **Back Button**–Lock the **Back** button in the **Status** bar after you select a menu. For example, with the **Back** button locked, if you navigate to a camera view, you must enter the Access Code to return to the **Cameras** Menu.
- **Room Selector**–Lock or Hide the **Room Selector** in the **Status** bar.
- **Room/All Filter**–Lock or Hide the Filter icon on menus that support filtering like Lighting and Shades. If you lock or hide the filter, you can only see items in the current room unless you change the filter to **All**.

Media

- **Sessions**–Lock or Hide the Sessions interface. With the Sessions interface locked or hidden, you must enter the **Access Code** to control Sessions in other rooms.

- **Media Sharing**–Lock or Hide the Media Sharing option in the Sessions interface. With Media Sharing locked, you must enter the **Access Code** to share media with another room.

Other

- **Settings**–Lock the Settings icon. With Settings locked, to access Settings like Wallpaper or Screensaver options, you must enter the **Access Code**.
- Edit Lighting Scenes–Lock or Hide the Edit icon on Lighting Scenes.
- Favorites–Lock or Hide the option to add an item as a Favorite.
- Intercom–Lock the Intercom icon.
- Lock Screen–Set to Unlocked, Auto, or Manual to configure a lock screen for the interface. For Auto, configure the Screen Lock Timeout below the Lock Screen option. For Manual, long-press on the C4 icon (or long-press to activate the lock screen.

Prerequisites

- Create a user profile in the Identify agent if you want to apply the Access agent settings to a selected group of interfaces or use the default profile.
- Figure out which Status Bar or other functionality you want to restrict or hide from unauthorized users. For example, do you want to lock the Room Selector? Keep others from getting into Settings? Hide the Favorites button?
- Establish an access code.

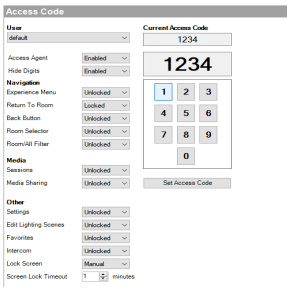
To create a profile in the Identity agent:

1. Start Composer Pro and connect to a Director.
2. Click Agents.
3. Select the **Identity** agent.
4. Click **Add User**.
5. In the **Create New User** window, enter a **Username**, **Password**, and **Confirm Password**. The password must contain 8 digits, 1 capital letter, 1 number, and 1 special character.

To enable the Access agent:

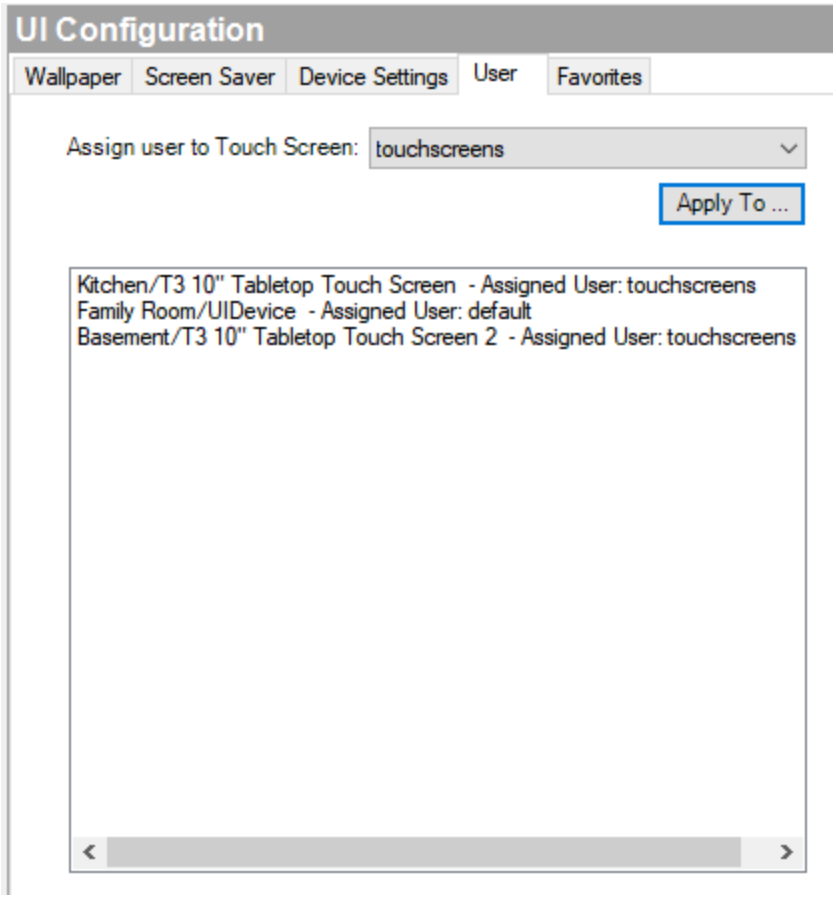
1. Click **Agents**.
2. (First time only) Click **Add** to add the Access agent to the project.
3. Double-click on the **Access agent** to add it into the project.
4. Enter a four-digit access code on the numeric keypad.
5. Click **Set Access Code**. The new access code appears in ‘Current Access Code’ window.

6. Select **Enabled** in the **Access Agent** option.

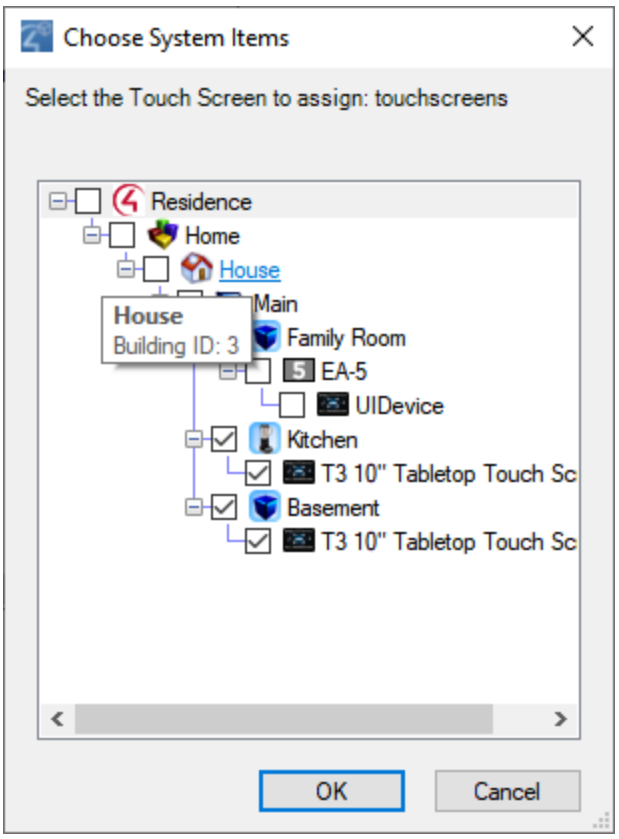


To apply a user profile in the UI Configuration agent:

1. Click **Agents**.
2. Select the **UI Configuration** agent.
3. Select the **User** tab.



4. Select the user profile in **Assign user to Touch Screen** and click **Apply To ...**.
5. Select the user interfaces or rooms to apply the profile to and click **OK**.



As a reminder, the Access agent enables the programmer to restrict certain features and settings from all users on touch screens and on-screen TV interfaces. Any changes to Access Codes or these settings can only be made using Composer software. If the Access Code is lost or forgotten, it can be recovered only using Composer.

Example: Use the Advanced Lighting agent

Use the Control4 Composer Pro Agents and Programming views to program this agent. (For OS 2.3.0 or later, this agent supports the Panelized Lighting product line with full functionality. Older lighting products are also supported, but with limited functionality.) This agent provides more advanced features than the Lighting Scenes agent. See also “Example: Program Using the Lighting Scenes Agent” in this document.

The Advanced Lighting (Scenes) agent provides these features:

- LED tracking for Lighting Scenes
- Toggle Lighting Scenes
- Ramp and fade Lighting Scenes
- Set delays within Lighting Scenes
- Scene sequencing
- Flash lights in Lighting Scenes

To use the Advanced Lighting agent:

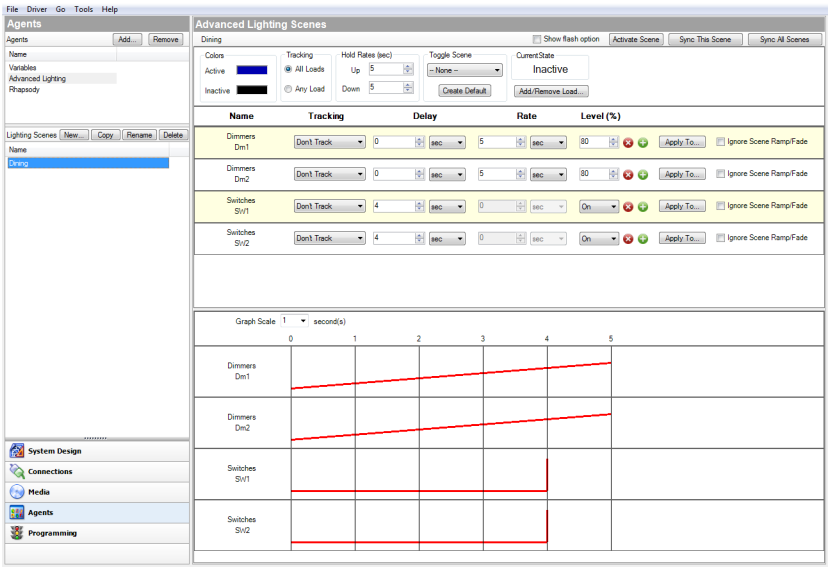
1. Start Composer Pro and connect to a Director.
2. Click **Agents**.
3. (First time only) Click **Add** to add the Advanced Lighting agent to the project. **Note**: You must add the Advanced Lighting agent to the project before your customers can edit Lighting Scenes on a Navigator.
4. Select **Advanced Lighting**, and then click **OK**.
5. In the Agents pane, select **Advanced Lighting** and then click **New**.
6. Enter a name on the dialog that appears (for example, **Party Lights**).
7. Click **Create**. Notice that you have more options than if you were using the Lighting Scenes agent. Note: You can click the **Rename** button to rename a scene.
8. Adjust the scene as desired.

   - **Show flash option**—Select this option to add a Flash checkmark in the list of lighting devices below. When Flash is checked, lights can flash on and off at set intervals. Use this option with the Delay option. For example, this option works well in a situation where you want to alert someone so you can set a porch light to flash in case of an emergency or to get someone’s attention. Note: For older lighting devices (earlier than OS 2.3.0), flashing is not supported.
   - **Activate Scene**—Click this button to activate the scene immediately. Note: The Execute On and Execute Off buttons do not appear in the Advanced Lighting agent. Use the **Activate Scene** button.
   - **Sync This Scene**—Click this button to synchronize this scene with other scenes. This option isn’t really needed for Panelized Lighting unless there seems to be a

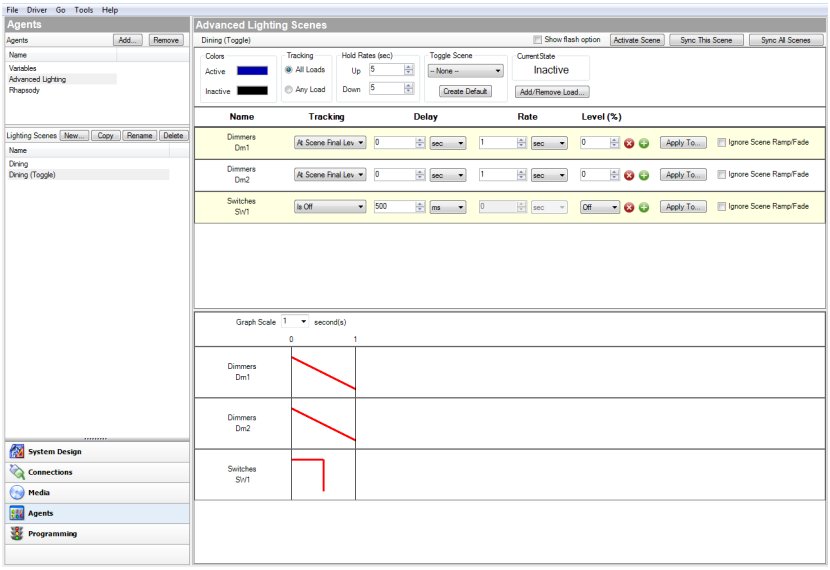
problem.

- **Sync All Scenes**—Click this button to synchronize this scene with all scenes created. This option isn't really needed for Panelized Lighting unless there seems to be a problem.
- **Colors**—This is the keypad color. Click the **Active** or **Inactive** colored boxes to select another color.
- **Tracking**—Click **All Loads** to track a dimmer or switch by name, tracking status, delay, rate, level %; and all loads must match their tracking condition before the scene will be considered active. Click **Any Load** and only a single load needs to match their tracking condition before the scene will be considered active.
- **Hold Rates (sec)** —Use the **up** or **down** arrows to select the **Up** hold ramp rate or **Down** hold ramp rate. At the keypad, press and hold for a set period of time in seconds. This action behaves the same as hold rates for dimmers.
- **Toggle Scene**—This pull-down allows you to select which scene to activate when the current scene is prompted to deactivate. This applies to all scenes except for the current one selected. Here, you can toggle scenes on or off.

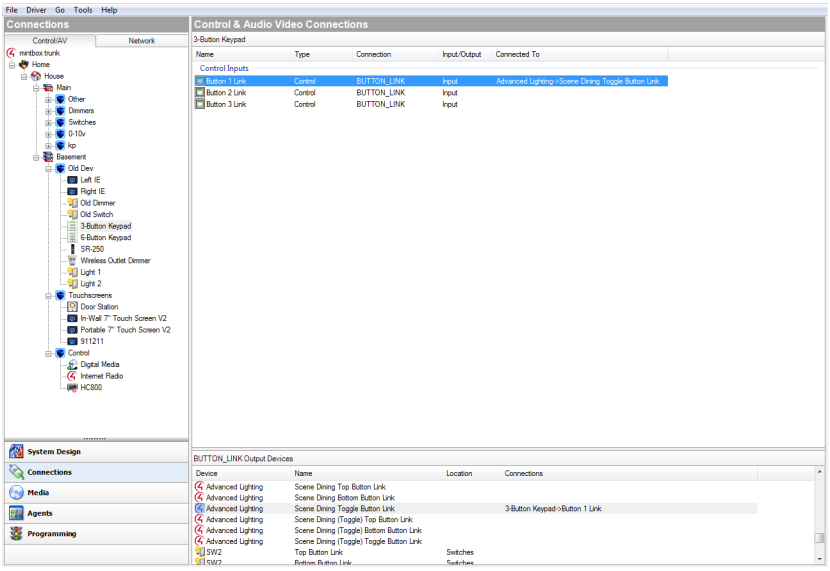
Example: Create an Advanced Lighting Scene called "Dining." Notice the number of switches and dimmers in the Advanced Lighting pane and their values.



1. Create a Dining 'Toggle' scene. Notice the difference in switches and dimmers and their values from the previous screen.



2. Now click the **Connections** view to connect the keypad bindings on a 3-Button Keypad.



When you toggle the 3-Button Keypad in the Dining room, various lights go on or off at various levels. For more information about connections, see "Connect and verify devices."

Now go back to the **Agents** view.

- **Toggle Scene/Create Default**—Click **Create Default** to create a toggle scene as a copy of the selected scene. From the copied scene, you can rename the new scene and adjust the values on some of the dimmers or switches in that scene.

- **Current State**—Shows ‘Active’ when the conditions are met to consider the scene Active or Inactive if the conditions have not been met.
- **Add/Remove Load**—Click to add or remove specific dimmers or switches to the scene. Check the lighting loads that you want to add, and then click **OK**. This can be a single light, a single room, all lighting loads in an entire house, or any combination of these options.

9. Assign the settings for each load:

- **Dimmer and Switch Options**:
- **Name**—The top line is the room, and the bottom line is the name you assigned to the dimmer or switch.
- **Tracking—**This lets you track the lights in the system. Use the **down** arrow to select one of these options.
- **Don’t Track**—Tracking is ignored.
- **Is Off**—Track when the dimmer or switch is off.
- **Is On (Any Level)**—The text displays only if the light is a dimmer. Switches just indicate ‘Is On.’.
- **On At Level (%)**—Track when the dimmer is on at a specific level.
- **At Scene Final Level**—Track at the final level of the last sequence. For example, if someone changes the level on a Navigator, this might be the final level.
- **Delay**—Use the **up** or **down** arrows or type the delay value in seconds.

  Tip: If you have several dimmers in a long hall, and you want to set up sequencing, you can use this option with the green + buttons and increase the delay of each dimmer in a row by two seconds.

- **Rate**—Lets you set the ramp rate, which is the speed the load ramps to for the specified lighting level. Use the **up** or **down** arrows to set the milliseconds (**ms**), seconds (**sec**), or minutes (**min**) of the ramp rate. Then set the amount of time the device takes to change the level.

  Example: Set the time to **1** second for both the Bedroom Dimmer and the Theater Dimmer.

- **Level (%)**—Lets you set a target lighting level as appropriate by using the pull-down menu, for example, **50** percent for the Bedroom Dimmer and **20** percent for the Theater Dimmer. The green + gives you the ability to add ‘paths’ to a scene. Each row in the path uses single delay/rate/level settings. Use the green + to add another step, click the red **x** to delete a step, or you don’t need to have any steps. Note: Older lighting devices (prior to OS 2.3.0) only allow 0 or 1 steps.

- **Apply To**—Click this option to allow other lights to use the same scene.
- **Ignore Scene Ramp/Fade**—Check this option to have the light ignore commands to ramp or fade a scene.
- **Graph**—Shows in graphical form (red lines) the settings for each dimmer or switch. Dimmers will show ramp rates, delays, and levels as angled, horizontal, or vertical lines.

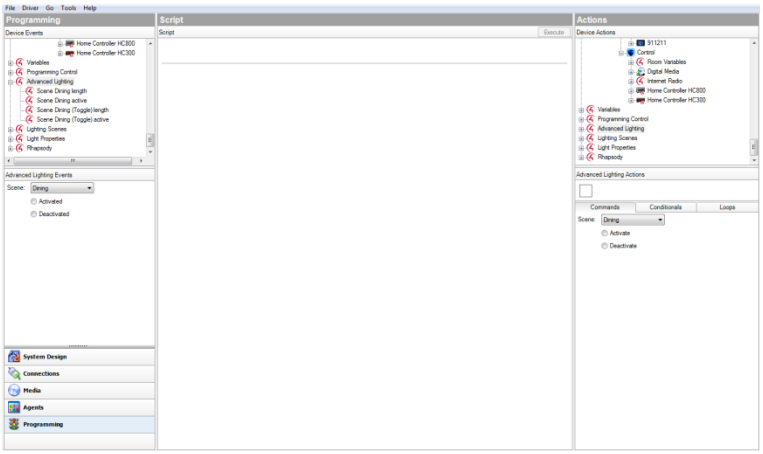
10. Now click **Programming**. To program a scene, follow the basic steps in "Programming Basics for Control4 Systems."

Note: In the Programming view, the Advanced Lighting Scene has variables, conditionals, and loops that do not exist in the Lighting Scenes agent. This agent also has 'read-only' variables for the length of each scene.

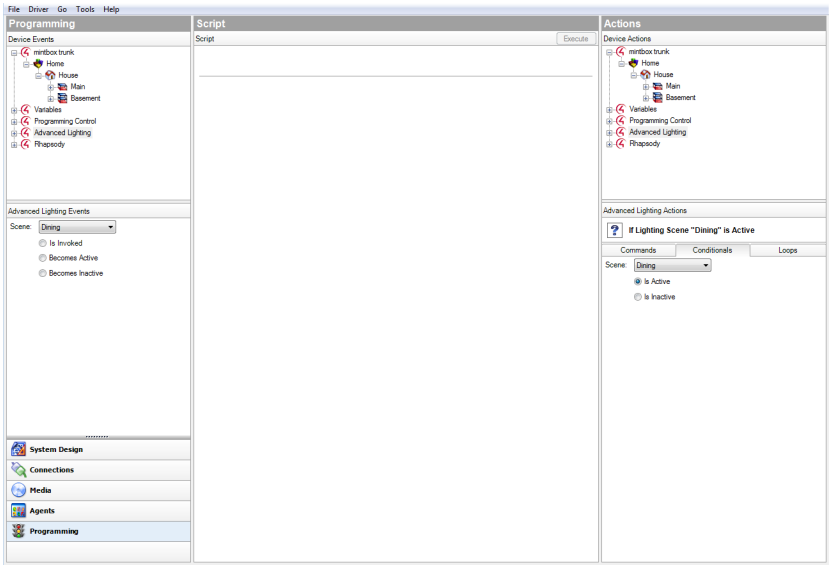
Example: Note the screens below. The Events and Actions panes use different options than the Lighting Scenes agent (Activate, Deactivate, etc.).

Event: (Is Invoked, Becomes Active, Becomes Inactive)

- **Is invoked**—This event fires when the scene has been explicitly told to activate. If the scene is already activated, and it is told to activate again, this event will still fire.
- **Becomes Active**—This event fires when the scene transitions from the Inactive state to the Active state.
- **Becomes Inactive**—This event fires when the scene transitions from the Active state to the Inactive state.



- **Actions**— (Activate, Deactivate)



A programming example for use with the Advanced Lighting agent might be where, if the front door opens and it's past 9 PM at night, all the lights turn on in the home at various levels.

Setting up media

Use this chapter to learn how to:

- Scan your network for media files
- Access media from disc changers
- Play AV from television stations
- Play audio from radio stations
- Add a switch
- Create a playlist
- Test a media connection
- Edit media information

Media types

To take full advantage of media lookup services by Gracenote, your customers must have an account at customer.control4.com and their system must be registered to the account. See Composer Pro Getting Started for details.

To add and scan songs and albums for playlists, they must be available in MP3, WMA, M4A/AAC, or FLAC format on an external USB drive, eSATA drive , or network share.

To add Internet radio stations, the Internet radio driver must be bound to the controller. See "Setting up Internet radio stations" in this document.

> Tip: In OS 2.4 and later, you can use the TuneIn app to stream radio, news, sports and more from Internet stations worldwide. See the TuneIn Setup Guide or TuneIn User Guide for details.

You can set up your customer's audio and video media in a Control4 system for:

- Controllers
- Disc changers
- Media players
- Dock for iPod (iPods, iPhones, etc.)
- Television broadcast channels
- Radio broadcast stations
- Internet radio
- Satellite broadcast channels or music stations
- Other external storage devices: USB flash drives and shared network drives

You can also:

- Add CDs and DVDs
- Add individual songs
- Add cover art, titles, albums, etc.
- Create playlists
- Use the auto-scan feature to scan movies or music
- Add and scan supported files from third-party media managers, for example, iTunes
- Edit media information for DVDs, CDs, etc.

To view and select the media from the Navigators, including wireless touch screens, on-screen, Control4 apps, and System Remote Control devices, you first need to add and scan the media to the Control4 controller.

For the MP3, WMA, M4A/AAC, or FLAC files stored on an external hard drive or network location that you add and scan, you can create playlists saved to the Control4 controller's hard drive in the media database.

> Note: Speaker Point does not support M4P/AAC. Play songs through Speaker Point using MP3.

> Note: Internet radio supports only MP3, WMA, and MP4 streaming radio stations.

> Tip: The Control4 system must be functioning correctly before performing any of the tasks mentioned in this section. For example, if a disc changer does not appear in the project tree and is not identified and connected to the system, media cannot be added to it.

Overview of media management

Media configuration and media management are controlled in the Composer (Pro, HE, and ME) software. The primary controller that runs Director always runs Media Manager and the media database (SQLite 3.1).

- Media Database–Migrating from pre-OS 2.0 to OS 2.0 and later requires a media database conversion and schema changes; consequently, the media databases in OS 2.0 are smaller.
- Media Manager–All scans are performed by the Media Manager running Director on the primary controller. Note: Composer Pro configures scanning only, and does not scan the media.
- Media Lookup Service–This service now runs either in Composer Pro or Media Manager.
- **Composer New/Edit – Search**—For media metadata lookup when media has not been scanned properly. The information retrieved can be edited and written to the media database, and/or the metadata can be written to the tags.
- **Media Manager**—Uses online media lookup. IMPORTANT! Controller registration is required on MyControl4 to use this service for versions later than Release 1.6.

Other Media Managers: You can use other media managers, for example, iTunes, Windows Media Player, and Media Monkey to create or manage MP3s and WMAs. You can still use Composer Pro, Composer ME and Composer HE to configure media files for a Control4 system.

Media Manager

New scans

- Scans Id3 tags that are embedded in the file.
- The title, album and artist names are extracted from the file system folder and filenames.
- The metadata lookup based on title searches comes from Gracenote.
- In OS 2.0 and later, scans are now much faster.
- Press **F5** to refresh after new scans.
- Scans can be tied to events, button presses, etc.

Scans where content is in the media database

- Scans for any updated Id3 tags in the file, or you can synchronize the media database based on the configuration.
- If no metadata is in the media database, the metadata lookup is based on title searches from Gracenote.

Other Media Manager considerations

- Media Manager scans only one device at a time. If several devices are configured and are in the queue, they will be scanned sequentially.
- Composer Pro does NOT need to be connected when Media Manager is performing a scan.
- Scans can be performed manually in Composer Pro as an event or in an automated schedule.
- If the path becomes disconnected, the metadata will not be deleted.

- If devices are modified, the tags will update.
- If you are using a third-party Media Manager, synchronization will occur if set.

Media storage

Audio and video files can be stored on one or more of the following devices:

- **Home Controller disk space**—Home controllers with disk space can host audio and video content. Note*:* Dealers must provide their own backup solution or use a NAS with mirror/recovery capabilities.
- **USB-attached storage**—Both audio and video can be stored on these devices, although Control4 does not recommend doing so due to poor performance.
- **Network-attached storage** (Samba-mounted)—Control4 recommends this solution for audio and video files due to better performance and backup/recovery capabilities.

As with previous releases, all media storage devices must be added and configured in the Composer Pro project. Composer Pro does not automatically discover new media storage devices. The storage locations are not available in the Navigators until the device is scanned.

Media lookup service

- Control4 uses Gracenote for its lookup services.
- Media lookup is optional. See the Media view in Composer Pro Getting Started to disable lookup (set to **Never** in scheduling).
- Media lookup requires that the controller be registered at customer.control4.com.

Configure video scanning of network storage

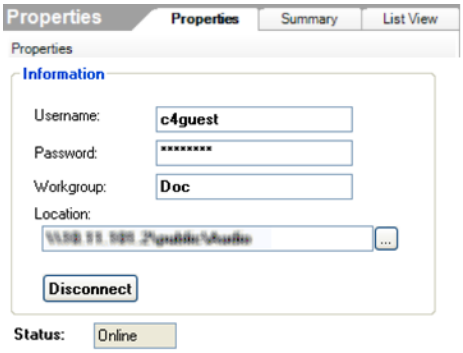
Use the System Design and Media views to set up scanning of video devices, such as disc changers or media players, to play video files from network-attached storage. Scanning can occur for devices or extensions.

Prerequisites

- Ensure that the video device is installed as directed in the Control4 Installation and Setup Guide for the device.
- Ensure that the Network File Storage driver is added to the room in the Composer Pro project.

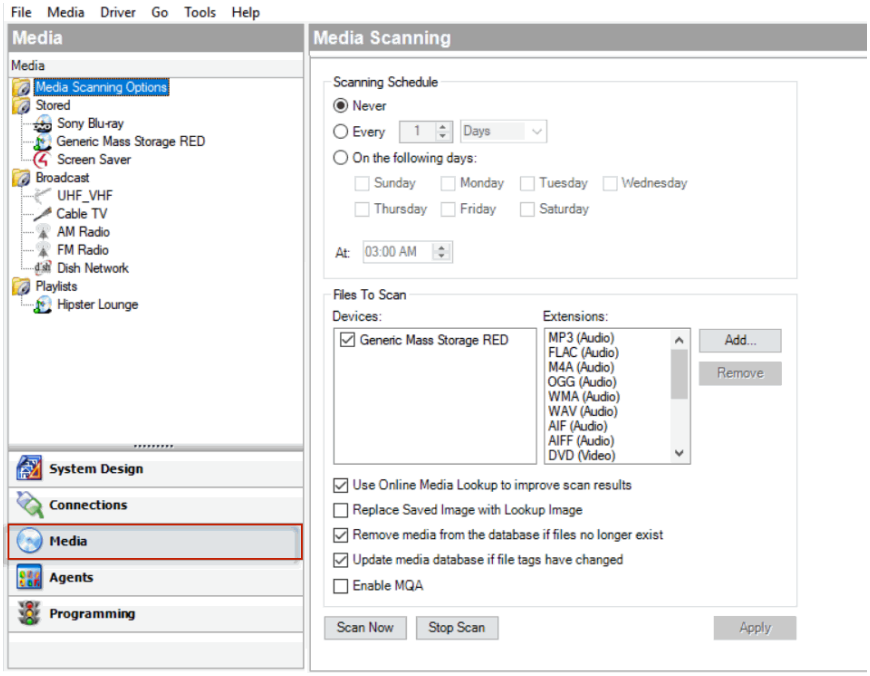
To configure video scanning:

1. Start Composer Pro and connect to a Director.
2. Click **System Design**.
3. In the project tree, select **Network File Storage**.
4. (Optional) To access the files in the storage, if you have password protection enter your user name, password, and workgroup in the Properties pane. If you do not have password protection, go to Step 6. Click the **browse** button to locate the path if you don't know it.
5. Click the **Search** button to locate the storage.
6. Click **Connect**.



7. Click the **Media** view.
8. In the tree, select **Media Scanning Options** to set up a schedule for scanning. To set up to scan the media now, click **Scan Now**, skip Step 9, and then read the Scanning Schedule in Step 10.

9. Set up the scanning schedule and the files to scan.



10. Set the schedule as follows:

- **Scanning Schedule**—Select one.
- **Never**—Select if you never want to schedule an automatic scan.
- **Every** x **Days or Weeks** (up to 10) —Select the frequency to scan.
- On the following days—Select Sunday through Saturday.
- **At <time>**—Use the **up** and **down** arrows to select the time. Highlight **AM** or **PM** and type the value: AM or PM.
- **Files To Scan**—Select a device and extension.
- **Network File Storage**—Select if you have a NAS you want to scan.
- **USB Drive**—The manufacturer's USB drive appears here. Select if you have a USB drive you want to scan.
- **Extensions**—Use the **up** and **down** arrows to select the format to add or remove from the list. To add a format if it doesn't appear in the list, use the **down** arrow to select the extension, select **Video**, and then click **Add**. Click **Remove** to remove that format from the list. Note: The list only allows format types that are supported in the Control4 system.
- **Use Online Media Lookup to improve scan results**—Check if you don't want the search to access the Internet for every format lookup, for example, a specific title or cover art. **Tip**: Properly tagged files will result in must faster access.

- **Remove media from the database if the files no longer exist**—Check to remove database information when a media file has been deleted. Be careful, however, because if, for example, you disconnect a USB drive with media on it, the database files will delete them if checked, and you may not want to delete them if you use the drive again.
- **Update media database if file tags have changed**—Check to have the database updated if the metadata changes.

11. Click **Apply**.
12. Click **Scan Now** to start the scan immediately or **Stop Scan** if you've started the scan and want to stop it.

Setting up media auto-scan

Use the auto-scan feature in Composer Pro to scan media automatically. This section applies to disc changers, media players, network-attached storage, and USB drives.

> Note: Composer Pro does not need to be open to scan media. If you started a scan in Composer, you can close the program while the scan finishes. Also, scheduled scans can run automatically or be started through programming.

Prerequisites

- Ensure that the video device is installed as directed in the Control4 Installation and Setup Guide for the device.
- Ensure that the Network File Storage driver is added to the room in the Composer Pro project.

To schedule a regular scan of media:

1. From the Media view, select Media Scanning Options. To scan your media now (and not set up a scheduled scan), click **Scan Now** and skip the Scanning Schedule in Step 2.
2. In the Options pane, set the schedule as follows:
   - **Scanning Schedule**—Select one:
   - **Never**—Select if you never want to schedule an automatic scan.
   - **Every x Days or Weeks (up to 10)**—Select the frequency to scan.
   - **On the following days**—Select Sunday through Saturday.
   - **At <time>**—Use the up and down arrows to select the time. Highlight AM or PM and type the value: AM or PM.
   - **Files To Scan**—Select a device and extension.
   - **Network File Storage**—Select if you have a NAS (network attached storage) device you want to scan.
   - **USB Drive**—The manufacturer's USB drive appears here. Select if you have a USB drive you want to scan.
   - **Extensions**—Use the up and down arrows to choose which file types to add or remove. To add a file extension (if it doesn't appear in the list), use the down arrow to select the extension, select Video or Audio, and then click Add. Click Remove to remove that file type from the list.
   - **Use Online Media Lookup to improve scan results**—Check if you want the scan to access the Internet to search for missing metadata information (title, cover art, genre, tracks, or other information).

     > Tip: To update existing media with high-resolution cover art after updating your system to OS 2.8+, check this box and scan the media files.

- **Remove media from the database if the files no longer exist**—Check to remove database information when a media file has been deleted.

> Important: If you disconnect a USB drive with media on it and run a scan with this option selected, the media database entries will be deleted, and you may not want to delete them if you use the drive again.

- **Update media database if file tags have changed**—Check to have the database updated if the metadata changes.
- **Enable MQA**—Check to enable MQA Audio in the project. See ctrl4.co/mqa for more information.

3. Click **Apply**.
4. Click **Scan Now** to start the scan immediately or **Stop Scan** if you've started the scan and want to stop it.

Disc changer

This section applies to a Sony CX777ES Disc Changer. The benefits of running a disc changer with bidirectional communications (RS-232), such as the Sony CX777ES, is that you can scan your DVDs/CDs stored in the disc changer to identify and index media, and automatically apply cover art and information about the media.

You can configure your system in Composer Pro to scan media on the associated disc changer either automatically or manually when the **Auto Scan** option is selected in the System Design Properties pane for the disc changer. The default is to scan media manually (Auto Scan: Off).

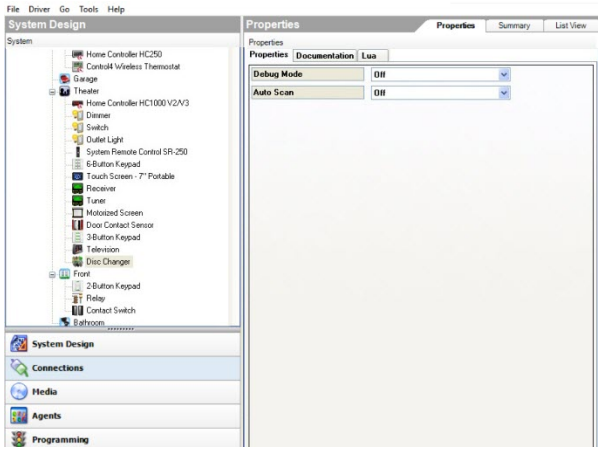
When the **Auto Scan Enabled** option is checked on the Disc Changer Properties page, the Auto Scan feature automatically detects when a disc is added to an empty slot or when a disc is removed. The Navigators are automatically updated with the change. The Auto-scan feature does not detect when a disc is replaced or swapped.

> Note: If a DVD/CD is scanned and the media is not recognized, it is titled 'unknown.' You can edit the information about the DVD/CD, and manually provide this information from either Composer Pro or the Navigators. If this DVD/CD is then moved to a different slot, the system applies this same information.

To auto-scan added media to a disc changer:

1. Start Composer Pro and connect to a Director.
2. Click **System Design**.
3. In the project tree, select the device, for example, **Disc Changer** with a serial connection (RS-232) to the controller, for example, the Sony CX 777ES Disc Changer.

4. In the device's Properties pane, ensure that the **Auto Scan Enabled** option is checked.



5. Open the disc changer drive, and **add** or **remove** the DVD/CD.
6. Close the drive to begin the auto-scan. The information for the added DVD/CD is automatically made available on the Navigators. See also "Setting up media stored on a disc changer."

Setting up media stored on a disc changer

Use the Media view to add and scan media according to the options available on your disc changer. Adding and scanning DVDs and CDs loaded in the disc changer populates the media information in the media database. This permits users to view the media from their Navigators.

This section covers how to:

- Add media to a disc changer
- Scan media in a disc changer

Prerequisites

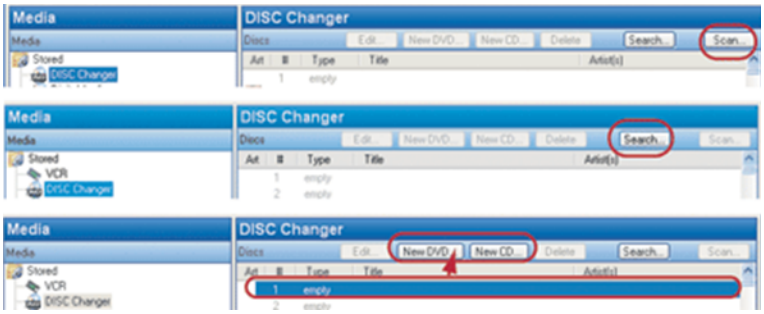
- The system must be registered at customer.control4.com before using the online Media Services. To register the system, see 'Registering the Control4 system' (Composer Pro Getting Started).
- Ensure that a controller is added to the project tree and identified to the network.
- Ensure that a disc changer is added to the project tree and identified to the network.

To add media to a disc changer:

1. Start Composer Pro and connect to a Director.
2. Click **Media**.
3. Select **Disc Changer** in the Media project tree. If any of the following options are available for the selected disc changer, the buttons will be active (not grayed out):

   Scan–Lets you scan all media located on the disc changer to add to the media database (recommended if available).

Note: Because media scanning has been moved to the background, the scanning status is only available through Director status messages. To do this, you can either watch the Director status line or re-select the media to view the content that has been scanned.



   Search–Lets you search for media titles located on the disc changer to scan and add them to the media database.

   Edit–Lets you edit your entries (artist, album, title, etc.).

   New DVD **or New** CD–Lets you add new DVDs and CDs to the media database.

4. Always use **File** > **Refresh Navigators** to make the new media accessible through the Navigators in the Control4 system.

Note: Control4 has not implemented a UI for browsing CDs stored in a disc changer. Use a Legacy Navigator (prior to OS 2.0) that supports this functionality if this is an important consideration.

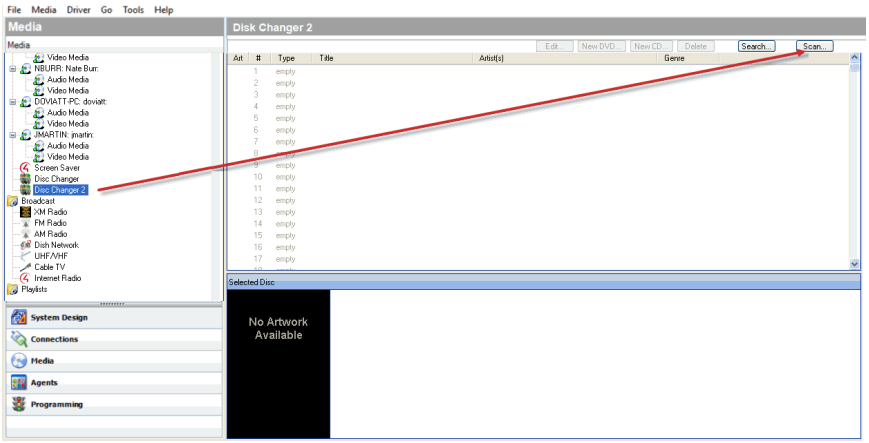
Scanning media in a disc changer

The following sections describe how to add media to the media database using the options listed above.

To scan media loaded in a disc changer to add it to the media database:

1. Click **Connections**.
2. Ensure the disc changer is connected to a serial port on the controller.

   Example: From the Control/AV tab, select **Sony CX777ES Disc Changer**; ensure that the **Serial RS-232** is connected to the correct serial port (1 or 2).
3. From the **Network** tab, ensure that the controller has an address.
4. Click **Media**.
5. Select **Disc Changer**.
6. In the Disc Changer pane, click **Scan** > **OK to Scan all**.



Note: If the following error message displays, "Your system has not been registered on MyControl4," you can click **Yes** to continue scanning music without registering, but the music scans based only on the current metadata stored in the music files. You will need to enter any missing information manually for each disc.

Example: If no cover art is found in the file's metadata, then no cover art is associated with the music unless the system is registered in 4Sight, and you can go to the online media lookup (Media view > Edit > Name > Search > Select > Next) to obtain the cover art for the music. See " Register the controller from a Navigator" in Composer Pro Getting Started for instructions.

Automatically scan media

The following steps use the Sony CX777ES Disc Changer as an example.

To auto-scan added media:

1. From the project tree, click the **Sony CX 777ES Disc Changer**. The device Properties pane appears for this device.
2. Ensure that the **Auto Scan Enabled** box is checked.

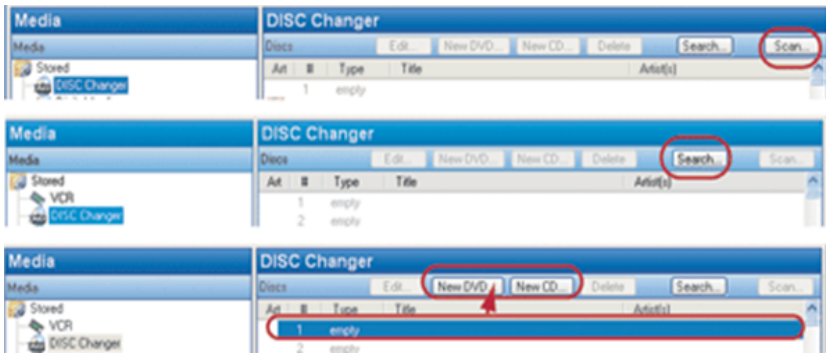
   When you select the **Auto Scan Enabled** option from the device's Properties page in Composer Pro, an automatic scan of the disc(s) is available if you add a new disc to an empty slot, or if a disc is removed. In those cases, the disc changer automatically recognizes the change, and the Navigators automatically update the changes. The disc changer recognizes the changes in its slot when its door closes to perform the auto-scan. The Auto-scan feature does not detect when a disc is replaced or swapped.

   Note: Control4 recommends that you check the **Ignore Unexpected Play, Stop, or Pause** option. This option should be checked if you are configuring a system with lighting, for example, when the movie starts playing, and the lights in the room dim. Normally, you can use the Play, Stop and Pause functions on the disc changer during the course of a movie being played. By checking the option, these functions are ignored by the system.
3. Open the disc changer drive's bay, and change the existing DVD or CD.
4. Close the bay.
5. The auto-scan begins automatically when the disc changer door closes, and the information for the new DVD or CD is available in the Navigators.

Searching media in a disc changer

To search media loaded in the disc changer to add it to the media database:

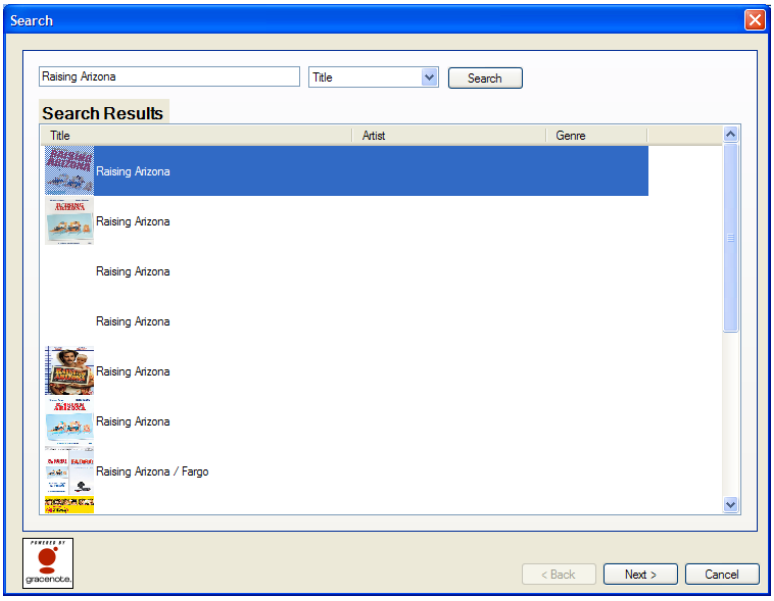
1. Click **Media**.
2. Select the **Controller** in the project tree.
3. In the Disc Changer pane, click **Search**.



4. Type the **DVD** name in the blank box. The possible DVD titles from the Web database appear in the Search Results window. Use the **scrollbar** to find the appropriate DVD title

   Example: “A Beautiful Mind”

   Select the appropriate DVD title, drag it over the empty line item, and then select it again.



5. Repeat the previous steps for each of the DVDs/CDs in the disc changer you want to add to the media database.
6. Click **Finished**.

Edit CD or DVD information

To edit a scanned DVD or CD:

1. Select the **CD** or **DVD** to edit.
2. Click **Edit**.
3. Change the Title, Director or Artist, Album or Movie, Studio, Genre, etc. You can also change the location, locate the cover art (Find Art File), and so on.

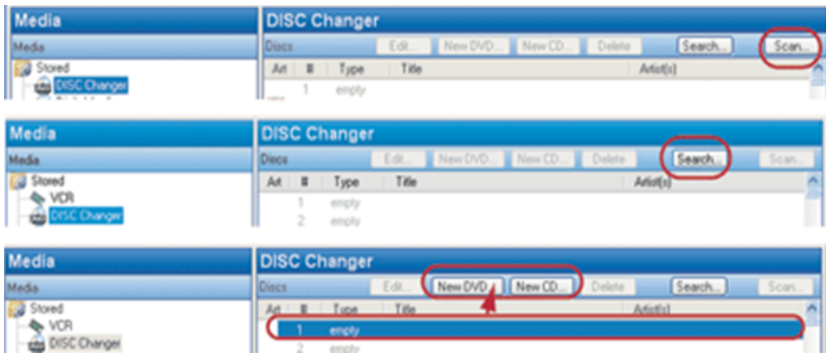
4. Click **OK**.



Adding a DVD or CD

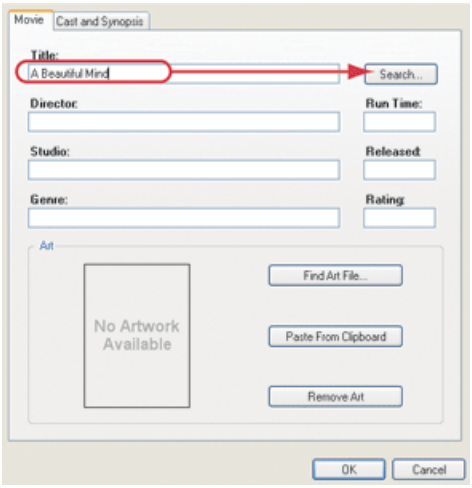
To add a DVD or CD:

1. Click **Media**.
2. Select **Disc Changer** in the Media pane.
3. Select the empty box for the **New DVD** and **New CD** buttons to appear.

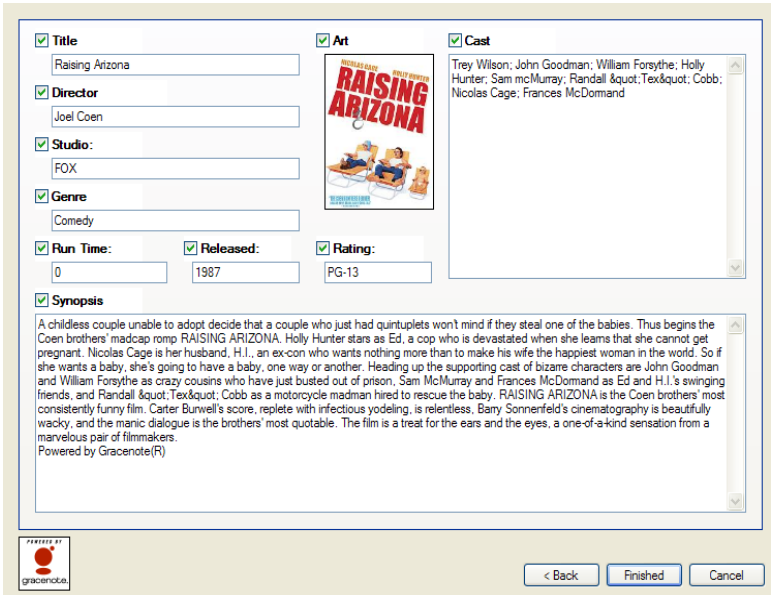


4. Click either **New DVD** or **New CD** as appropriate. The New Movie or New Album dialog appears.
5. In the Title box, enter the DVD you want to play.

   Example: "A Beautiful Mind"
6. Click **Search**.



7. When the Search dialog appears, use the **scrollbar** to find the appropriate cover art, and select it.
8. Change the search criteria, and search again if needed. The possible matches from the web database appear in the Search Results window.
9. Click **Next**.
10. (Optional) Customize the DVD/CD information before adding it to the media database by editing the text in the box.



11. Click **Finished**.
12. Click **OK**.

Setting up videos for a media player

Use the Media view to identify the videos that you want the media player to play.

Prerequisites

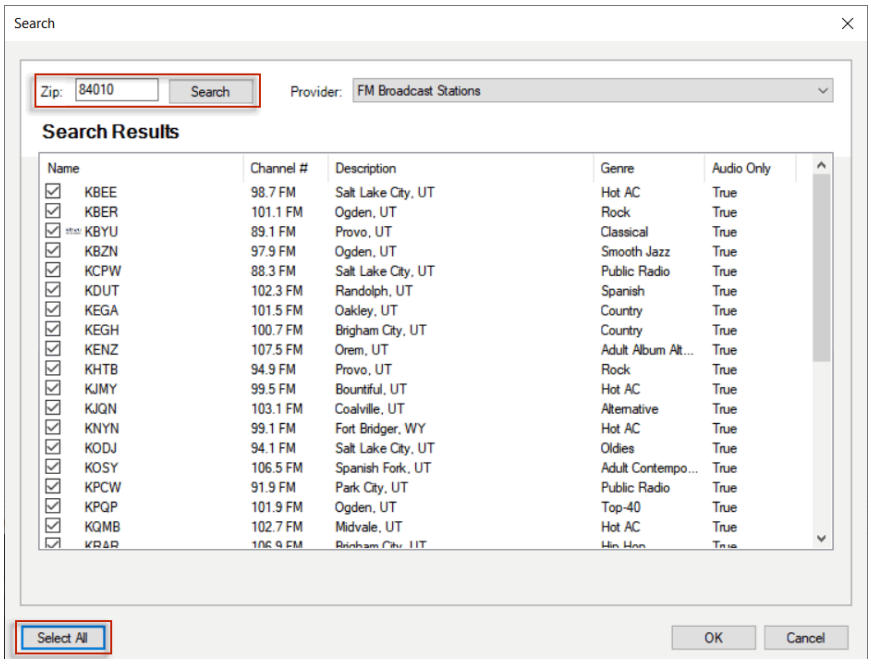
- Ensure that the media player is installed and added to the Composer Pro project.
- Ensure that the network-attached storage contains the videos that will play on the media player, and that the NAS is added to your Composer Pro project.

Setting up media for radio stations

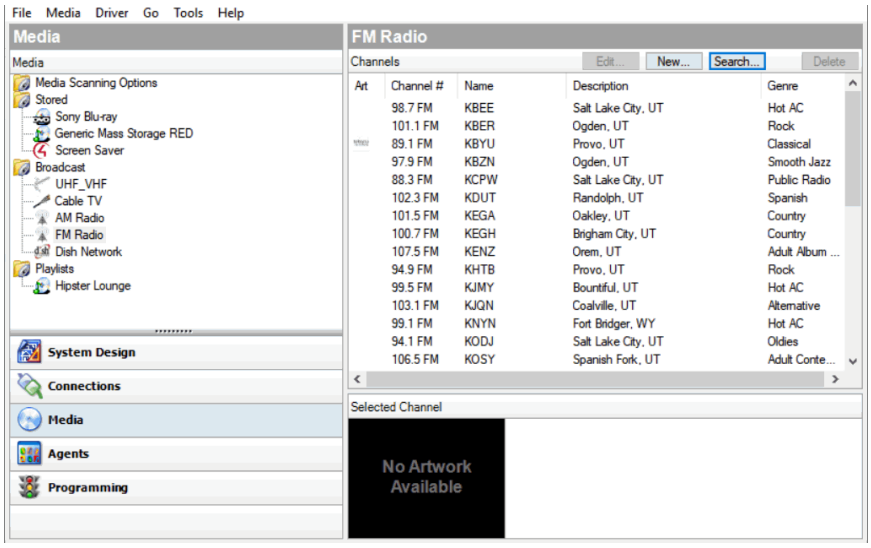
Use the Media view to set up radio stations for a Control4 system.

To set up media for radio broadcast stations:

1. Start Composer Pro and connect to a Director.
2. Click **Media**.
3. Select the broadcast media type (AM Radio, Dish Network, etc.).
4. Click **Search**.
5. In the **Zip** box, type the ZIP Code of where the Control4 system is located.
6. Click **Search**, and use the pull-down menu to select the listings. The available stations are populated in the Search Results window.
7. Check the individual boxes of stations that you want to make available in the Navigators; or click **Select All**, and then click **OK**.



The selected stations populate the media source channel list (such as the FM Radio list shown next).



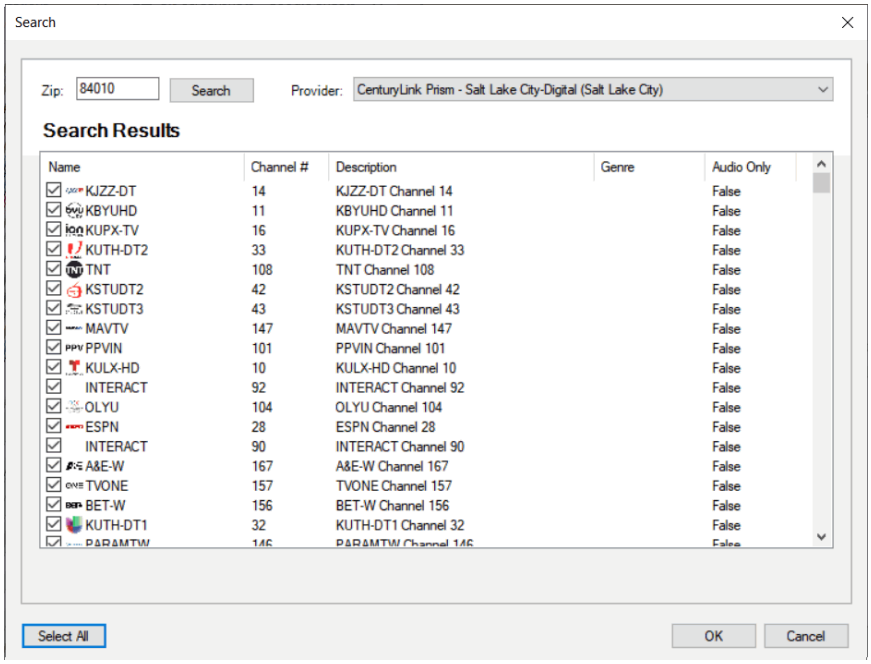
8. Repeat the previous steps for each additional media source, e.g., cable, satellite, or AM radio. (Each of these services must be set up separately.)

Setting up media for television stations

Use the Media view to set up television channels for the Control4 system.

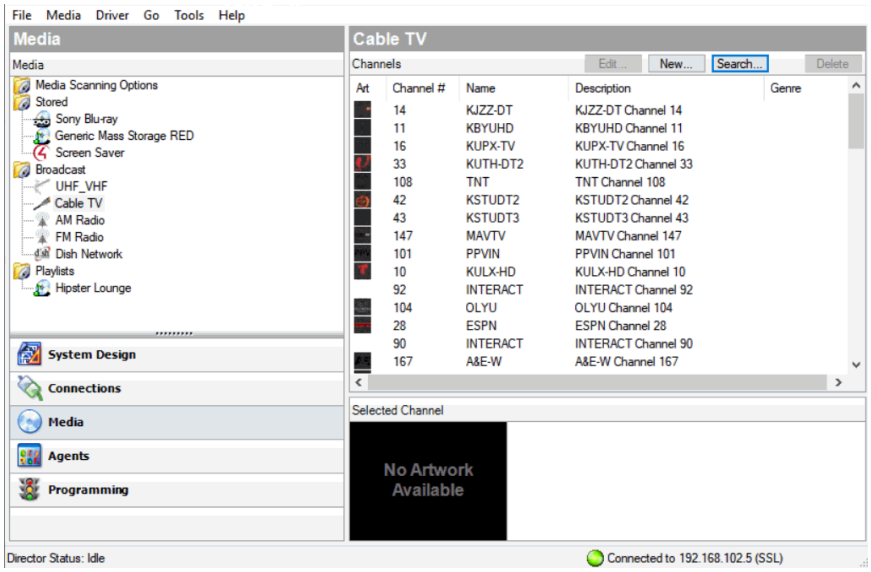
To set up media for television broadcast channels:

1. Start Composer Pro and connect to a Director.
2. Click **Media**.
3. Select the broadcast media type (UHF/VHF, satellite, cable, etc.).
4. Click **Search**. When the dialog appears, type the ZIP Code for the Control4 system's location in the box.
5. Click **Search**, and use the pull-down menu to select **Local Broadcast Listings**. The available channels are populated in the Search Results window.
6. Check the individual boxes of channels that you want to make available in the Navigators, or click **Select All**, and then click **OK**.



The selected channels populate the media source channel list (such as the UHF/VHF

channel list shown next).



7. Repeat the previous steps for each additional media source, e.g., cable, satellite, AM radio, or FM radio. (Each of these services must be set up separately.)

Setting up Internet radio stations

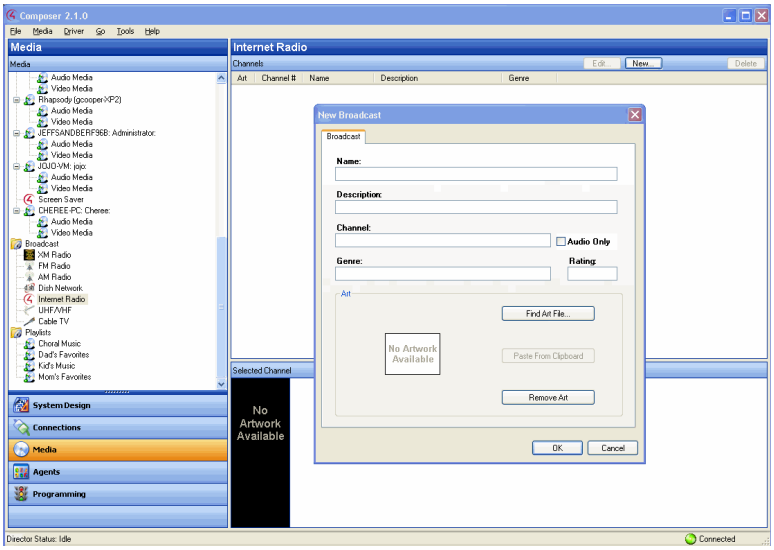
Use the Media view to add Internet radio stations that you can play from touch screens, Control4 apps, or on-screen Navigators.

Prerequisites

- Ensure that the controller is installed and identified as directed in the controller's installation guide.
- Ensure that the Internet radio stations you add are in MP3 or WMA format. You'll need to create a new form for each station you add.

To configure Internet radio:

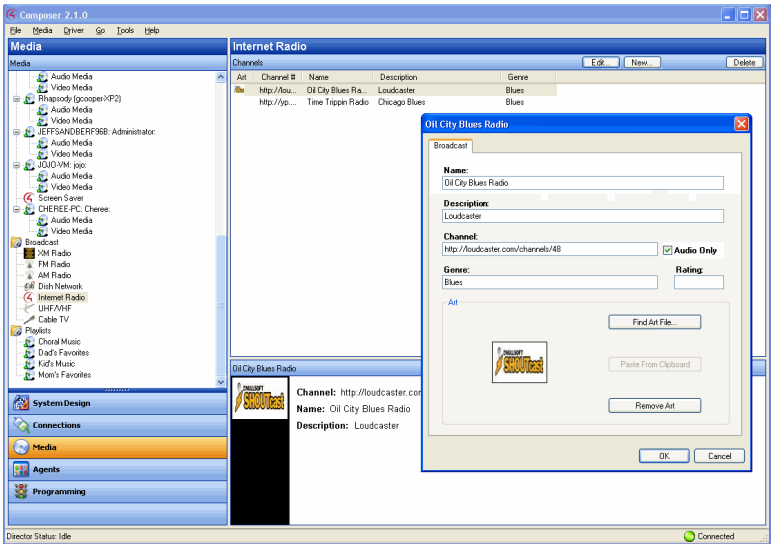
1. Start Composer Pro and connect to a Director.
2. Click the **Media** view.
3. From the media list, click **Internet Radio**.
4. In the Internet Radio pane, click **New**.



5. Fill out the form:

1. **Name**–Add the name of the station.
2. **Description**–Add a description that's meaningful.
3. **Channel**–Add the URL for the channel. **Note**: Locate the URL of the MP3/WMA stream that starts with **http://**... **Note**: Ensure that **Audio Only** is checked.
4. **Genre**–Add a genre if appropriate.
5. Check **Audio Only** for listening.
6. **Cover Art**–If you'd like, you can copy the radio station art to your list. In a browser, go to the link and click **Images**. Click **Find Art File** to locate an image, copy it to your clipboard and then click **Paste from Clipboard**.

7. Click **OK**.



6. Go to the touch screen, Control4 app, or on-screen Navigator and select the **Listen** > **Station**. Note: If you have several sources, Internet Radio appears under Sources.

Importing a DVD list from a file

Use the Media view to populate DVD metadata stored on a disc changer.

To import a DVD list:

1. Start Composer Pro and connect to a Director.
2. Click **Media** view.
3. Right-click on the **Disc Changer,** and select **Import DVD List from File**. Composer Pro automatically populates the slots of the disc changer with the DVDs stored in each slot as listed in the file that is imported.

   The imported file must be a CSV (comma-separated value) file listing the slots and the titles of the DVDs, one per line. You can create this file using a simple text editor or spreadsheet program by exporting a spreadsheet file in a CSV formatted file. This new feature provides a simple and easy way to quickly configure all of the DVDs in any manufacturer's disc changer.

   Example formatting for CSV file:

   - 1, Toy Story
   - 2, The Incredibles
   - 3, The Perfect Storm

Using external storage devices

You can access digital music from an external storage device in your Control4 system. External storage devices include USB flash drives, USB external hard drives, or a shared network storage area (for example, a computer's hard drive).

The following applies when setting up an external storage device:

- USB flash drives or USB external hard drives must be formatted as FAT32 devices.
- Shared drives on a Windows system cannot contain a space in the directory/pathname.

Set up the external storage device or networked file storage as described in this section.

> Note: When you disconnect the external drive (USB, network, etc.) from the system, the music is no longer available. Reconnecting the external drive makes the media available again.

Attach and scan external storage devices

To attach and scan external storage devices using a USB *connection*:

> Note: External storage devices must have media stored in unprotected MP3/WMA format.

1. Power up the external storage device.
2. As appropriate, use the documentation provided with your Control4 controller to attach the external hard drive using the USB port.
3. Start Composer Pro and connect to a Director.
4. Click **Media**.
5. In the project tree, select the external device.
6. Click **Scan** in the device's pane.

   You can add media from the external storage device when it is connected to the controller. However, it is recommended that you connect your external drive directly to the PC where you want to copy the media. When scanning, the media appears on the device.

Access and scan network storage devices

To access and scan network storage devices:

> Note: The network location must be an open share location (no password required).

1. As appropriate, use the documentation provided with your operating system to create a shared network drive.

Example: Using Windows XP to make a local C:/ Drive directory available on the network, right-click the folder and select **Sharing and Security**. Click the **Share this folder** button.

2. Click **System Design**.
3. From the My Drivers tab, double-click **Network File Storage** to add it to the project tree.
4. Highlight **Network File Storage** in the project tree, and configure the username, password, and workgroup (or domain) for the network file share, and then browse to its network location.

   This information varies between types. Contact your System Administrator or Control4 Technical Support if you need help with this information.

5. Click **Media**.
6. In Network File Storage, notice the options: Audio Media and Video Media.

7. To add or scan audio files, in the media list select **Audio Media**, and then click **New** or **Scan**.

Notes:

- When adding music to Network File Storage from the desktop, the music folder must reside in My Network Places so components can access the music files. A mapped network drive is not applicable in this situation.
- Audio files must be in one of the following formats to be scanned and played by the Control4 system: MP3, WMA, or FLAC. If you connect an iPod or another audio device, the Control4 system can play back the files supported on that device; but only MP3 files can be decoded.

8. To scan video files, in the media list select **Video Media**, and then click **Scan**.

Notes:

- Video files must be in one of the following formats to be scanned by the Control4 system: .avi, DVD, .iso, .m4a, mpeg, .mpg, or .wmv. These video files can only be played using a media player.
- Video playback is not supported from files stored on a USB drive, so the Video Media option is not displayed in the list under a USB drive.

Creating a playlist

Use Composer Pro to create a playlist from digital media.

You can create playlists from the touch screens, Control4 apps, or on-screen Navigators also. See the Control4 System User Guide for details.

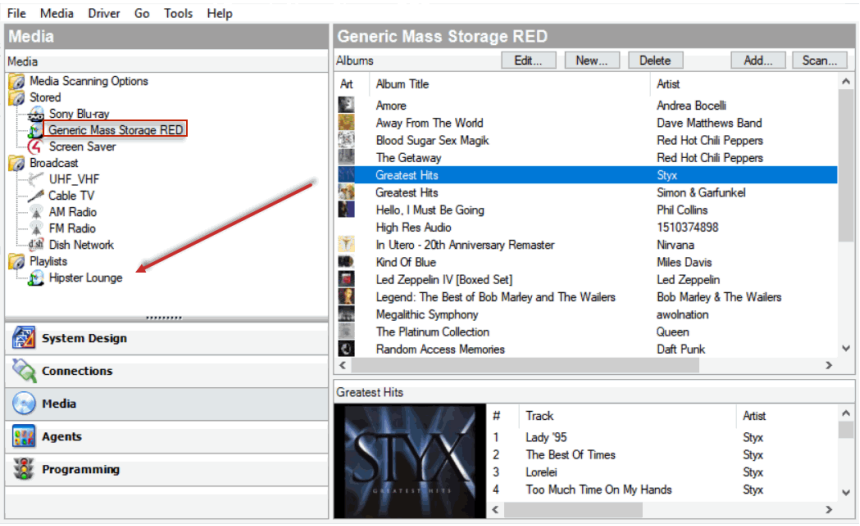
To create a playlist:

1. Start Composer Pro and connect to a Director.
2. Click **Media**.
3. In the Media view, go to the Media menu, and select **New Playlist**.
4. **Name** the playlist.

   Tip: You can rename it any time by right-clicking the playlist, selecting **Rename Playlist**, and then typing a new name.
5. Select the controller or other media on which the songs are stored, and ensure that you have scanned the media from the storage to make the media known to the controller.
6. Drag the list of songs to the playlist.

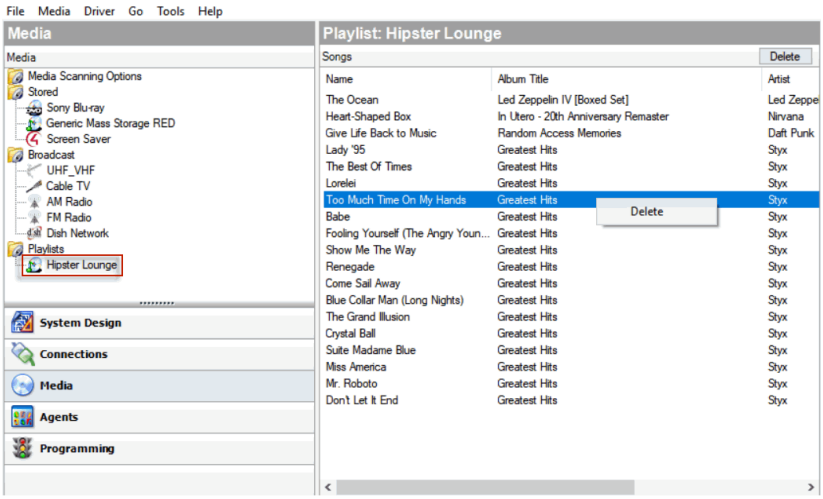
   These playlists are designed exclusively for streaming media in digital audio. If the customer subscribes to the Rhapsody Music Service, then Rhapsody playlists can be created using a Navigator (see the Control4 System User Guide for details){XE “Rhapsody playlist” }. In OS 2.0 and later, playlists can include CDs/DVDs, broadcast channels or stations, but they are a separate playlist from those in Rhapsody.

   Note: To set up a Rhapsody subscription on behalf of the user or yourself, obtain a Rhapsody account at http://www.control4.com/rhapsody, and then refer to the information about Rhapsody in the Control4 System User Guide.
7. Drag every album or song you want to add to the playlist onto the playlist name.



8. After adding at least one album or song, select the playlist to view the contents.
9. (Optional) Remove songs:

- To remove a song, right-click and select **Delete**.
- To remove multiple songs, press and hold the **Shift** key. Select the songs, right-click anywhere in the selected list, and select **Delete**.
- To remove selected songs, press and hold the **Ctrl** key. Select the songs to delete, and select **Delete**.



The playlist can now be played from or edited in the Navigators.

Testing the media connection

To test control of media through the Control4 Navigators (System Remote Control, on-screen Navigator, or any of the other Navigators or touch screens), use the steps outlined in the Control4 System User Guide.

Suggested test items:

- Play an album
- Add an album or track to the Now Playing queue
- Play a playlist created in Composer Pro
- Create a playlist on a touch screen or on-screen Navigator
- Play multiple streams of music (play different music in different rooms)
- Play a movie on the television

Editing media information

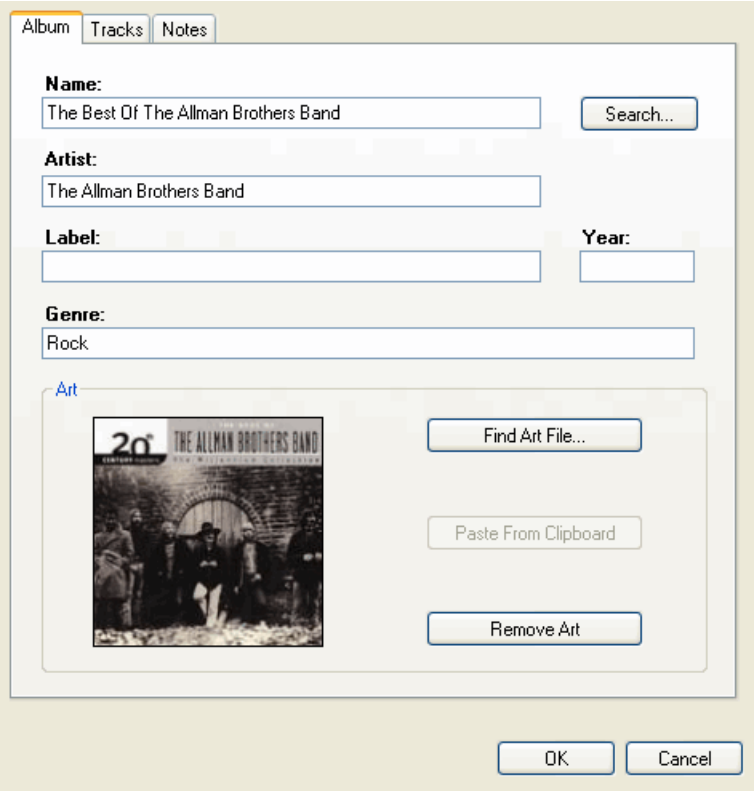
Use the Media view to edit the media information for 'unknown' DVDs or CDs. You can edit the media information in the Navigators: on-screen, touch screen, or Control4 app.

Editing CD information

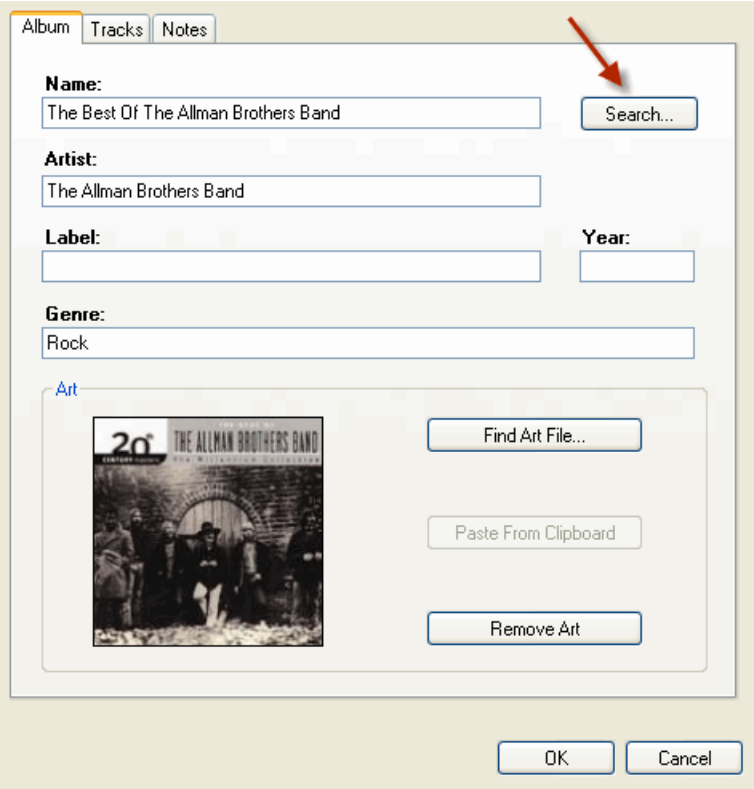
Use the Media view to edit CD album names, artists, genre, or cover art for a Control4 system.

To edit information about a CD:

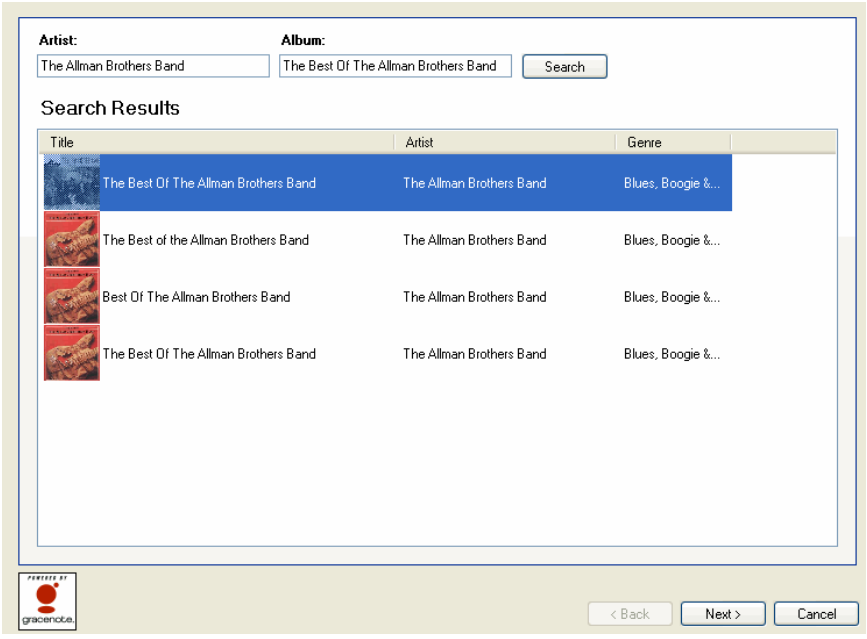
1. Start Composer Pro and connect to a Director.
2. Click **Media**.
3. In the project tree, double-click the **CD storage** device on which you want to edit CD information; for example, CD, disc changer, or controller.
4. Select an album and click the **Edit** button, or double-click the **album title**.
5. In the Album tab, edit the Album Name, Artist, Label, Genre, or Art. Make text changes as applicable.
6. Click **OK**, or use the additional features outlined below.



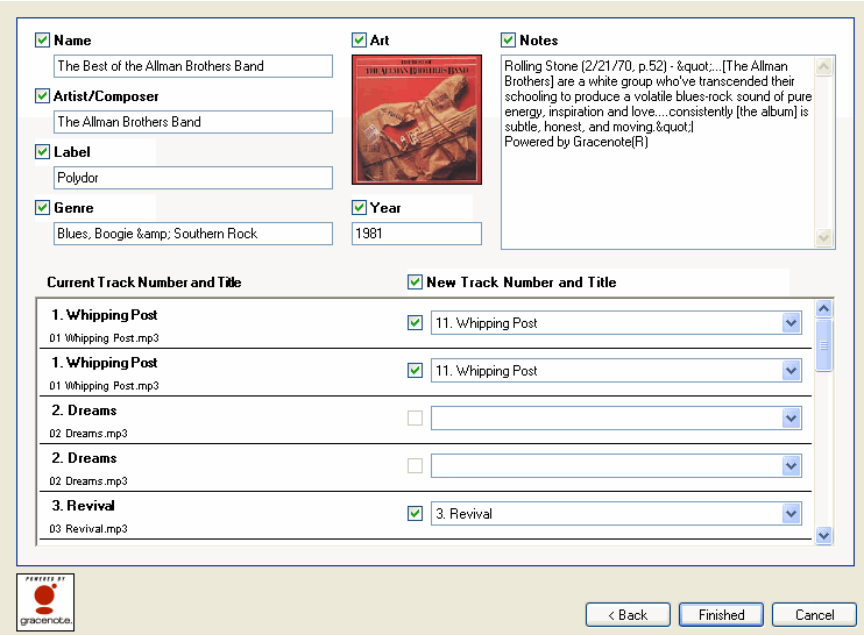
7. Search on a **Name** or **Artist** to search the database for similar entries.



8. Select a search result. Double-click to select an album title, and click **Next**.



9. View or edit the information about the album: Name, Artist/Composer, Label, Genre, Year, Art, and Notes.
10. Change the information as needed, and then click **Finished** to save your changes.



11. Select the **Track** tab, and edit or remove tracks as needed.
12. Select the **Notes** tab, and edit as needed for future reference.

Editing DVD information

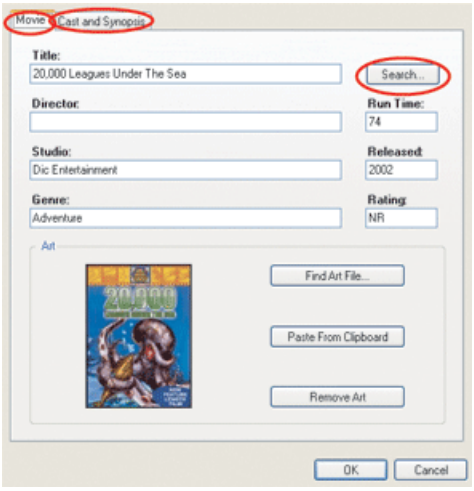
Use the Media view to edit DVD title, director, studio, genre, runtime, release date or rating in a Control4 system.

> Tip: New in OS 2.0 and later, you can edit DVD and video titles on the touch screens and on-screen Navigators.

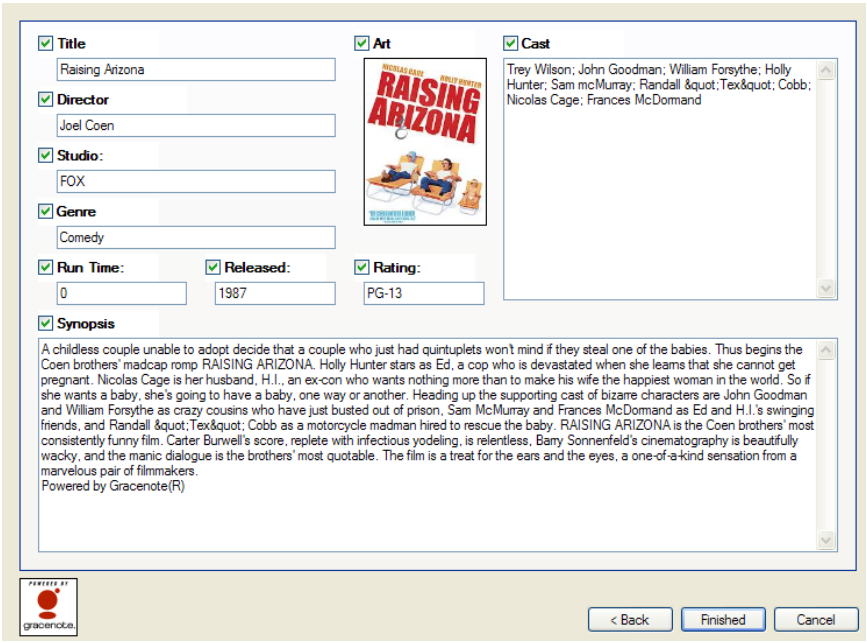
To edit information about a DVD:

1. Start Composer Pro and connect to a Director.
2. Click Media.
3. In the project tree, double-click the Disc Changer or DVD.
4. Select a movie and click the Edit button, or double-click under Discs.
5. In the Movie dialog under the Movie tab, edit the DVD title, director, studio, genre, runtime, release date or rating information as needed.

6. Click OK, or use the additional features outlined below.



7. Click Search to present similar entries.
8. In the results list, double-click a DVD.
9. Edit the DVD information.



10. Replace the cover art using one of the options provided.
11. Click the Cast and Synopsis tab to edit text displays as needed.
12. Click Finished to save your changes.

Using and Programming with Agents

Use the *Agents* and Programming views to program agents.

When you program with agents, you typically use these general steps:

1. In *Agents*, define an instance of a type of agent.
2. In *Programming*, use the instance of the agent to program event actions.

> Example: In the Agent view, you can create an instance of a Custom Button where you identify all the buttons you want to program. In Programming, you program the Custom Buttons.

> Note: Agents vary greatly in functionality and flexibility.

Agent types

- **Access**–Lets you hide elements of the user interface on a Navigator and use a pin code to change the settings for the Navigator.
- **Advanced Lighting Scenes**–Lets you change the lighting state, toggle lights, ramp/fade lights, delay on/off, use scene sequencing, flash lights, and so on.
- **Announcements**–Plays a pre-recorded .WAV file, or displays a text message whenever a given event occurs. You can play an audio announcement on any audio output device with a supporting text message that displays on selected Navigators.
- **Backup**—Configure settings for automatic project backups to Control4 online services. Requires a 4Sight subscription.
- **Communication**–Replaces the Intercom agent for systems running OS 2.7 and above. Provides the ability to set up Intercom device groups on the T3 series touch screens–audio and video, and Door Stations (DS2 and DS2 Mini–audio and video) See “ Using the Communication agent”.
- **Custom Buttons**–Lets you make user interface buttons for specialized devices on the Navigators. See “ Using the Custom Buttons agent.”
- **Email Notification**–Lets you send an email message to your email address when specified events occur as defined in programming. See “ Using the Email Notification agent.”

  Notes: (1) 4Sight is required to use the Email Notification and Push Notification agents. See the Composer Pro Getting Started Guide for details. (2) Avoid setting up email notifications for events that occur frequently (e.g., when a Motion Sensor detects motion). If the email notification trigger event occurs too often, it will cause the system to become sluggish.

- **Guest Services**–An agent used to interface a local Control4 system to a Guest Services system within a multi-dwelling or hospitality project.
- **History**–Enables a history tab in drivers built for the History agent, for example, new security drivers built for OS 2.8.+. You can configure settings and view history data from the agent.
- **Identity**–Provides the ability to change the password for the **pro-installer** login for System Manager Web and When >> Then automation.

Light Properties—Manage light properties for Control4 Centralized Lighting modules and loads.

- **Macros**–Macros agents associate programming with events.

  Example: You can create one macro to use in several different programming events or to use on a touch screen when creating Favorites. See " Using the Macros agent."

- **Media Scenes**–Creates a media scene that plays music in selected rooms on your system. See " Using the Media Scenes agent."
- **Navigation—**Add this agent to the system to enable navigation commands in the *Programming* view for T3 and EA On-Screen Navigators.
- **Push Notification**—Lets you define a push notification to be sent to your mobile devices as defined in programming.
- **Scheduler**–Defines conditionals of time to the system, and adds the ability to have scheduled events. See " Using the Scheduler agent."
- **Screen Saver**–Lets you set up a Screen Saver agent so you can create various Screen Savers. See " Using the Screen Saver agent."
- **SNMP Configuration**–Lets you set up and configure devices to monitor via SNMP. Requires knowledge of SNMP and network management. See Example: Program using the SNMP Configuration agent.
- **Timer**–Starts, stops, or repeats a timer based on a given event and action.

  Example: If a Motion Sensor in the system turns on a light when it detects motion, you can use a timer to turn off the light after 15 minutes. Alternatively, you can set a timer to repeat an action whenever the timer expires. See " Using the Timer agent."

- **UI Configuration**—Upload custom wallpaper images and apply wallpapers from both the default set of images and custom images to multiple touch screens and on-screen navigators at once. Supported on T3 touch screens and EA controllers in OS 2.9.0. See "Using the UI Configuration agent".
- **Variables**–Create Boolean, string, and number variables. Review " Examples: programming with variables" for information about creating Variable agents.
- **Wakeup**–Initiates a pre-specified wakeup time in the Navigators. This agent lets you play music, turn on lights, and change temperatures. See " Using the Wake/Sleep agent."
- **Wakeup/Goodnight**–Updated version of the Wakeup agent adding the ability to control shades with a Wakeup scene.

The agent examples listed in the following sections will guide you through the programming steps for each agent type.

Using the Announcements agent

Use the Agents and Programming views to program this agent.

You can create announcements that:

- Display a text-message or Web page on any of the Navigators (on-screen Navigator or touch screens)
- Play an audio announcement through any audio end point or T3 touch screen

- Combine the two mentioned above

> Note: The Control4 system allows up to 10 MB of files for the Announcement agent, and plays a maximum of 15 seconds per announcement. The Announcements agent supports the same audio playback file types as the EA and HC controllers support under My Music.

> Example: This example demonstrates how to create a 'Dinner is Ready' announcement that is activated when the family chef (or dad) presses a custom-programmed button. When the button is pressed, the text message, 'Come to Dinner!,' displays on all of the Navigators in the home, and an audio file of a dinner bell ringing plays.

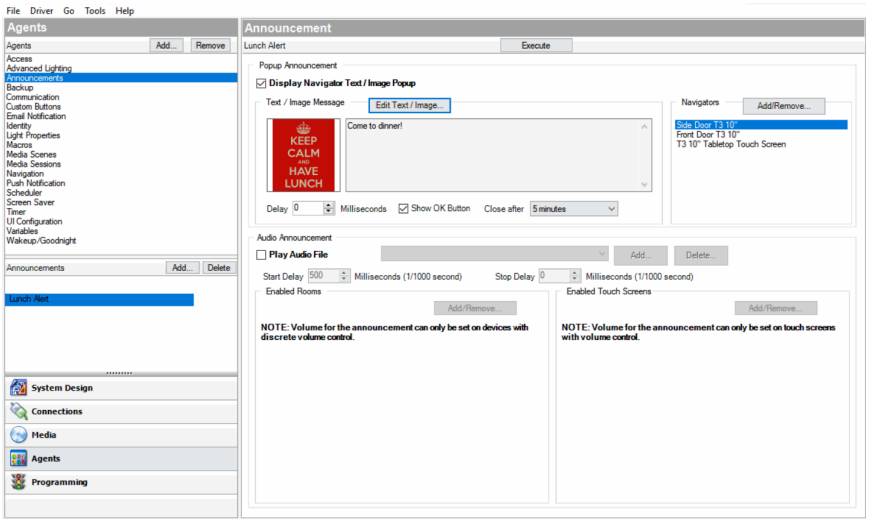
Prerequisites

The following devices are added and identified (with a network address) in the project:

- Controller
- Audio output device (television or connected speakers)
- Navigator with a screen (touch screen or television)
- Any device involved in the triggering event (doorbell contact, keypad, etc.)

To set up an Announcements agent:

1. Start Composer Pro and connect to a Director.
2. Click **Agents**.
3. (First time only) Click **Add** to add the Announcements agent to the project.
4. Select **Announcements**, and then click **OK** to add Announcements to the agent types list in the project. The next time you want to create an announcement, just select the **Announcements** item in the Agents pane and click **New**.
5. With Announcements selected in the left pane, click **New**.
6. Name the **new announcement**, and click **Create**. Example: Come to Dinner!
7. Set up the Navigator text message you want to display.



1. Check the Display Navigator Text/Image Popup box.
2. Click **Edit Text/Image**.
3. Type a text message, a URL, or browse to an image (JPG, GIF, or PNG) to display.

   The text box accepts any HTML code. While certain links and scripts won't be handled, when the announcement is triggered, for example, if you put this text in an announcement, it will show up just as if it were a web page. For example, the following HTML text will display the latest snapshot of a web page:

   <HTML><BODY><IMG SRC="http://tbn0.google.com/images?q=tbn:1uOhCnlc3zbQgM:http://www.inkycircus.com/jargon/images/mountain.jpg" ALT="pumpkin">Visit W3Schools!</BODY></HTML>

   Note: A static image file (JPG, GIF, or PNG) only has to be added to your project once because it is copied to the controller. When added, it is available in the Text Message drop-down menu for use in any additional announcements created.
4. Select the **time** you want the text message to display using the **Close after** drop-down menu (supported display times are from five seconds to 10 minutes).
5. Click **Add/Remove** and check the Navigators that will display the message. Click **OK**.

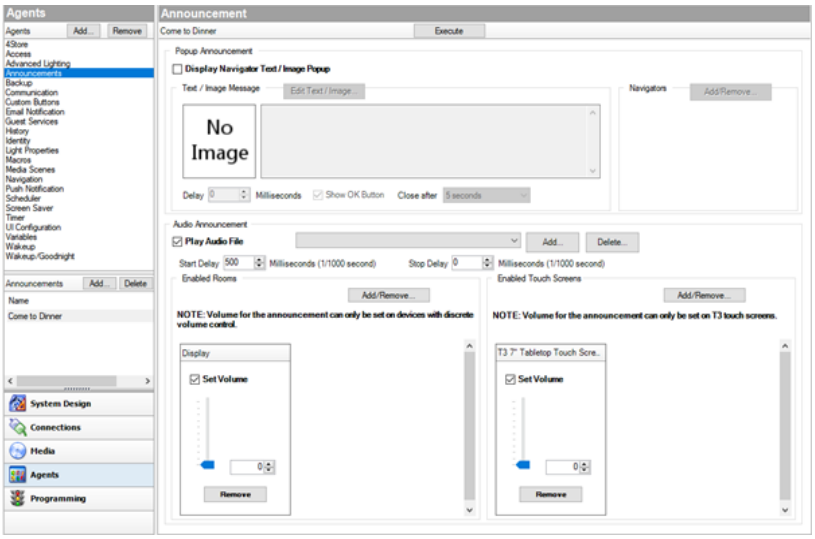
8. **Audio file**—Add an audio file, and set up the audio file to be played.

1. Check the **Play Audio File** box.
2. (One time per audio file) Click **Add** and browse to the audio file to add it to the drop-down menu.

   Note: An audio file only has to be added to your project one time because it is copied to the controller. When added, it is available in the Audio File drop-down menu for use in any additional announcements created.
3. Select the audio file from the drop-down menu.
4. Click **Add/Remove...** and check the **rooms** where the audio file will play. Click **OK**.

5. Click **Add/Remove...** and check the T3 touch screens where the audio file will play. Click **OK**.
6. Set the volume of the audio play for each room and touch screen.

Note: The volume for an announcement only can be set on devices with discrete volume control.



9. Click **Programming**.
10. Verify that the new Announcements agent displays in the Actions list (bottom of list).
1. Select **Announcements**.
2. Make sure the 'Come to Dinner!' message displays in the Announcement Actions pane and that the command is there (green arrow).

11. Program the announcement to play or display with a triggering event.

Example: Program a button-press event (left pane) to trigger the Announcements agent to run 'Come to Dinner!' (right pane).

Using the Communication agent

The Communication agent lets you configure the DS2 Door Stations and T3 Touch Screens (supports audio and video intercom) so that the Control4 system acknowledges the Intercom system and can communicate with it.

The Control4 Intercom app requires that the Communication agent is added into the system.

> Note: The Control4 Intercom app is currently in a beta testing state.

> Important: See Communication Agent Wizard and Migration Process on the Knowledgebase before using this agent to see if additional steps are required to add and use the Communication agent.

> Note: This agent also lets you configure the intercom to allow third-party devices (External Devices) for multi-dwelling units (MDUs). This functionality requires additional training and hardware not covered in this document.

With the Communication agent, you can send calls to multiple touch screens, monitor a room, and other controls.

> Examples:

- If you have an elderly parent living in their own home, you can create a macro and assign it to a keypad button. If your family member is in stress, they simply press the keypad button to notify you that something is wrong.
- Create a “Good Night” setting where all touch screens in the house can be set to “Do Not Disturb” when it’s time to go to sleep.
- Monitor your kids’ rooms after they’ve gone to bed to ensure that they’re going to sleep when they should.
- Receive calls from the door station to your Control4 Intercom app.
- Call from the Control4 Intercom app to the touch screen to speak to your kids at home.

> Notes: (1) Broadcasting does not work in a room that’s being monitored if that room is in Monitor Mode. When in Monitor Mode, you will not want the person in that room to be disturbed, for example, a sleeping child. (2) Before you use Intercom with touch screens connected over Wi-Fi, make sure your Wi-Fi router is set to allow multicasting. Some routers do not allow multicasting.

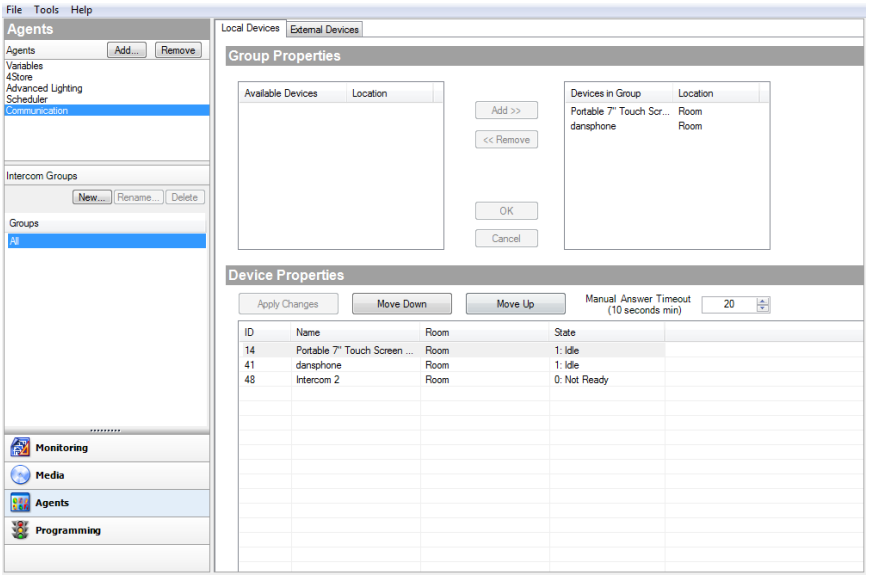
Prerequisites

- Controller
- T3 Touch Screens
- Communication agent (see below)

> Note: Use of the Control4 Intercom app requires an active 4Sight license.

To set up the Communication agent:

1. Click the **Agents** view.
2. In the *Agents* pane, select **Communication**. If the Communication has not been added already, click **Add**, highlight Communication in the list, and click **OK**.



Add new Intercom group

An Intercom group is a set of Intercom-supported touch screens identified by a specific group name. This saves time when you want to send a call to a group of people.

To add an Intercom group:

1. Select **Communication** in the *Agents* pane. Then in the *Intercom Groups* pane, click **New**.
2. Name the Intercom group, and click **Add**. Example: “John’s Group.”
3. Add the devices to the new group (see “Local Devices Tab” below).

Local Devices tab

Group properties:

You can add devices to an existing group of 5" or 7" In-Wall Touch Screens, 7” In-Wall Touch Screen with Camera, 7” Portable Touch Screen with Camera, Door Station, or 7” In-Wall, 10” In-Wall, and 7” Tabletop T3 Touch Screens. This lets the caller from one touch screen send out a call to the group of devices.

To add or remove devices in a group:

- **Add**: Select the device in the Local Devices tab, and then click **Add**. Click **OK**.

  - OR -

- **Remove**: Select the device in the right box of the Local Devices tab, and then click **Remove**. Click **OK**.

Device Properties:

To change device properties for the touch screens in the Intercom Group:

1. Use the Local Devices tab to change the settings for all supported touch screens in the Intercom Group.
   - Manual Answer Timeout (seconds)—Use the up or down arrow keys or enter how much time is allowed to answer an incoming call.

- You can set the intercom device order by selecting the device and clicking the **Move Down** or **Move Up** buttons.

2. Click **Apply Changes** when you're finished.

External Devices tab

The External Devices tab can be used to add external devices that can communicate with the intercom system, for example in an MDU solution. Mobile devices using the Control4 Intercom app also show up as an external device. The Control4 Intercom app is still in a beta state. This functionality requires additional training and hardware not covered in this document.

Using the Custom Buttons agent

Use the Control4 Composer Pro Custom Buttons agent to create up to four custom menus to display on the Navigators (including touch screens, Control4 apps, and on-screen). Custom Buttons Menus can be accessed from the Room Menu in Navigators or added as a favorite to the Room Screen.

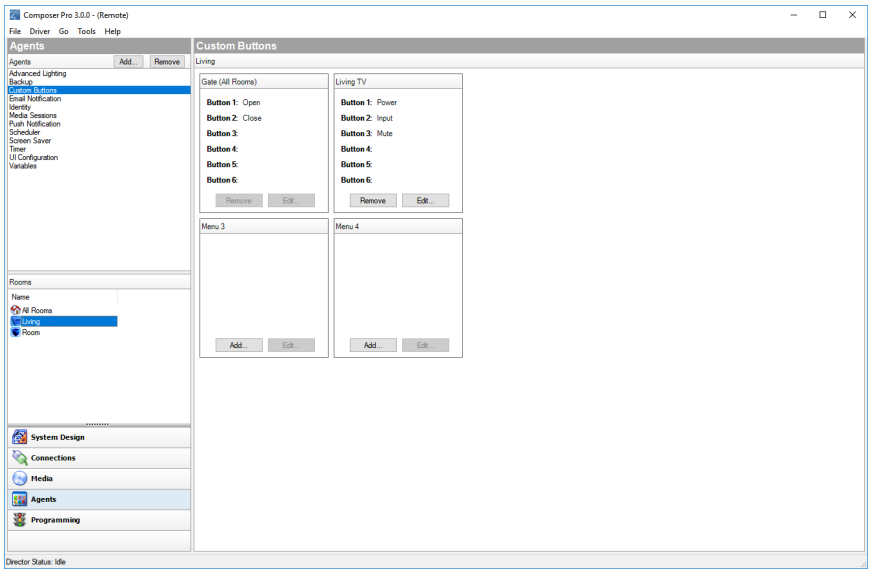
Example: If you have a heated driveway or some other specialty device, you can set up a screen with custom buttons to operate the heated driveway from the Navigators.



To set up the Custom Buttons agent:

1. Start Composer Pro and connect to a Director.

2. Click **Agents**.



3. (First time only) Click **Add** to add the Timer agent to the project.

Custom button menus can be defined for a single room or for all the rooms in the project.

To set up a Custom Buttons menu for a single room:

1. Select the **room** in the *Rooms* pane on the left side of Composer.
2. Click **Add...** and enter the **Menu Name** and **Button 1-6** names as desired.
3. Click **OK**.

To set up a Custom Buttons menu for all rooms:

1. Select **All Rooms** in the *Rooms* pane on the left side of Composer.
2. Click **Add...** and enter the **Menu Name** and **Button 1-6** names as desired.
3. Click **OK**.

Guidelines

- You can access each screen on the Navigators from the Control4 main menu or for a room from four available tabs. Example: The heated driveway screen is accessed from a custom tab on the main menu. You can configure the tab to be viewed system-wide on all screens, or to view in one room only.
- The Navigators allow up to four tabs per room to access custom screens with custom buttons. Each screen can provide up to six custom buttons for a total of 24 custom buttons. The four tabs in each room can be allocated as either room or as global tabs.
- On the Navigators, you can set up a room or global tabs. The example shows the creation of custom tabs that appear in the Front Room and access a custom screen.

> Note: If you want to create a Custom tab to appear globally, check the Global box next to the Screen Name. Because only four screens are available for each room, if a Global button is added and another room already has four screens, the Global button replaces the first screen in that room.

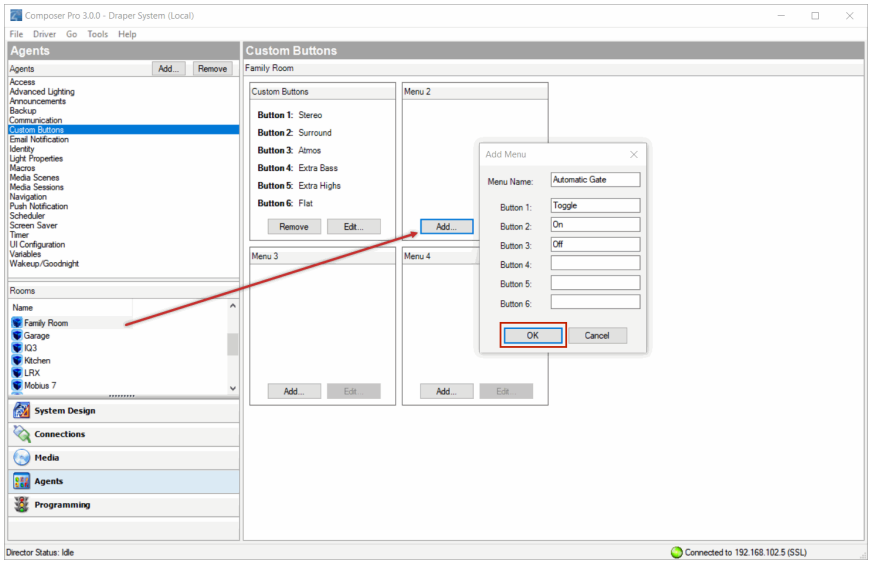
Prerequisites

The following devices are added and identified (with a network address) in the project:

- Controller
- Electronic Gate (In the Control & Audio Video Connections tab, ensure that the Electronic Gate is connected to controller relay Port 4.)

To set up a Custom Buttons agent:

1. Start Composer Pro and connect to a Director.
2. Click **Agents**.
3. (First time only) Click **Add** to add the Custom Buttons agent to the project.
4. When the dialog appears, from the list, select **Custom Buttons**.
5. Click **OK**.
6. Select the **Custom Buttons** agent.
7. From the list that appears in the left pane, select the room for the custom button; for example, select **Family**.



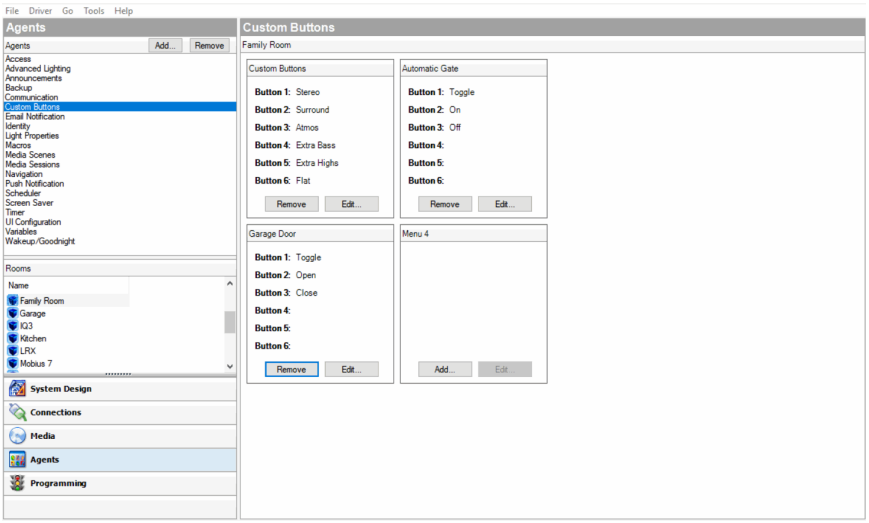
8. When the Custom Buttons interface appears, in the Screen 1 area, click **Add**. Note: In the Navigator, Screen 1 appears in the top left corner; Screen 2 appears in the lower left corner, Screen 3 appears in the top right corner, and Screen 4 appears in the lower right corner.
9. Enter the name of the buttons to appear on the Navigator screen.
10. Enter the relevant information for the device.

    The Screen Name is the name that appears on the access tab to enter the custom screen. The buttons are the names that appear on the custom buttons.

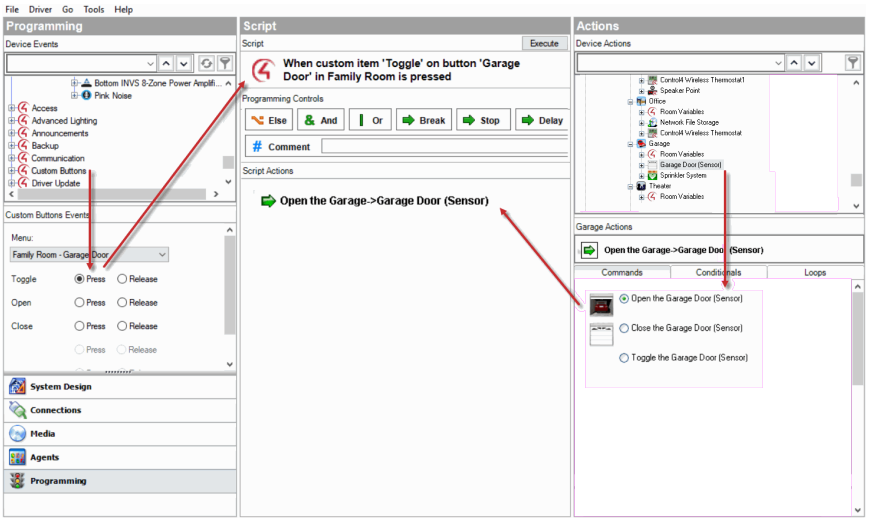
    Example: For the Garage Door, enter the following:

- Screen Name: **Garage Door**
- Button 1: **Toggle**

11. Click **OK**.



12. Click the **Programming** view to program your Custom Buttons.
13. In the Device Events pane, scroll down to the agents and select the **Custom Buttons** agent.
14. In the Custom Buttons Events pane, ensure that **Family-Garage Door** is selected under the Event Screen next to Toggle, and then select the **Press** radio button. When custom button 'Toggle' on screen 'Garage Door' in Family is pressed, it appears at the top of the Script pane.



15. In the Actions pane, select **Garage Door**.
16. From the Command tab, select the **Toggle the Garage Door** radio button. The action command appears in the Actions pane.
17. Drag the **green arrow** to the **Script** pane.
18. Select **File** > **Refresh Navigators**.

Using the Email Notification agent

> IMPORTANT! An active 4Sight Internet Service subscription is required for Email Notification to work. See Composer Pro Getting Started or the Control4 System User Guide.

Use the Control4 Composer Pro Email Notification agent to have an email sent to an email address automatically when specific events occur as defined in programming.

> Example: If you want to know when the basement door opens, you can set up an Email Notification agent to send an email to your email application's Inbox when the Basement door opens.

- The Email Notification is a Control4 service. To use Email Notification agent, remote access is required to facilitate a secure connection between the controller and the Control4 service.
- The Email Notification agent uses templates to enhance usability. You can use a template to define a To, Subject, or Body for use when creating instances of the Email Notification agent. See "Connecting to a Director using Remote Access" in Composer Pro Getting Started.
- Use the Programming view to define the individual instance that triggers an email and completes the definition.

> Example: A security threat to the house notified you of broken windows, doors opening, and motion detected in Away mode. In the template, you define Subject: Security Alert and To: fsmith@myemail.com. In the Programming view, you might define the zone. Examples of other incidents to use E-mail Notification include: Basement Door Opened, Front Gate Opened, Water Sensor detection, Carbon Monoxide Sensor detection, Motion Sensor detection, Sprinklers On/Off, etc.

> Tip: When setting up an E-mail Notification agent, note the frequency that an event can happen; because if it is too frequent, it can slow down the system. For example, if an email is sent when a Motion Sensor detects motion, the frequent email messages could cause sluggishness.

Prerequisites

The following example devices are added and identified (with a network address) in the project:

- Controller
- Door Contact Sensor

To set up an Email Notification:

1. Start Composer Pro and connect to a Director.
2. Click **Agents**.
3. (First time only) In the *Agents* view, click **Add** to add the Email Notification agent to the project.

4. When the dialog appears, select **Email Notification**.
5. Click **OK**.
6. Select **Email Notification**, and click **Add** in the pane that follows. The New Template Name dialog appears.

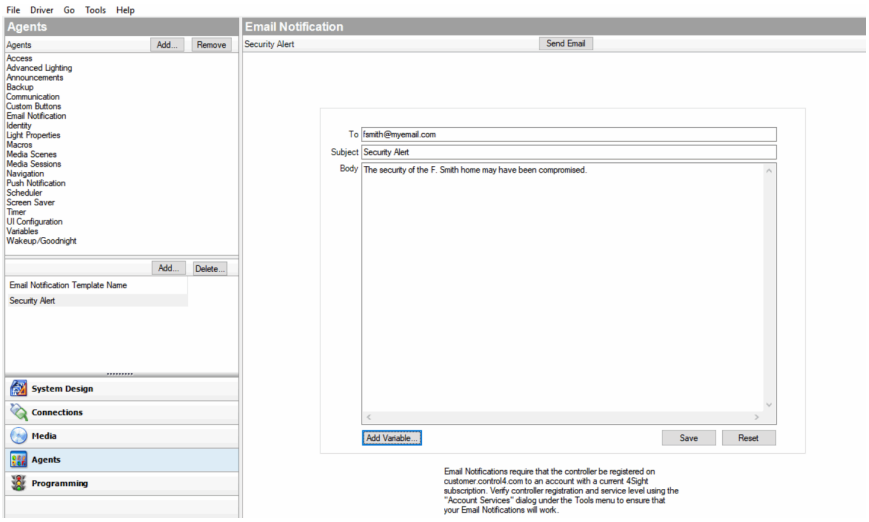
   Tip: Control4 now includes Control4 system and user-defined variables in the templates created using this agent. To use this function, you can create or modify email templates using Composer Pro > Agents > E-Mail Notification, and then use the **Add Variable** option.
7. Enter a name on the dialog that appears, for example, 'Security Alert.'
8. Click **Create**.
9. In Email Notification Template Name, select **Security Alert** for the Composer Pro email screen to appear.
10. Fill out the information for the email you want sent to you when an event occurs.

    Example:

    To: **fsmith@myemail.com**

    Subject: **Security Alert**

    Body: **The security of the Franklin Smith House may have been compromised.**



11. Do the following as needed:

1. Click **Send Email** to test and see if you receive and email to your email address.
2. Click **Add Variable** if you've created a variable agent. Scroll down the list to locate the variable, and then click **OK**.
3. Click **Save** to exit and go to the Programming view to set up the programming.
4. Click **Reset** to clear the To, Subject, and Body of the email to start again.

12. With the Agent template created, you can create one instance of the Security Alert for each security zone (or object). When you've saved the template, click **Programming**.
13. In Programming under Theater, select **Door Contact Sensor**.
14. In Door Contact Sensor Events, select **When Door Contact Sensor opens**.

15. In the Actions pane, scroll down and select **Email Notification**.
16. Make any changes to the email as necessary.
17. Drag the **green arrow** to the **Script** pane.
18. In the File menu, click **Refresh**.
19. Test the Email Notification agent by going to the door and opening it. An email is sent to your Inbox with the Security Alert as a subject.

Using the Light Properties agent

Use the *Agents* and *System Design* views to add and configure dimmable, non-dimmable, and 0-10V lights for Panelized Lighting devices.

Use this agent to make it easy to set up load and wattage information in the Panelized Lighting Properties pages for a project.

To use the Light Properties agent:

1. Start Composer Pro and connect to a Director.
2. Click **Agents**.
3. (First time only) Click **Add** to add the Light Properties agent to the project.
4. Select **Light Properties**, and then click **OK**.

In the Light Properties pane, change the columns for each light in the Panelized Lighting system.

Note: Ensure that the Panelized Lighting module is added and identified to the system. After you do, the name of the device will display in this agent's Light Properties pane. See the Panelized Lighting Quick Start Guide for details.

These options are editable.

- **Name**—The name of the module you identified in the system.
- **Load Number**—Assign a load number for each module in the system.
- **Watts**—Assign the wattage for each module in the system.

Using the Macros agent

Use the *Agents* and Programming views to program this agent. Macros agents are routines that associate programming with event*s*.

Examples: You can create and name a macro to use in several different programming events.

The macro can be called from a particular program in the *Programming Actions* pane or you can create a custom button on your touch screens or on-screen Navigator to call a Macro .

You can create Macros:

- To use in various programmed events
- To use in Custom pages
- To use from custom buttons in the Navigators

Prerequisites

The following devices are added and identified (with a network address) in the project:

- Controller
- Light Switch
- Navigator with a screen (touch screen, Control4 app, TV screen, etc.)
- Any device involved in the triggering event (doorbell contact, keypad, etc.)

To set up the Macros agent:

1. Start Composer Pro and connect to a Director.
2. Click **Agents**.
3. (First time only) Click **Add** to add the Macros agent to the project.
4. Select **Macros**, and then click **OK**.

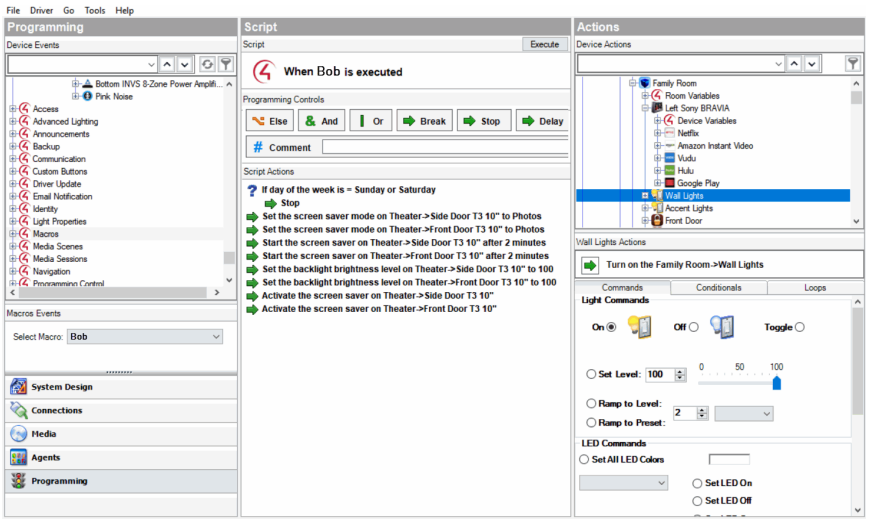
To create a new Macro:

1. Select **Macros** in the Agents pane, and click **New**.
2. Name the new macro, for example, **Bob**, and then click **Create**.

To add commands to the macro's programming script:

In this example script, you will select the **Family Room Switch** which is on, and then turn off everything in the Living Room.

1. Click the **Programming** view.
2. In the *Device Events* pane, scroll down to Macros and select **Bob**. "When Screen Saver On is executed" appears in the Script pane.
3. In the *Device Actions* pane, select **Family Room** and the **Wall Lights**.
4. Under *Light*, select **On**.
5. Drag the green arrow 'Turn on the Family >Wall Lights' to the *Script* pane.
6. Under *Light*, select **Off**.
7. Drag the green arrow 'Turn off the Family > Wall Lights' to the Script pane.



8. You can add the Macros agent to many programs that you create if you want to perform similar tasks, or you can program the agent for a specific device. For example, you can assign this agent to a button on a keypad to run the program when executed.

Note: A unique Macro cannot be edited or copied; only created or deleted. If you want to create a new Macro based on another one, you must create a new one.

Using the Media Scenes agent

Use the Media Scenes agent to allow simpler multi-zone audio control. Media Scenes link source, volume, and room-off commands. With Media Scenes, you can configure one or more rooms in a system to play the same music at the same volume.

> Example: A Media Scene for the entire house can include all the rooms in the Control4 system. Another Media Scene can include only the Master Bedroom and Bath. You can create any number of Media Scenes containing any number of rooms.

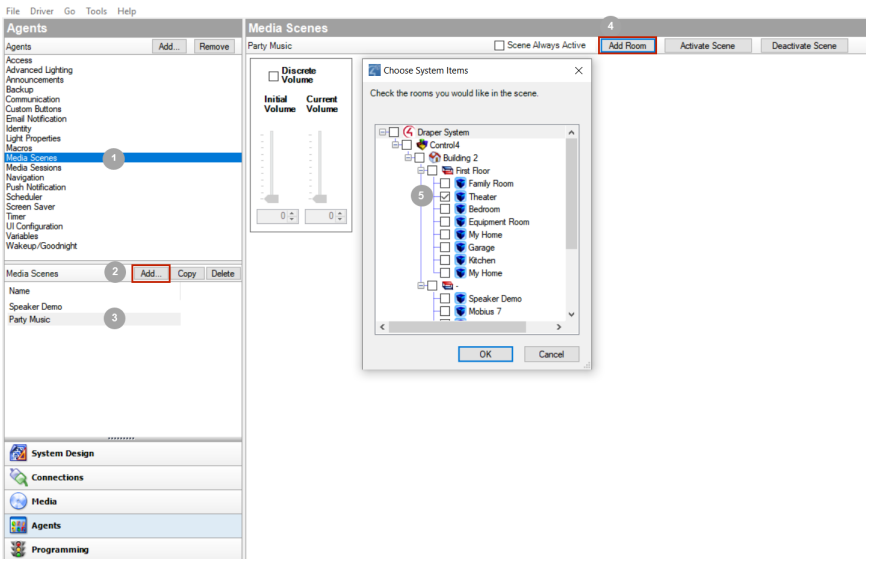
Guidelines

- To successfully activate a Media Scene (with the rooms being controlled simultaneously), activate the Media Scenes agent before starting any music playback.
- Media scenes are persistent; when activated, a Media Scene remains active until deactivated or until the controller is powered down. If a Media Scene is deactivated while music is playing, the music continues to play in the associated rooms, but the rooms are no longer controlled in unison. Therefore, music can be stopped in one room while it continues to play in another room.
- You can set up a Media Scene one time, and activate it when desired. Then play the music.

To create a Media Scenes agent:

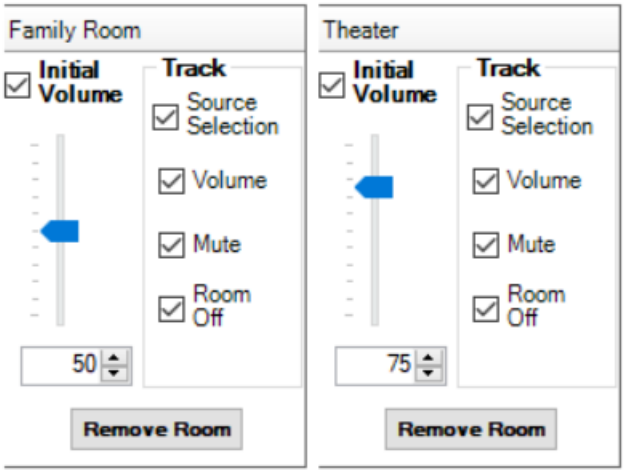
1. Start Composer Pro and connect to a Director.
2. (First time only) In the *Agents* view, click **Add** to add the Media Scenes agent to the project.
3. On the dialog that appears, click **Media Scenes**, and then click **OK**.
4. In the *Agents* pane, select **Media Scenes**, and click **Add**.
5. Enter a name for your new Media Scene. Example: **Party Music**.

6. In the *Agents* pane, select **Party Music**, and then click **Add Room** in the Media Scenes pane.



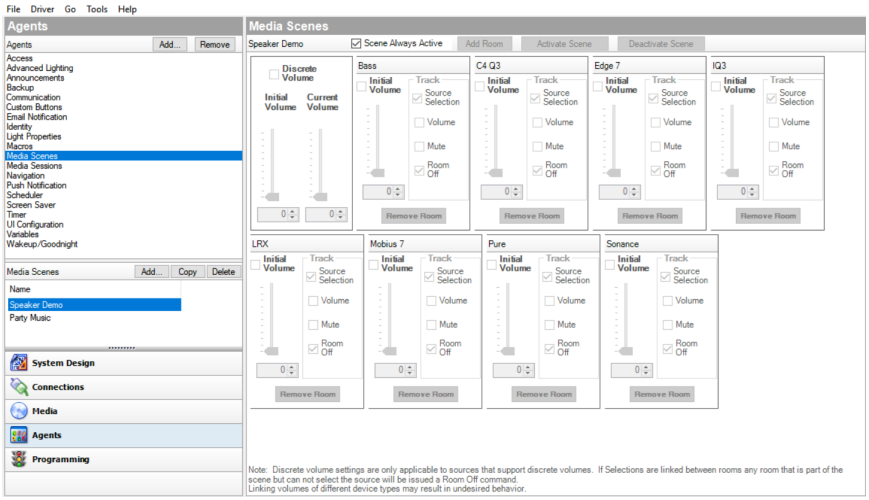
7. In the dialog box is a list of rooms in your system. Check the **rooms** where you want to play your Party Music, and then click **OK**. Example: **Theater** and **Family**.

Tips: To remove a room from a scene, click **Remove Room**. To create another Media Scene, return to Step 1.



Tip: You can add all rooms on a floor by clicking, for example, **Main**. This automatically selects all other rooms in that category. You can also include all rooms in your entire system in the Media Scene by clicking **House**.

The rooms you selected appear in the new Media scene 'Party Music.'

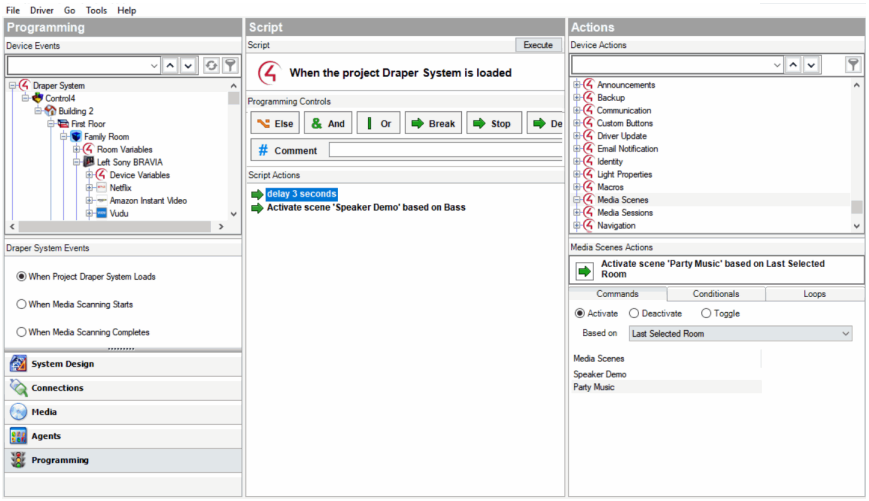


8. To activate the scene, click **Activate Scene** at the top of the screen.
9. To deactivate, click the **Deactivate Scene** button.
10. You can program a button for your Media Scene. Do this by creating a new Custom Button.
1. In the *Agents* view, click **Custom Buttons**, and then below, click a **room**. In the Custom Buttons pane, click **Add**.
2. In the *Add Screen* dialog that appears, enter the name of the Custom Button, and then click **OK**.
   Example: Click **Theater** and call the Screen name **Media Scene**. Name Button 1: **On/Off** and click **OK**.

   The custom button name appears in the pane.
11. Click the Programming View.
12. In the Device Events pane, scroll down and click **Custom Buttons**. In the pane below, Custom Button Events, select the screen you want to program, and then select the **Press** radio button.

Example: Select the screen **Kitchen - Media Scene**, and select the **Press** radio button.

13. In the *Actions* pane, select **Kitchen**.
14. In the *Kitchen Actions* pane under Conditionals, press the **Media Scene Active** button which also selects True.
15. Drag the blue question mark to the **Script** pane.
16. In the *Actions* pane, scroll down and select **Media Scenes**.
17. In the *Media Scenes Actions* pane under Commands, press the **Deactivate** button, and then select **Party Music**.
18. Drag the **green arrow** on top of the blue question mark in the **Script** pane.
19. In the *Actions* pane, scroll up and select **Kitchen**. In the Kitchen Actions pane and in Conditionals, press the **Media Scene Active** button, and then the **False** button.
20. Drag the **blue question** mark to the **Script** pane.
21. In the *Actions* pane, scroll down and select **Media Scenes**. In the Media Scenes Actions pane and in Commands, press the **Activate** button, and then select **Party Music**.
22. Drag the **green arrow** icon on top of the blue question mark in the **Script** pane.



The Script pane now reads, 'When custom button ‘On/Off’ on screen ‘Media Scene’ in Kitchen is pressed...Activate scene ‘Party Music.’'

23. To execute the scene, click **Execute**.

Using the Color agent

The Control4 Color agent enables the creation and editing of color and tunable white lighting presets. Presets allow for quick selection of a specific color (chromaticity) or tunable white (CCT) on bulbs and lighting strips that support color and/or tunable white. Presets only contain information about the color or CCT value. Brightness is not included with the preset definition. Brightness does affect the perceived color. Brightness can be set manually using the user interface and can also be set programatically using Advanced Lighting Scenes, Brightness Presets, and custom programming.

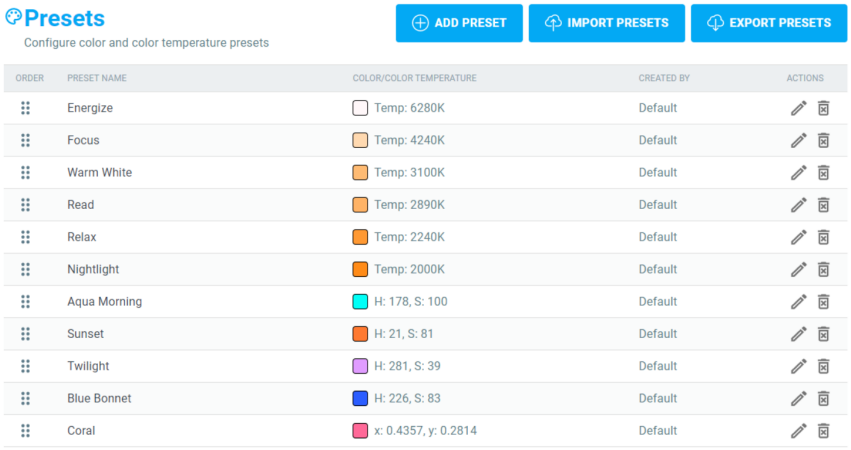
Minimum required OS version: OS 3.3.0

Quick Configuration

The Control4 Color agent is automatically added to any project installed on or updated to OS 3.3.0. You should not attempt to delete this agent. If you do, it will be added back into the project when the controller is restarted.

The Color agent includes a selection of default presets for various color selections and tunable white selections. Users may also create their own presets using the customer application. You may add system-wide presets as well. All presets can be edited and deleted. You can also change the order which will be used to display these preset selections. Note that individual lights may not be able to display all chromacity or CCT levels. The Color agent doesn't attempt to enforce this. But, when the Control4 user interface is used to set the color/temperature for the device, it will only show the available presets. In other words, the available presets will be limited based on the device's defined capabilities.

Presets



There are three categories of presets:

Default—These are the default presets provided on initial installation of the Color agent.

Dealer—These are the presets created by the Control4 Installer using the Color agent.

Customer—These are the presets created by the user through the Control4 application.

Add Preset

Name—Name each Preset. Names must be unique.

Category —The category field is read-only. All presets created by the Installer are in the Dealer category.

Preset Type —Color presets are defined by chromaticity and stored either using xy values or hue & saturation values. Color Temperature presets are defined by a color correlated temperature (CCT) value in Kelvins.

Definition —You may use the color wheel or the entry fields to specify the desired color/temperature.

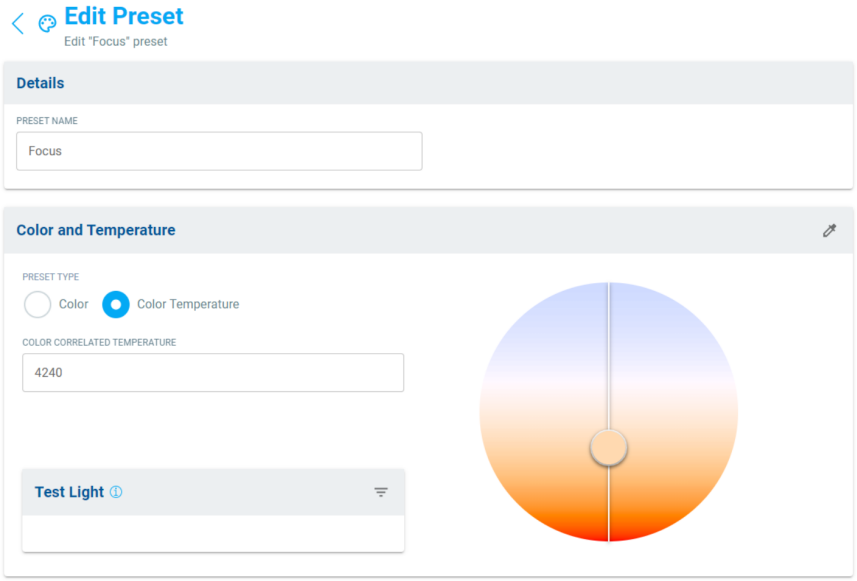
Hue and Saturation —Chromaticity is specified using hue (0-359 degrees) and saturation (1-100%).

xy Chromaticity —Chromaticity is specified using the xy scale. This gives you the broadest selection of colors.

RGB —Color may be specified as an RGB value. The RGB specification combines both chromaticity and brightness. When you provide RGB values, Control4 will convert the chromaticity to xy.

Test Light —You may select one or more lights. The selected light(s) will follow the color / temperature selections so that you can visually verify the color while you are creating or editing the preset.

Edit Preset



Preset Order

You can easily change the order of the presets by dragging a preset higher or lower on the preset list.

Import/Export Presets

Exporting the preset list allows you to save the preset definition to an xml data file. This can be very helpful for restoring the presets to a known good configuration. As with other areas of Composer Pro, the Color agent doesn't have an 'Undo' function. If you make changes, and aren't happy with them, you will save a lot of time by restoring a known good configuration. If a preset with the same name is imported, it will overwrite the preset in the project. Exporting and Importing presets can also be helpful if you want to provide a standard base set of presets in all of your customer installations.

Advanced Properties

Log Settings

Log Level—This property allows to filter which message types display in the Lua Output window. Options 0 —5 correspond to Fatal through Trace levels, increasing in level of verbosity.

Log Mode—Activates logging of diagnostic information. The log level is set in the above property. Options include Off, Print (to the window), Log (to the Director Log), and Print and Log (both). Default is Off.

General Information

Device ID—Displays agent device ID.

Agent Version—Displays current agent/driver version.

OS Version Status—Displays whether current OS version fulfills min requirements for Color agent.

Actions

This section lists and defines the Actions that the agent provides and are available through ComposerPro. These Actions are primarily for advanced troubleshooting. You should not need to use them for normal configuration.

List Presets—Prints all defined color presets in table format to the Lua output window.

Add Preset HS—Adds color preset in the HS color format. Parameters are:

NAME —Preset name (mandatory field)

CATEGORY —Preset category differentiated by who created the preset.

HUE —Hue component of HSV/HSB/HSL color space (range [0.0, 360.0])

SATURATION —Saturation component of HSV/HSB/HSL color space (range [0.0, 100.0])

Add Preset XY—Adds color preset in the xy color format. Parameters are:

NAME —Preset name (mandatory field)

CATEGORY —Preset category differentiated by who created the preset.

COLOR_X —x component of xyY color space (range [0.0, 1.0])

COLOR_Y —y component of xyY color space (range [0.0, 1.0])

Add Preset RGB—Adds color preset in the RGB color format. Parameters are:

NAME —Preset name (mandatory field)

CATEGORY —Preset category differentiated by who created the preset.

RGB —RGB color information.

Add Preset CCT—Adds color correlated temperature preset. Parameters are:

NAME —Preset name (mandatory field)

CATEGORY —Preset category differentiated by who created the preset.

COLOR_TEMPERATURE —Color temperature in Kelvins (range [1000.0, 20000.0])

Edit Preset Name—Changes name of the preset with the given ID. Parameters are:

ID —ID of the preset that is being modified.

NAME —New preset name.

CATEGORY —Category from which the preset is being edited.

Edit Preset HS—Changes HS color information of the preset with the given ID. Parameters are:

ID —ID of the preset that is being modified.

HUE —Hue component of HSV/HSB/HSL color space (range [0.0, 360.0]).

SATURATION —Saturation component of HSV/HSB/HSL color space (range [0.0, 100.0]).

CATEGORY —Category from which the preset is being edited.

Edit Preset XY—Changes xyY color information of the preset with the given ID. Parameters are:

ID —ID of the preset that is being modified.

COLOR_X —x component of xyY color space (range [0.0, 1.0])

COLOR_Y —y component of xyY color space (range [0.0, 1.0])

CATEGORY —Category from which the preset is being edited.

Edit Preset HS—Changes RGB color information of the preset with the given ID. Parameters are:

ID —ID of the preset that is being modified.

RGB —RGB color information.

CATEGORY —Category from which the preset is being edited.

Edit Preset CCT—Changes color correlated temperature of the preset with the given ID. Parameters are:

ID —ID of the preset that is being modified.

COLOR_TEMPERATURE —Color temperature in Kelvins (range [1000.0, 20000.0])

CATEGORY —Category from which the preset is being edited.

Delete Preset—Deletes preset with the given ID. Parameters are:

ID —ID of the preset that is being deleted.

CATEGORY —Category from which the preset is being deleted.

Reorder Presets by IDs—Changes the order in which presets are displayed. Provided argument is a comma-separated list of IDs which represents their new order. If the list is partial, only mentioned presets will change their positions, while the other presets will retain their current positions.

IDS —Comma-separated list of preset IDs that represent their new order relative to each other.

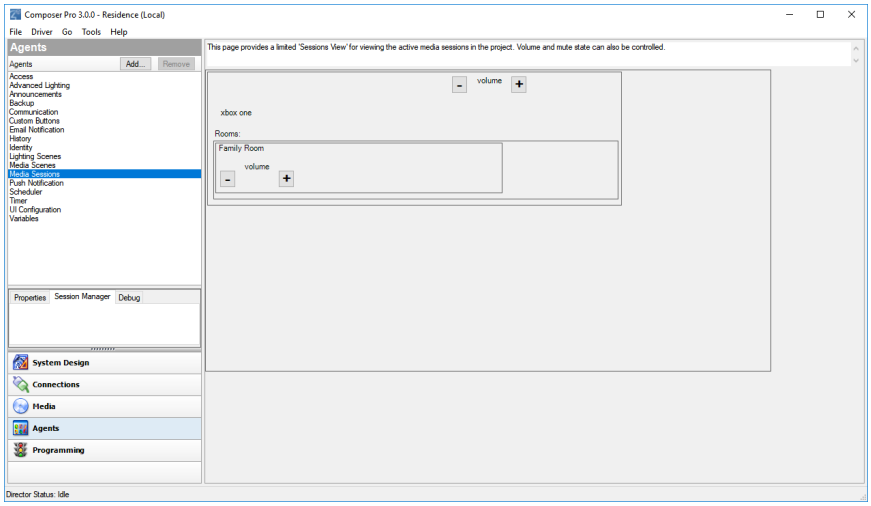
Reorder Presets by Names—Changes the order in which presets are displayed. Provided argument is a comma-separated list of preset names which represents their new order. If the list is partial, only mentioned presets will change their positions, while the other presets will retain their current positions.

NAMES —Comma-separated list of preset names that represent their new order relative to each other.

Using the Media Sessions agent

Use the Media Sessions agent to view and have limited control over active audio sessions in the project. Media Sessions agent cannot be used to provide any programming assistance, but can be use to control volume and mute settings for active zones.

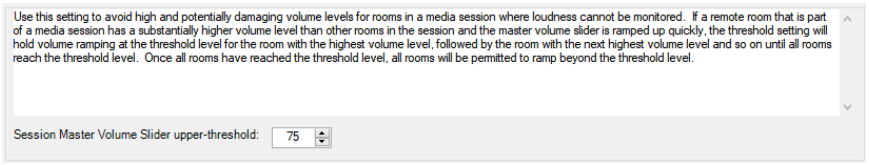
> Example: A media session was creating using the Control4 app. You can use the Media Session agent to control volume and mute in any of the rooms in the media session.



Configuring the Master Volume Slider

The Media Sessions agent can help avoid potentially damaging high volume levels when using the Master Volume Slider in the Sessions page of the user interfaces by configuring an upper threshold for the Master Volume Slider. Volume won't ramp above the upper threshold until all rooms are at the threshold to avoid a single room ramping above the level when the Master Volume Slider in a user interface.

In the **Properties** tab of the *Media Sessions* agent, use the arrows or enter a volume for the Session Master Volume Slider upper threshold.



Using the MultiDisplay Manager agent

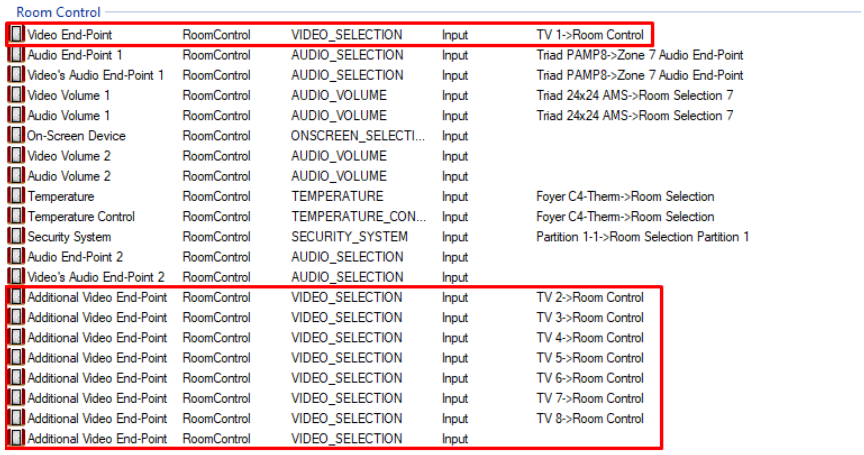
Use the MultiDisplay Manager agent to control multiple displays in a commercial, retail, hospitality, or residential project. You can control multiple displays and audio sources from a single interface, a Control4 touchscreen or Control4 app on Android or iPad.

To set up a video wall to be controlled by the MultiDisplay Manager agent:

1. Add your televisions (displays) to the desired room in the project.

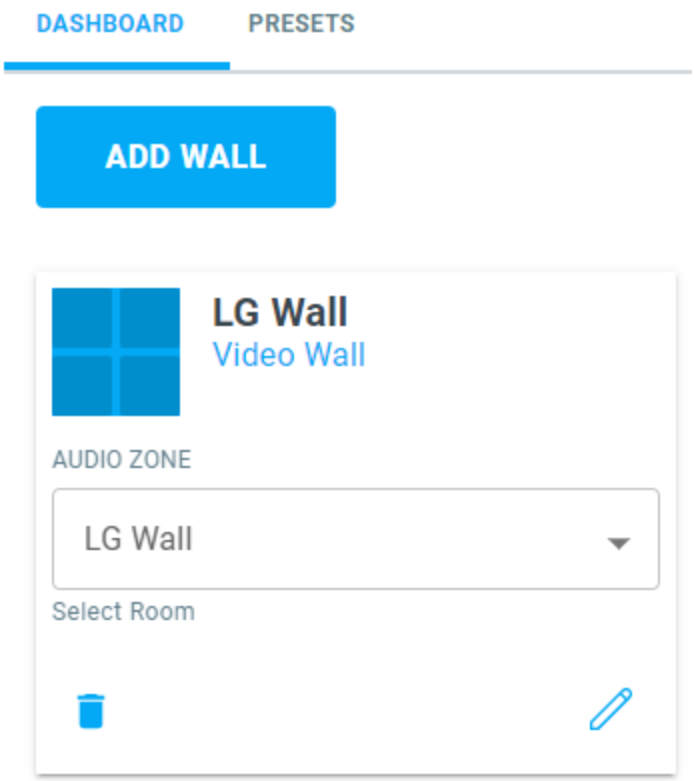


2. On the **Connections** tab after selecting the room where the TVs reside, make sure your video and audio bindings are done. You must have one of the TVs assigned as a **Video Endpoint**. The MultiDisplay Manager is setup by using the Video Endpoint and Additional Video Endpoint bindings. Connect your first TV to the **Video Endpoint** and your other TVs using the **Additional Video Endpoints**. The Additional Video Endpoint only shows up one at a time. As soon as the as you bind the first Additional Video Endpoint, the next one will appear. Due to a new one appearing, you will always have one unbound Additional Video Endpoint. Once the bindings are made you are ready to create a MultiDisplay Manager. If you do not have all your video and audio end points setup and configured there is no point moving on to the video wall agent until you do because these will be required during the setup.

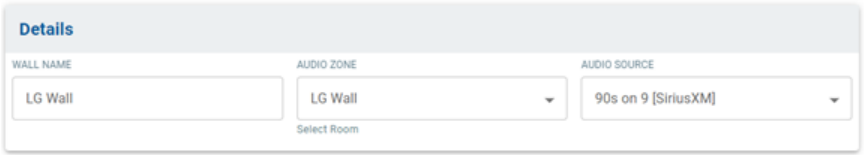


3. Add the MultiDisplay Manager agent to the project within Composer. Go to **Agents** > **Add** and select the **MultiDisplay Manager** agent.

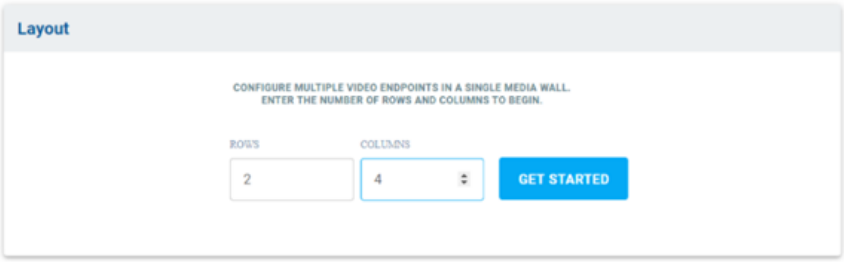
4. After theagent has been added, click on **Add Wall** and select the Audio Zone (room) where the video wall is to reside.



5. After the Audio Zone (room where the MultiDisplay Manager resides) has been selected, click on the button to finish the setup. Within the details of the configuration, you will need to provide a Wall Name, select an Audio Zone, and select a default Audio Source (optional).

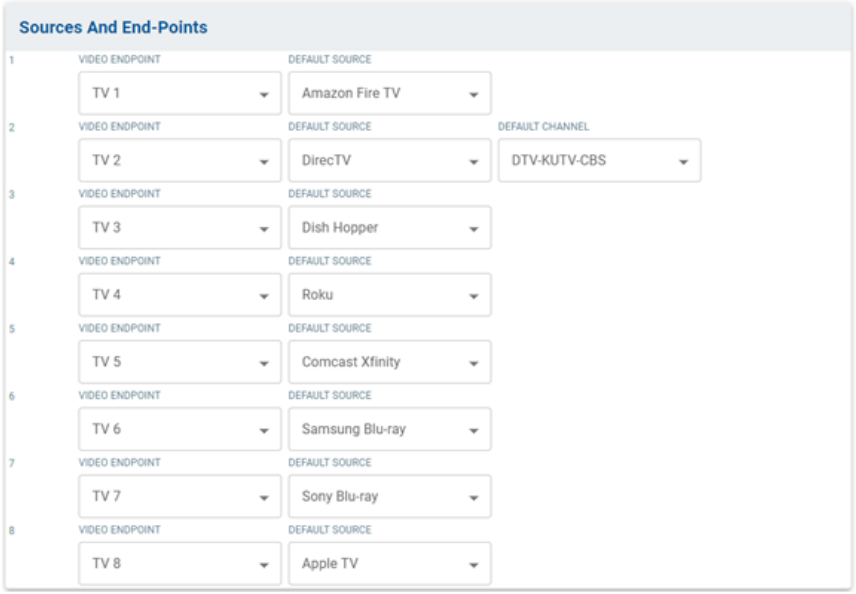


6. Within the second section of the MultiDisplay Manager, you will need to choose the number of columns and rows for your video wall layout. The max size a video wall can be is 3 rows by 6 columns due to the size limit on the navigators. Once done press the **Get Started** button.

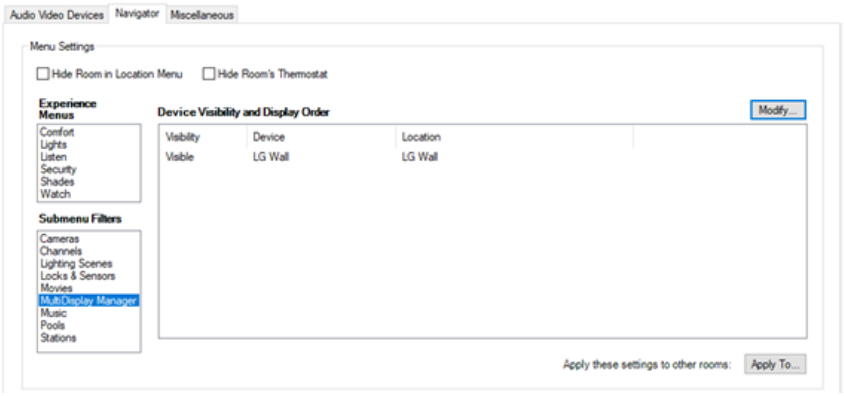


> **Note**: When you press get started you will see the TVs in a layout. The up, down, left, right buttons are currently not functional and will be coming in a future release of the agent. These are not needed for testing of the MultiDisplay Manager and just allow for slight visual adjustments of the TVs on the screen.

7. After saving the layout section, the Sources and End-Points section will be populated with drop down sections for selecting video endpoints and their default sources. Set your **Video Endpoint**, **Default Source** and if desired, the **Default Channel** for each television. Press **Save** to retain the configuration.



8. After your wall is configured you will need to make sure that it is visible. Go to the room level where this should be visible. Make sure you are on the **System Design** tab. On the **Properties** page go to the **Navigator** tab and select **MultiDisplay Manager** in the Submenu Filters section. If they are hidden, click on the modify button, select the wall you want to show and press the Show button to make them visible.



You should now have a MultiDisplay Manager icon within the Watch section on your touch screen. You can favorite that to the main screen if desired by doing a long press on the icon.

> Note: The MultiDisplay Manager only works on tablets and touch screens. It will not work on mobile phones or remotes due to the amount of space needed to show everything on the screen.

Using the Scheduler agent

Use the Agents and Programming views to program this agent. The Scheduler agent lets you schedule time on the Control4 system to trigger specific events to occur. You can program a specific one-time event or multiple events to re-occur daily, weekly, monthly, yearly, etc.

> Example: Schedule an event to play dad's favorite song at 7:30 AM on his birthday.

Prerequisites

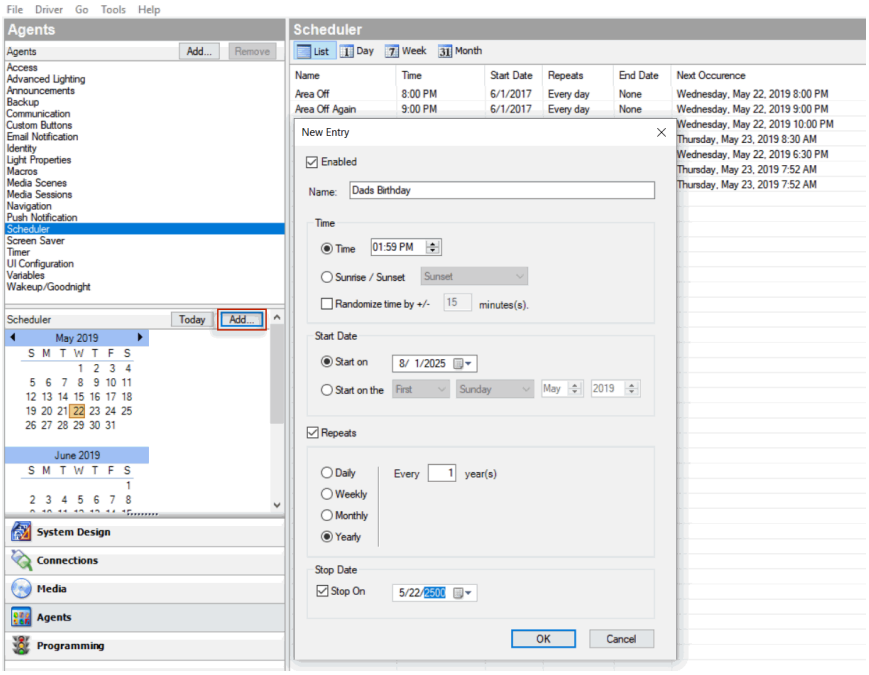
The following devices are added and identified (with a network address) in the project:

- Controller
- Keypad

To set up the Scheduler agent:

1. Start Composer Pro and connect to a Director.
2. Click **Agents**.
3. (First time only) In the *Agents* pane, click **Add** to add the Scheduler agent to the project.
4. Select **Scheduler** in the Agents list, and click **OK**.

5. In the *Agents* pane, select **Scheduler**. The Scheduler panes appear.



6. In the *Scheduler* pane, click **Add**.
7. In the *New Event* dialog, enter the relevant information for this Scheduler instance:

1. In Name: type **Dads Birthday**.
2. In Time, add the following:
   - Select the **Time** radio button.
   - Highlight the hour: **07**, minutes: **30**, and **AM**. Use the drop-down menu to select each time separately, or
   - Select **Sunrise/Sunset**, and select **Sunrise** from the drop-down menu.
3. In Randomize time by +/-, keep the default of 15 minutes. This executes the Scheduler either 15 minutes before or 15 minutes after the actual time you assigned. This is useful when you go on vacation and you want your lights to go on at different times so outsiders think someone is home.
4. In Start Date, select one of the following:
   - Select the **Start** on radio button. Use the drop-down menu and select today's date.
   - Select the **Start** on the radio button to select an exact day, month, and year. Use the drop-down menus to make your selections.
5. Select **Repeats**.
   - Select **Yearly**.

Example: You want dad's favorite song to play at 7:30 AM. This dialog lets you schedule one-time events and recurring events.

- Select **Stop on**, and use the drop-down menu to select a month and year to stop this agent.

6. Click **OK**. The event is now added to the list of events.
7. To delete an event, select the event in the list, and click **Delete**.
8. Click **Programming**.
9. In the *Device Events* pane, select the **Scheduler** object at the bottom of the list.
10. In *Scheduler Events*, click **Dads Birthday** event. The Script pane shows Dads Birthday event.
11. Select the device actions to initiate in the *Actions* panes.
12. Drag the actions to the *Script* pane. These scripted actions execute when the Dad's Birthday event executes.
13. You can use the Scheduler agent in programming also to add conditionals or loops to your scripts.
14. In the project tree, select **3 Button Keypad**.
1. In the Actions pane, scroll down and select the **Scheduler** agent.
2. Click the **Conditionals** tab, select **Time**, and **Within 5 minute(s) Before Sunset**.
3. Drag the **blue question** mark to the Script pane.
4. In the project tree, select the light.
5. In the **Commands** tab, select **turn the room on**, and drag the **green arrow** on top of the **blue question** mark in the Script pane.

Results: When the top button on the 3-Button Keypad is pressed, if it is within five minutes before sunrise, the light comes on. The Scheduler agent lets you define one-time events and recurring events.

Using the Screen Saver agent

Use the Agents view to set up the Screen Saver agent.

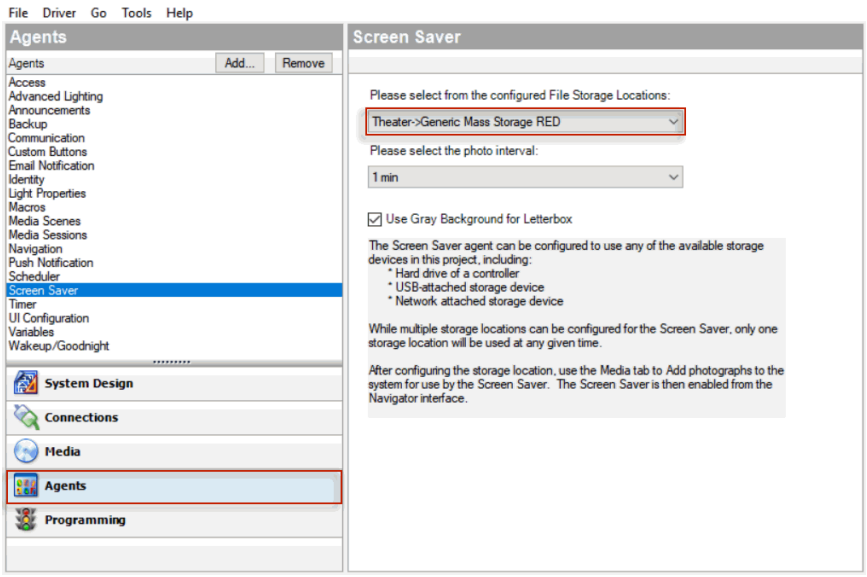
Prerequisites

Ensure that the devices you will use to set up a screen saver and store your photos (for example, a network-attached storage device) are attached to the Control4 system are attached to the primary controller. If you use a USB device, ensure that it is formatted to FAT 32.

To set up the Screen Saver agent:

1. Start Composer Pro and connect to a Director.
2. Click **Agents**.
3. (First time only) Click **Add** to add the Screen Saver agent to the project.
4. Select **Screen Saver**, and then click **OK**. The next time you want to create a Screen Saver, click the **Screen Saver** item in the Agents pane, and then click **New**.

5. From the drop-down menu, select the **File Storage Location**.



6. Click the **Media** view.
7. Click **Screen Saver** in the Media pane.
8. Click **Add** to scan and add new photos to the Screen Saver pane from the device you selected in the Network Storage Location box.
9. To set up a custom screen saver on the Navigators, see also:
   - "Setting up the photo screen saver"
   - "Setting up a custom screen saver"
   - Control4 System User Guide

Using the Timer agent

Use the *Agents* and Programming views to program this agent. The Timer agent lets you start, stop, or repeat a timer based on a given event and action.

> Example: A Motion Sensor turns on a light when it detects motion; use a timer to turn off the light after 15 minutes. Alternatively, you can set a timer to repeat an action whenever the timer expires, such as a Bathroom fan that restarts each time the Bathroom light turns on.

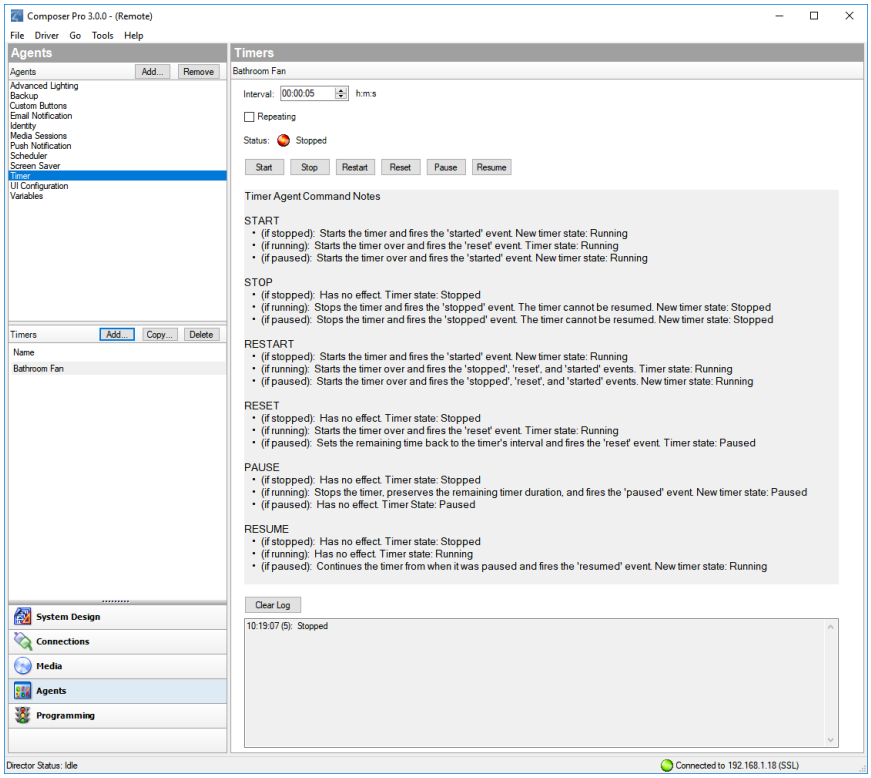
Prerequisites

The following devices are added and identified (with a network address) in the project:

- Controller
- Any device involved in the triggering event (for example, a Motion Sensor)

To set up the Timer agent:

1. Start Composer Pro and connect to a Director.
2. Click **Agents**.



3. (First time only) Click **Add** to add the Timer agent to the project.
4. Select **Timer**, and then click **New**.
5. Type the name of the new timer (for example, Bathroom Fan), and click **Create**.
6. In Interval, use the drop-down menu to set the timer **in seconds**, **minutes**, or **hours** (hh:mm:ss), and click **OK**.
7. Click **Start** to start the timer.
8. Click **Programming**.
9. Select the **Timer Action** in the Actions pane, and ensure the new timer options display in the Commands tab (Start, Stop, Reset, and Change).
10. Start, Stop, Restart, Reset, Resume, or Change the timer as needed.

    The following table outlines how the timer behaves depending on the state of the timer when a command

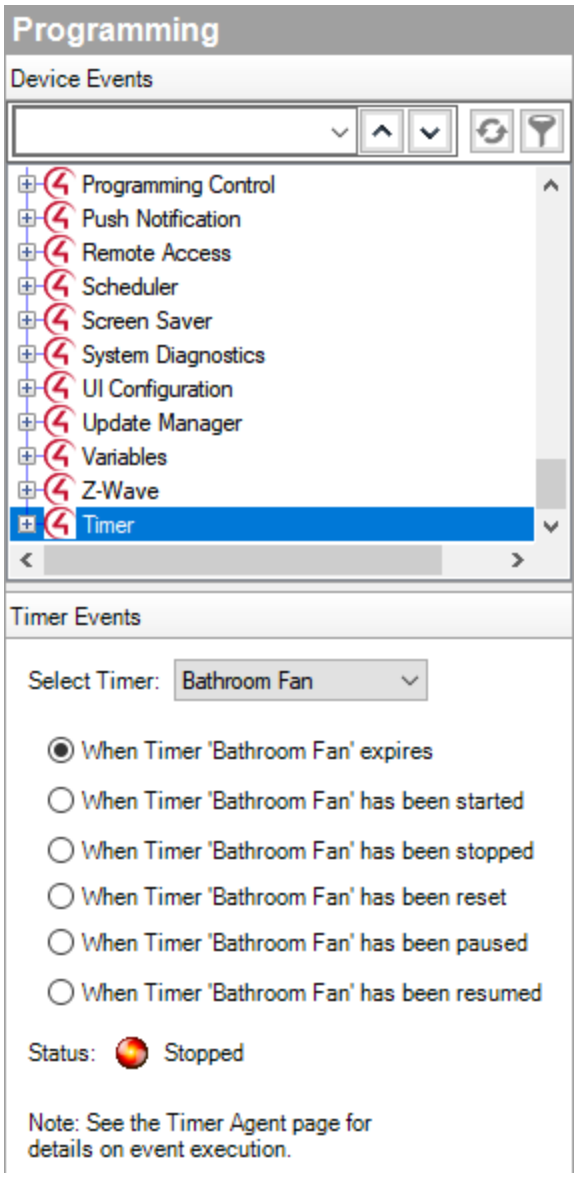
is executed.

Command executed is...	Timer is...	Then event(s) triggered	Effect on Timer
Start	Running	Reset	Restarts timer
	Stopped	Start	Starts timer
	Paused	Start	Restarts timer
Stop	Running	Stop	Stops timer
	Stopped	none	none
	Paused	Stop	Stops timer
Restart	Running	Stop, Reset, Start	Restarts timer
	Stopped	Reset, Start	Restarts timer
	Paused	Stop, Reset, Start	Restarts timer
Reset	Running	Reset	Restarts timer
	Stopped	Reset, Start	Restarts timer
	Paused	Reset	Reset timer value
Pause	Running	Puase	Pauses timer
	Not running	none	none
	Paused	none	none
Resume	Running	none	none
	Stopped	none	none
	Paused	Resume	Resumes timer

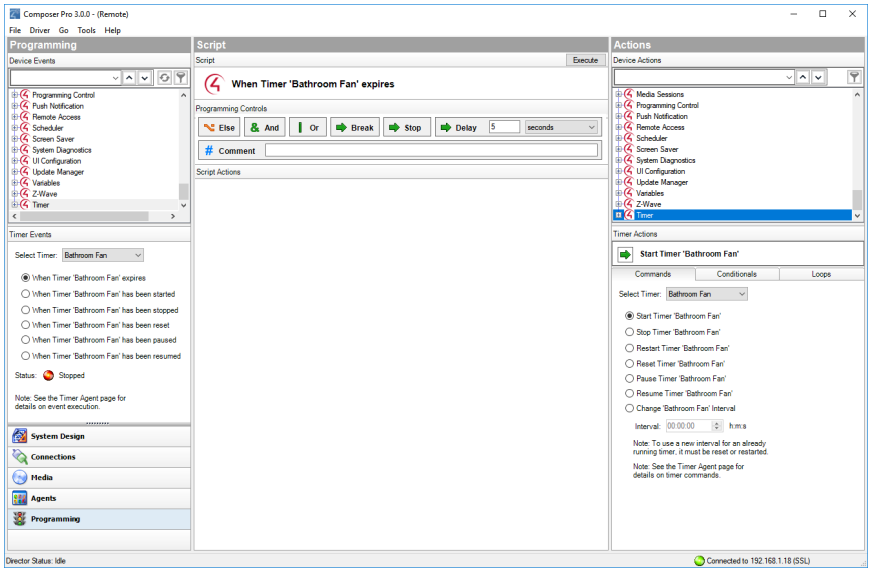
11. Program to connect the timer to an event and action, and choose to **Start**, **Restart**, or **Stop** the timer.

    See the example programming screens that follow. Notice how the timer is first used as an action, and then as an event.

    Event screen:



    Action screen:

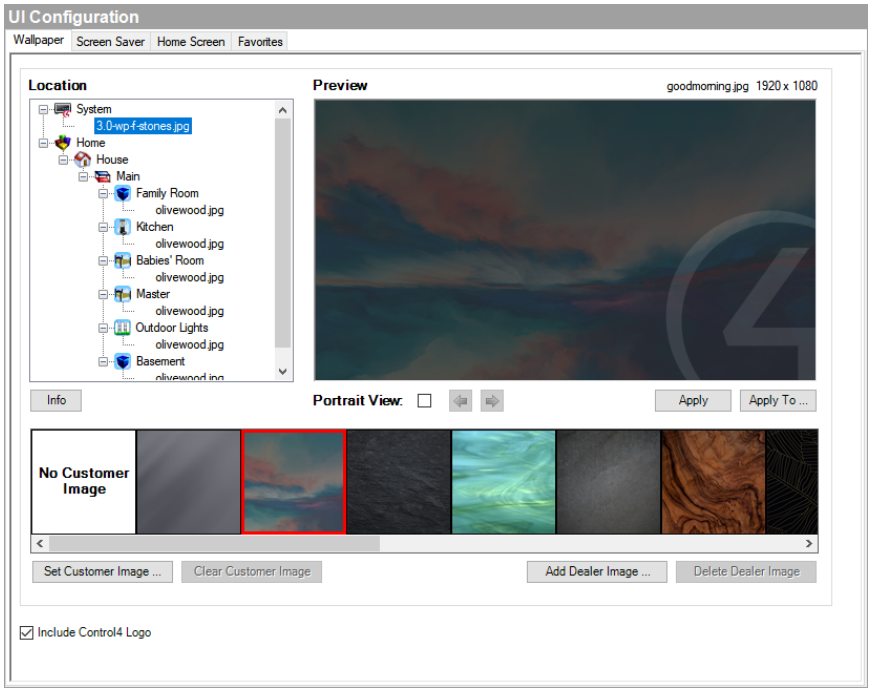


Using the UI Configuration agent

Use the UI Configuration agent to manage wallpaper settings and upload wallpapers, to manage screen saver settings for T3 touch screens and EA On-Screen Navigators, to configure the return to home setting for T3 touch screens and EA On-Screen Navigators, and to add favorites for all navigators in the project.

To configure wallpaper with the UI Configuration agent:

1. In the *Agents* view, select the **UI Configuration** agent, then click on the **Wallpaper** tab.
2. To configure the wallpaper in a single room, select the desired room in the *Location* pane.



3. Select from the default images listed, or click **Add Dealer Image** to add a custom image. Wallpaper images should be JPG files in a 16:9 format with a resolution of 1920 pixels wide by 1080 pixels high for best results. Images with different resolutions may be scaled or trimmed to fit and may produce undesirable results. Up to 10 dealer images can be added and configured to any rom.
4. Click **Apply** to set the wallpaper to the room or click **Apply To ...** to select the rooms to be configured with the wallpaper.

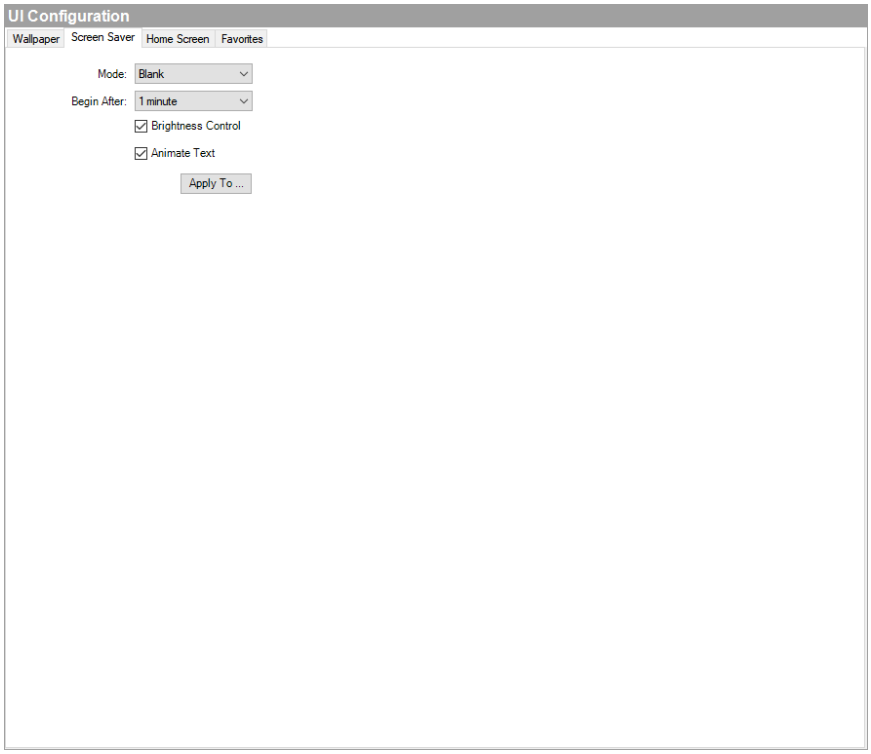
The homeowner can also add a custom image (up to one for each room) using the Control4 app. For information on how to add images with the Control4 app, see the *Control4 System User Guide* (ctrl4.co/userguide). After a custom wallpaper image has been configured, you can use the UI Configuration agent to configure rooms to use the image.

1. To configure the custom wallpaper in a single room, select the desired room in the *Location* pane. Select the image from the images listed and click **Apply** to set the wallpaper to the room or click **Apply To ...** to select the rooms to be configured with the wallpaper.
2. To clear the custom wallpaper image, select the custom image and click **Clear Customer Image**.

You can also choose to include or not include the Control4 logo on any wallpaper images. Click the box next to **Include Control4 Logo** to include the Control4 logo, and then continue the process of configuring a wallpaper image.

To configure screen saver settings with the UI Configuration agent:

1. In the *Agents* view, select the **UI Configuration** agent, then click on the **Screen Saver** tab.



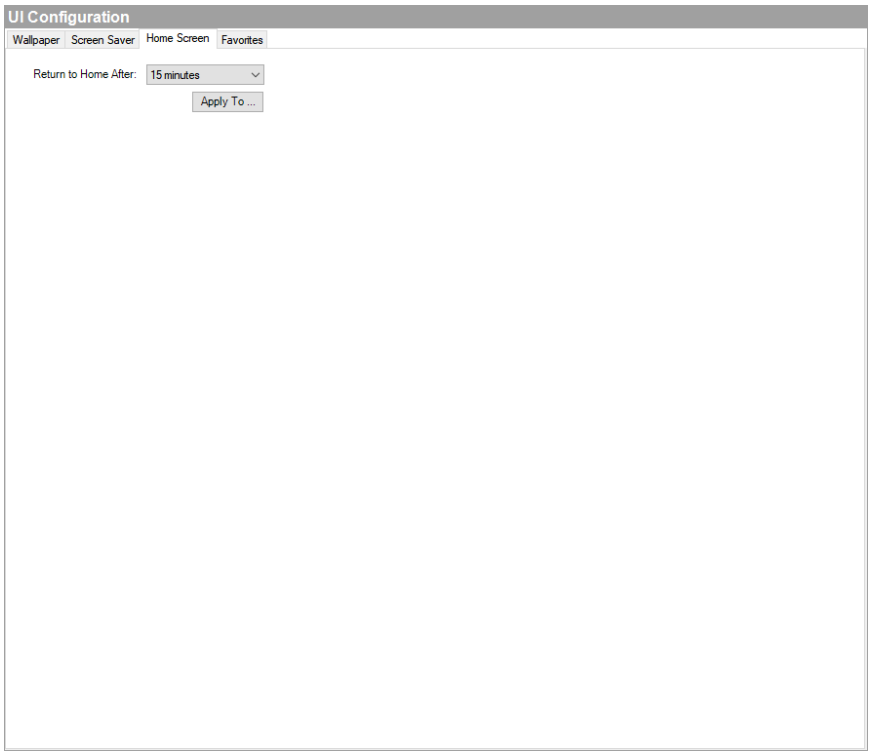
2. Choose the screen saver mode. Available options include:
   - None
   - Blank

- Date and Time
- Current Media
- Photos
- Custom

3. Depending on your chosen screen saver mode, configure any additional options that appear.
4. Configure the *Begin After* option. The value selected is the period of time the touch screen will wait after detecting inactivity until it turns on the screen saver.
5. Check the box next to *Brightness Control* to add a brightness control icon to the screen saver.
6. Check the box next to *Animate Text* to apply a small movement to the text to avoid screen burn-in.
7. Click **Apply To ...** to select the navigators to be configured with the screen saver settings.

To configure return to home settings with the UI Configuration agent:

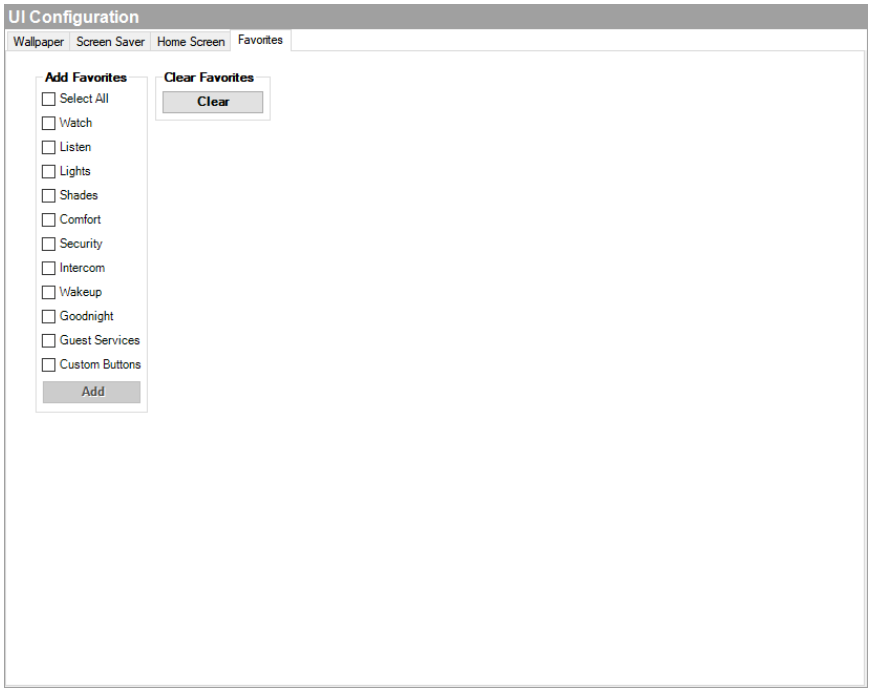
1. In the *Agents* view, select the **UI Configuration** agent, then click on the **Screen Saver** tab.



2. Configure when the Navigator will return to the home screen by choosing the time in the *Return to Home After:* menu.

To configure favorites with the UI Configuration agent:

1. In the *Agents* view, select the **UI Configuration** agent, then click on the **Favorites** tab.



2. To add favorites to all Room Screen, click the box next to the favorites you want to add in the *Add Favorites* pane.
3. Click **Add**, and then click **OK** to add the selected favorites to all applicable Room Screens.

To clear all configured favorites and reset to the default favorites, click **Clear Favorites**.

Using the Variables agent

Use the Agents view to set up the Variables agent. Ensure that the devices you want to use for variables are added and identified to the system.

These sections provide information about how to create the type of variable that you want to use in programming.

- "Example: Using room variables"
- "Example: Using a custom number variable in an agent"
- "Example: Using a custom string variable in an agent"
- "Example: Using custom Boolean variables in an agent"

Using the Wake/Sleep agent

Use the *Agents* view to program this agent. The Wake/Sleep agent lets you set wake times, sleep timers, lighting, music, and so on.

> Note: Wake times set in Composer Pro synchronize with the user interfaces. Likewise, wake times changed on the interfaces will synchronize with Composer.

> Example: At a user-specified time, start playing music in the Master, open the blinds, and ramp the light on over two minutes.

Prerequisites

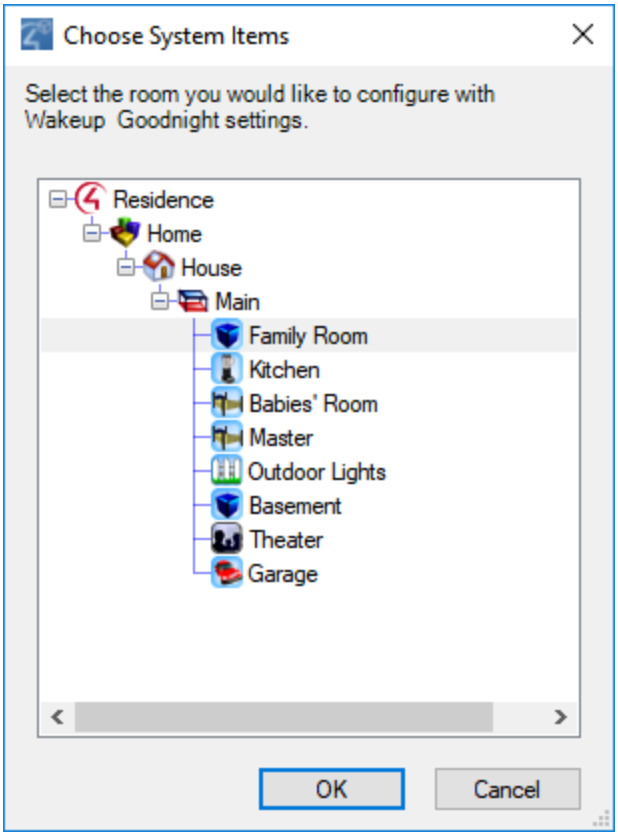
The following devices are added and identified (with a network address) in the project:

- Controller
- Digital Audio (ensure that you can play music in the project)
- Bedroom Dimmer
- Blinds

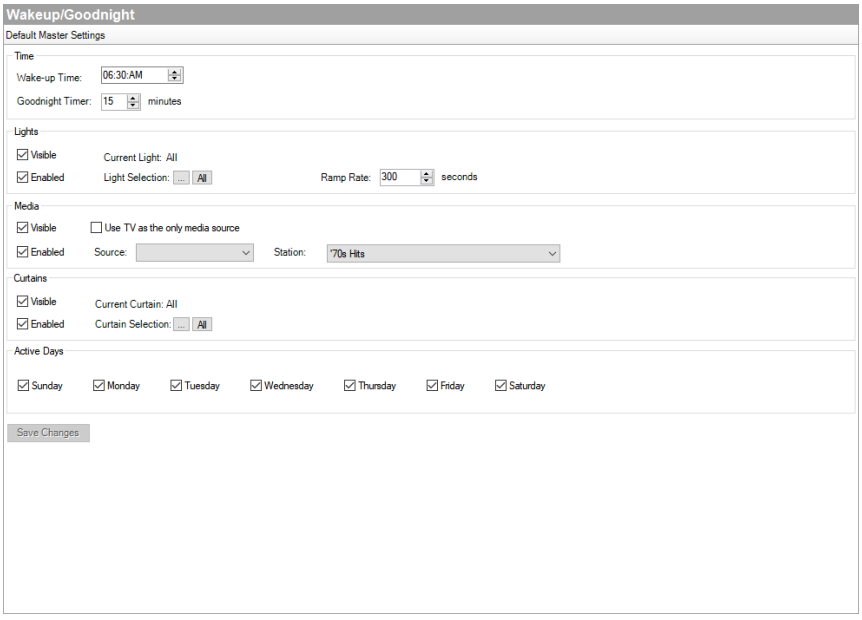
To configure the Wake/Sleep agent:

1. Start Composer Pro and connect to a Director.
2. Click **Connections**.
3. Make sure the connections are correct.
4. Click **Agents**.
5. (First time only) Click **Add...** to add the agent to the project.
6. Select **Wake/Sleep**, and then click **OK**.
7. In the Agents pane, select **Wake/Sleep**. The Wake/Sleep interface panes appear.

8. In the *Wake/Sleep Rooms* pane, click **Add...**.



9. Select the room to enable the Wake/Sleep scene in and click **OK**.
10. Configure the Wake/Sleep scene for the room:



- **Time**—Select the default Wake time by selecting the time in the *Wake Time* field. Select the default Sleep timer length by selecting it in the *Sleep Timer* field. These times can be adjusted by the user in the Wake and Sleep sections on a T3 touch screen or the Control4 app.
- **Lights**—Select if Lights are visible in the Wake and Sleep sections on a T3 touch screen or the Control4 app by selecting **Visible**. Select which lights to control with the Wake and Sleep scenes by clicking on **Light Selection** or click **All**. Configure how fast lights turn on with the Wake scene by entering the desired rate into the **Ramp Rate** field. Enable lights in the current Wake and Sleep scenes for the room by selecting **Enabled**.
- **Media**—Select if Media is visible in the Wake and Sleep sections on a T3 touch screen or the Control4 app by selecting **Visible**. Select the default Media Source by clicking on **Source** (example: Pandora) and select the **Station** or select **Use TV as the only media source** and click on **Channel** to select a TV channel. Enable media in the current Wake and Sleep scenes for the room by selecting **Enabled**.
- **Curtains**—Select if curtains are visible in the Wake and Sleep sections on a T3 touch screen or the Control4 app by selecting **Visible**. Select which curtains to control with the Wake and Sleep scenes by clicking on **Curtain Selection** or click **All**. Enable curtains in the current Wake and Sleep scenes for the room by selecting **Enabled**.
- **Active Days**—Select the default days for the Wake scene to be active.

11. Click **Save Changes** to sync the changes to the Wake and Sleep scenes for the room:

> Note: Users can schedule the wake times for the Wake scenes, enable or disable items from the Wake scenes, and choose from the lights or curtains in the Wake scene from their T3 touch screens or Control4 app. See the product documentation or the Control4 System User Guide for more information about how to schedule the wake time.

> **Note:** Users can select the behavior of the Sleep scene (for example: decide whether to turn off media, turn off lights, and close blinds) in the Options menu in the Sleep scene from their T3 touch screens or Control4 app..

Programming

Use the Composer Pro Programming view to program the Control4 system. This section assumes that you have a general understanding about how to use Composer Pro to add and identify devices, and that you are now familiar with the Composer Pro interface. If not, read "Basics" sections or refer to Composer Pro Getting Started.

Use this chapter to learn:

- Programming basics
- Programming with commands
- Programming with conditionals
- Programming using rooms
- Programming using variables
- Programming with agents
- And more

Programming basics

Use the Programming view to program events and other actions that affect Control4 system devices.

> Tip: A useful tool for helping you keep track of your programming scripts is called Programming Detective which is part of the Detective Suite, in **Tools** > **Detective Suite**. See the Composer Pro Getting Started guide for details.

To get to the Programming view:

1. Start Composer Pro and connect to a Director.
2. Click **Programming**. In the Programming view, you can perform basic programming tasks.

Event-driven programming

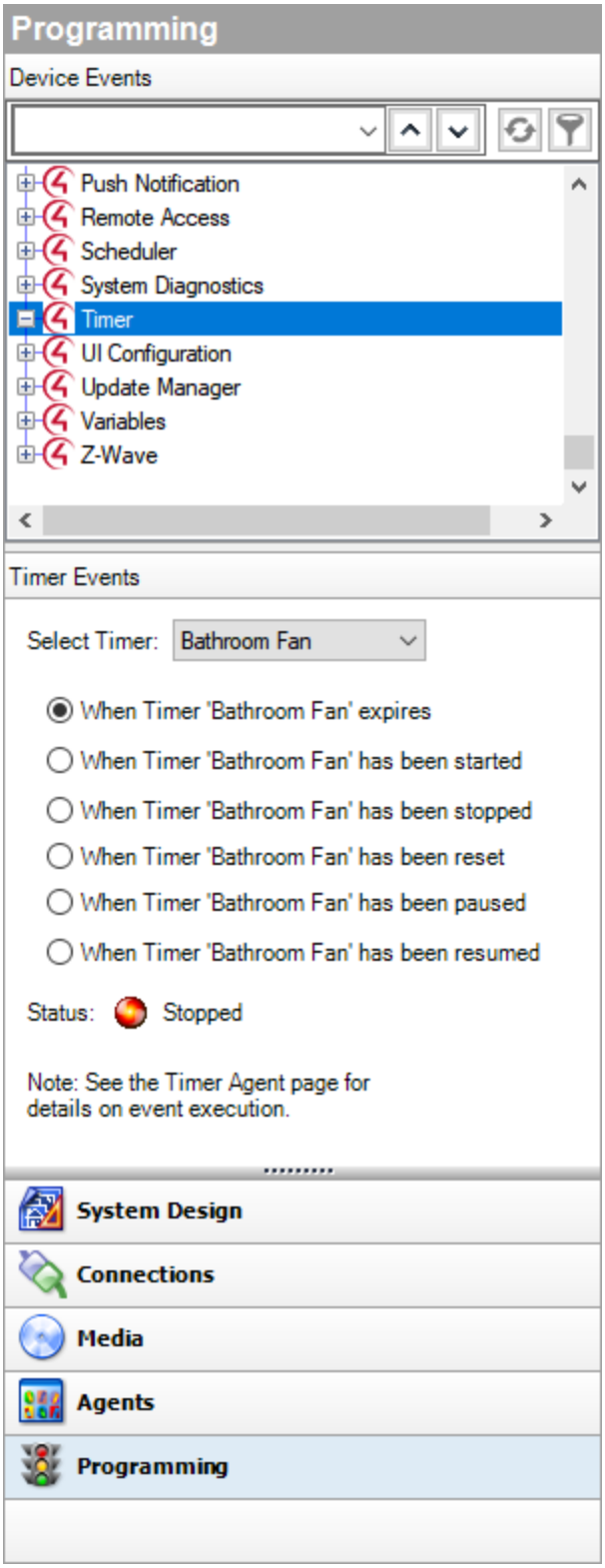
Programming is based on events. When an event is triggered, other actions can take place.

> Example: If you program to lower the projector screen in the Theater by pressing a keypad button. You can program the receiver, DVD player, and projector to power up and start playing a DVD also. Programming the system is where the true value of Composer Pro becomes a reality.

To program the system using Composer Pro, you drag and drop Events and Actions that you create for corresponding devices to a programming Script pane. The sections below show these panes.

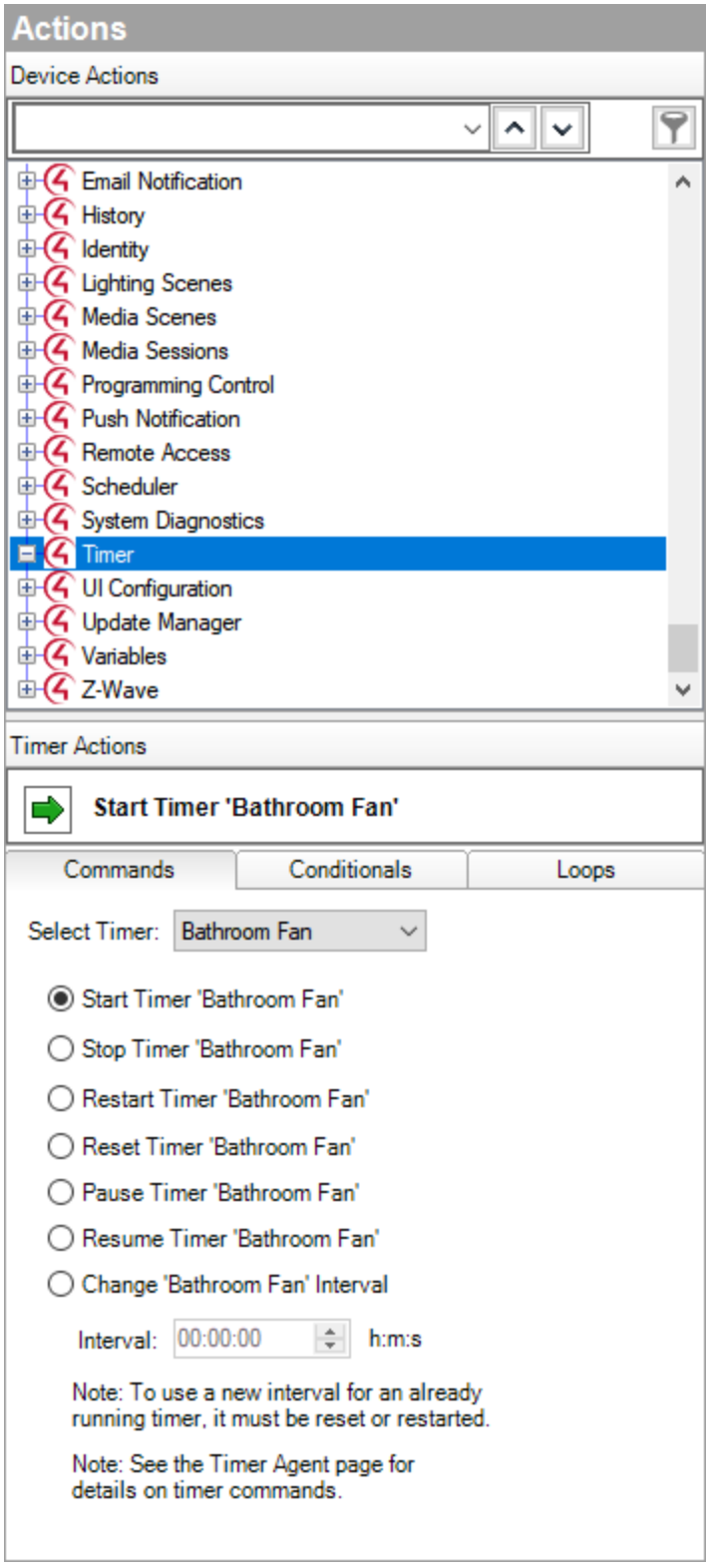
Events (Programming pane)

Select an event (left side of the window):



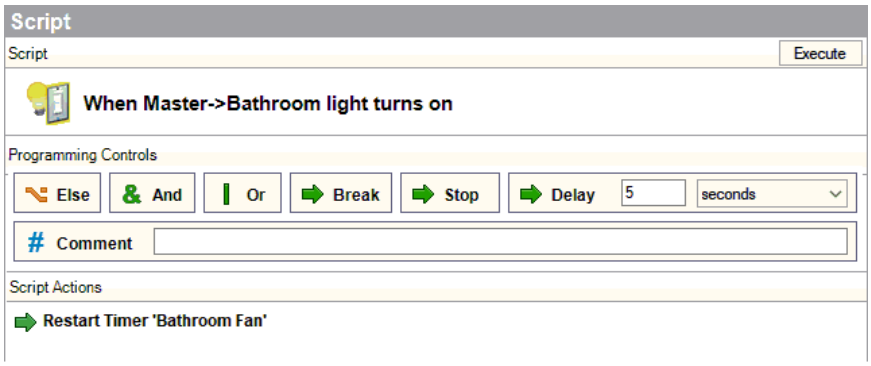
Actions (Actions pane)

Select the action(s) (right side of the window):



Script (Script pane)

After you select the Event, Drag the Actions commands to the Script pane (middle pane):



The next table describes events, actions, and the script.

Programming Item	Description
Events	All programming begins with events. An event is a “when” statement. An event is the trigger report that something happened that results in an automation. Events happen instantaneously. On a keypad, pushing a button is one event. Actions all occur under Events. Examples of events include: • When the door opens • When it is 7:00 AM • When it is sunrise
Actions	After the event identifies to the system that something occurred, it sends actions. The following are the methods that are used by the system to define actions: • Commands. The Commands tab displays all available commands for a selected item in the Action Device Tree. A command is a “do” statement. Commands are actions the Director tells the device to do. Examples of commands include: Light: on, off Blu-ray player: play, stop, pause Security device: arm, disarm TV device: Power on/off, change channel • Conditionals. The Conditionals tab displays all available conditionals for a selected item in the Action Device tree. A conditional is an “if” statement. An “if” statement asks a true/false question to the device. Examples of conditionals include: If door is open If after 5 PM If light is greater than 50 percent

- Loops. The Loops tab displays all available loops for a selected item in the Action Device tree. A loop is another type of conditional. A conditional loop is a “while” statement. It is something that is ongoing. Examples of conditional loops:

While the sprinklers are on

While the motion detector detects movement

While a doorbell switch is being pressed

Warning: Using loops (*WHILE* statements) can potentially overwhelm the controller’s CPU. Use loops sparingly.

- Delays. A delay stalls a program from running to ensure actions that occur at the right time.

Script	The linking of events and actions is defined in the script.

> Tip: To configure or program devices, you can use properties, agents and variables also. These are considered advanced configuration and programming tasks. See “ Using and Programming with Agents ” or “ Examples: programming with variables.”

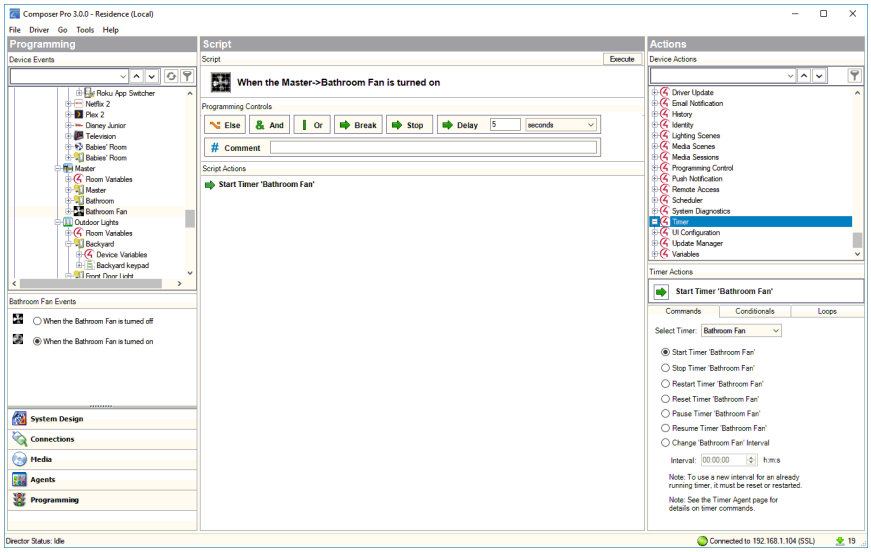
Programming elements

Basic programming consists of two parts:

1. Identify a device’s events to trigger actions.
2. Define a device’s actions to trigger when an event fires.

The following steps introduce the basic programming flow and script creation:

1. Select the device--**Bathroom Fan**--in the *Device Events* pane and select the event--**When the Bathroom Fan is turned on**. Notice that it appears in the *Script* pane.



2. Define the device's actions--Under Timer, select the **Bathroom Fan** timer and select the **Start Timer** action--in the *Actions* pane.
3. Drag the actions to the script (Script pane).
4. To test the programming command, in the *Script* pane, click **Execute**.

> Note: Programming can make use of agents also, where you can include pre-programmed system functionality, such as scheduling, delays, or setting up Lighting Scenes. Example: To program around sunrise and sunset, use the Scheduler agent.

See “ Using and Programming with Agents ” for more information about using agents in programming.

See the next section or *Composer Pro Getting Started* for example programs you can create.

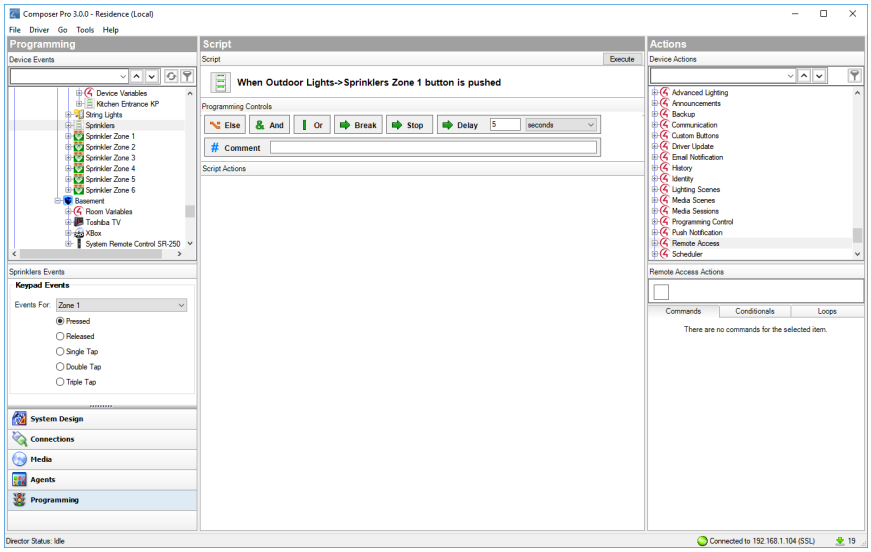
Programming with commands

A Command for a Control4 system is a “do” statement. Commands are actions that tell a device what to do.

> Example: The example in this section shows you how to program a keypad button to turn on the sprinkler system. This example assumes the keypad and sprinkler system are already set up.

To program a keypad button to toggle sprinklers on and off:

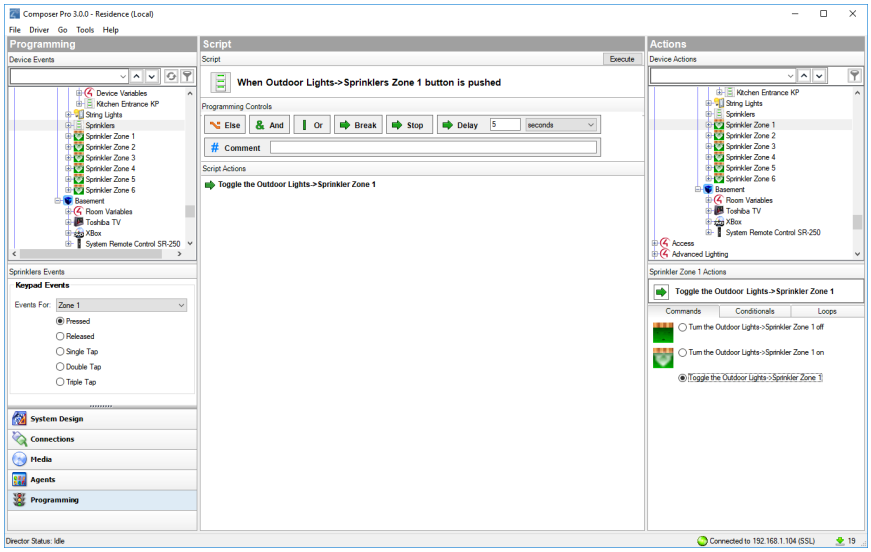
1. Start Composer Pro and connect to a Director.
2. Click Programming.
3. In the *Device Events* pane project tree, select the **keypad**.
4. In the *keypad Events* pane, select the button that you want to program—**Zone 1**. This automatically identifies the Press event for programming the button on the keypad. The event appears at the top of the Script pane.



5. In the *Actions* pane, select the device--**Sprinkler Zone 1**.
6. In the *device's Actions* tab, select **Toggle the Sprinkler Zone 1**. The command you chose is displayed in the Sprinkler System Actions pane with a green arrow.

Note: The title of this pane varies depending on the device you select.

7. Click the **green arrow**, and drag it to the **Script** pane (center pane).



8. To test, click **Execute** in the *Script* pane to turn on the sprinklers.
9. Click **Execute** again to turn off the sprinklers.

   Results: The top button of the keypad now toggles the sprinklers on and off.

Programming with conditionals

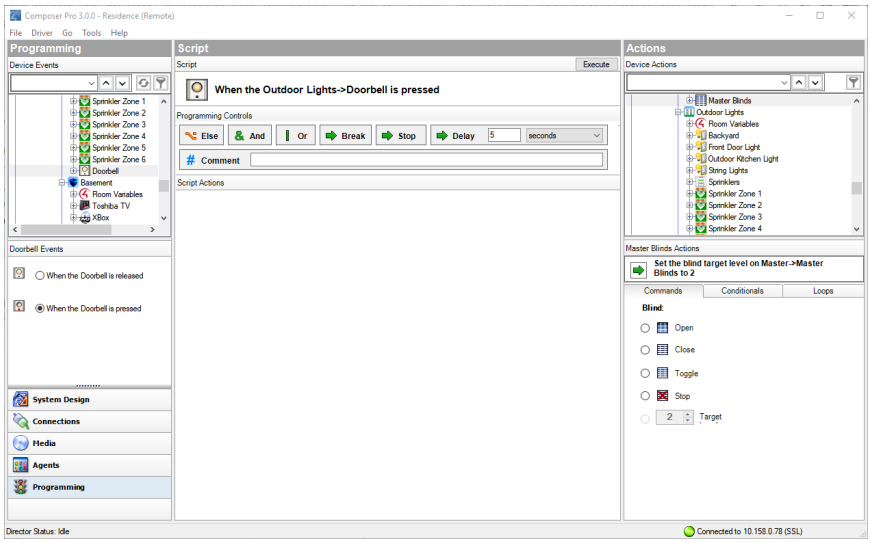
A conditional is an 'If' statement in Composer Pro that asks a true or false question to the device.

- A 'Break' command used in an 'If' statement should jump to the *first* statement after the 'If'. See “Programming with Delay, Stop and Break Commands” for details. Note: A 'Break' command in an 'If' statement won't behave as a 'Stop' command, but will move to the next level in the script.
- A break *not* in a 'While' or 'If' statement should behave like a 'Stop' command (jumps to the *first* statement after the function).

> Example: The example in this section shows how to use conditionals in programming. If a light is off when the doorbell is pressed, the light is programmed to turn on. Conditionals also use When statements (events). When the doorbell is pressed, if the light is off, program the light to turn on.

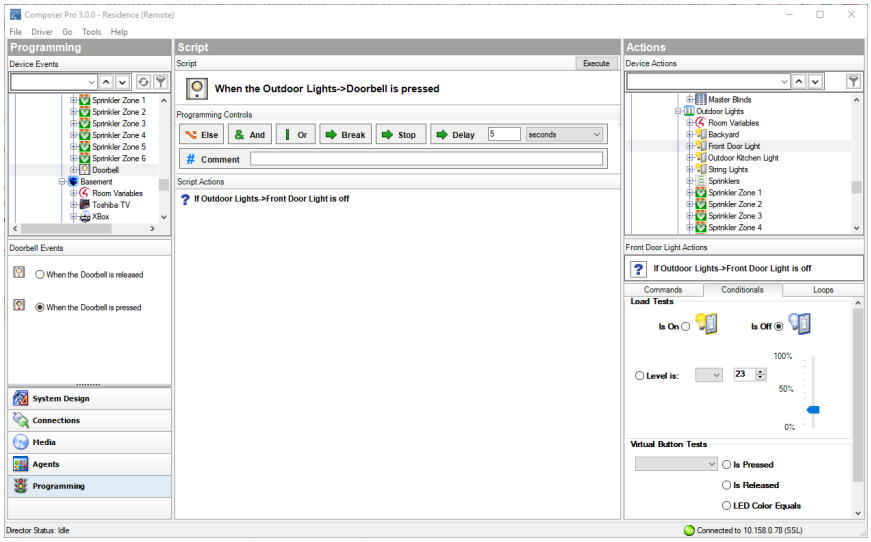
To program a conditional that turns on the light when the doorbell is pressed and the light is off:

1. Make sure that the doorbell and light switch are configured in the project.
2. Click **Programming**.
3. In the *Device Events* pane project tree, select the **Doorbell**.
4. Select the **When the Doorbell is pressed** event. The event appears at the top of the *Script* pane.



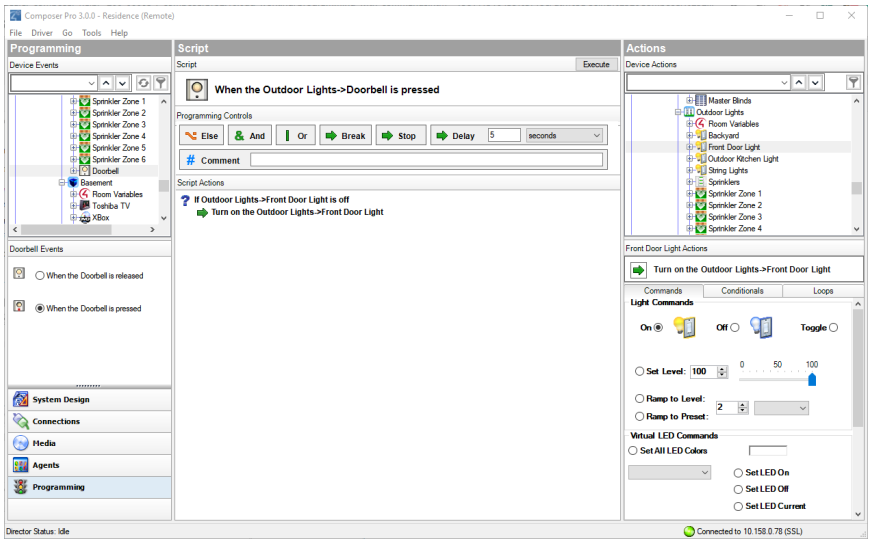
5. In the *Device Actions* pane, select the **Front Door Light**. Notice that the light switch actions that can be programmed for this device appear in the Light Switch Actions pane below the Device Actions project tree.
6. Click the **Conditionals** tab, and select **Is Off**. Composer Pro displays the conditional you chose in the *Front Door Light Actions* pane: **? If <room>->Front Door Light is off**.

7. Drag the **blue question mark** icon to the *Script* pane.



8. Click the **Commands** tab, and select **On**.
9. Drag the **green arrow** to the **blue question mark** in the *Script* pane to make it a child under the "If" statement (nest the command under the "If" statement).

Tip: If you drag the action to the text, or you drag the action under the text to the open space, it places the action as an equal above the conditional. If you drag the action to the question mark, it becomes a subset of the conditional. Notice the direction of the arrow to place the action as a peer or a subset under the statement.



10. Click **Execute**. With the Front Door Light off, press the doorbell; the light should come on.

Programming with Delay, Stop, Break, Or, And, and Else commands

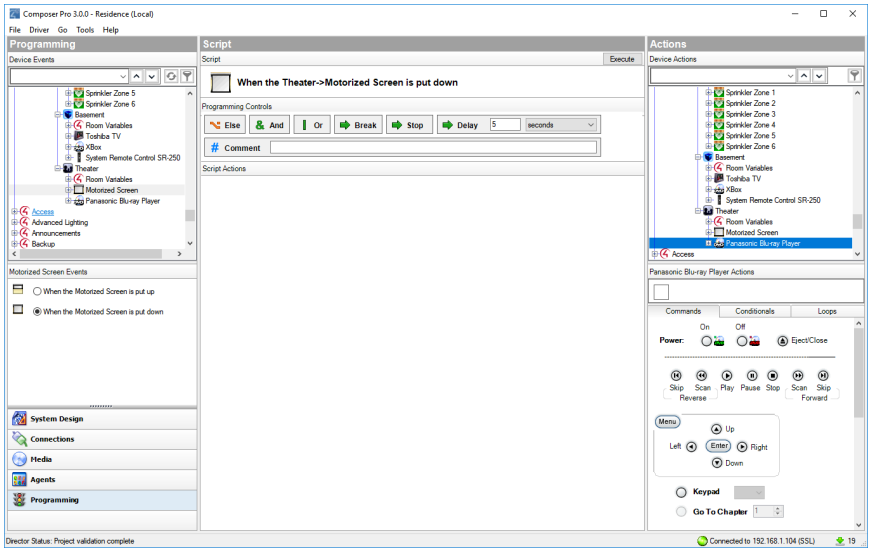
When programming in Composer, you have the following Programming Controls available to create advanced programming:

- **Delay**–Lets you delay an action from taking place.
- **Stop**–Lets you stop the programming script.
- **Break**–Lets you break out of a 'While' or loop or 'If' statement when a specified condition is met and returns to the programming outside of the loop.
- **Or**–Lets you group conditionals together with an 'or' logical grouping. If any of the conditionals is true, the programming continues.
- **And**–Lets you group conditionals together with an 'and' logical grouping. If all of the conditionals are true, the programming continues.
- **Else**–Lets you program an alternate set of programming for a conditional. If the conditional succeeds, the programming continues under the 'if' statement. If the conditional fails, the programming continues under the 'else' statement.

Delay command

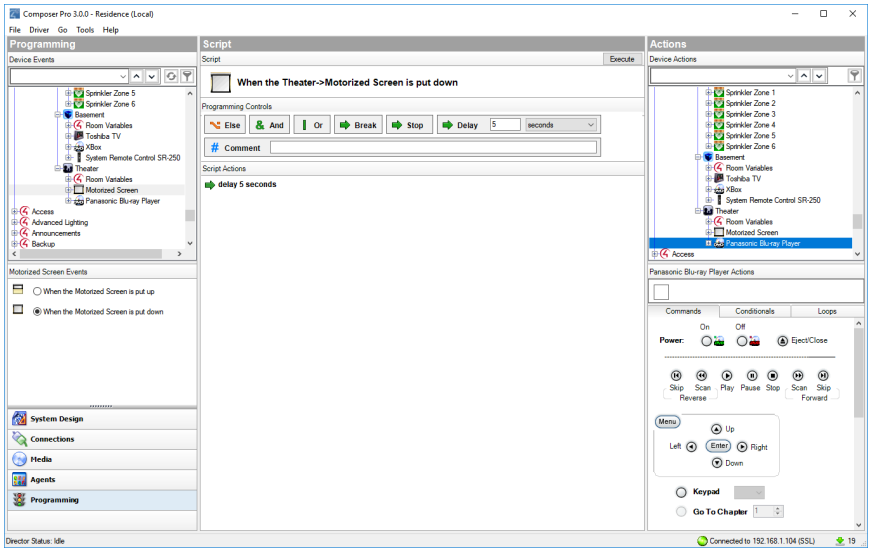
To use the Delay command during programming, see this example using a Motorized Screen and a *Blu-ray* player:

1. Start Composer Pro and connect to a Director.
2. Click **Programming**.
3. Select the **Motorized Screen** in the project tree.
4. Select the event **When the Motorized Screen is put down**. Notice the string that appears in the *Script* pane.

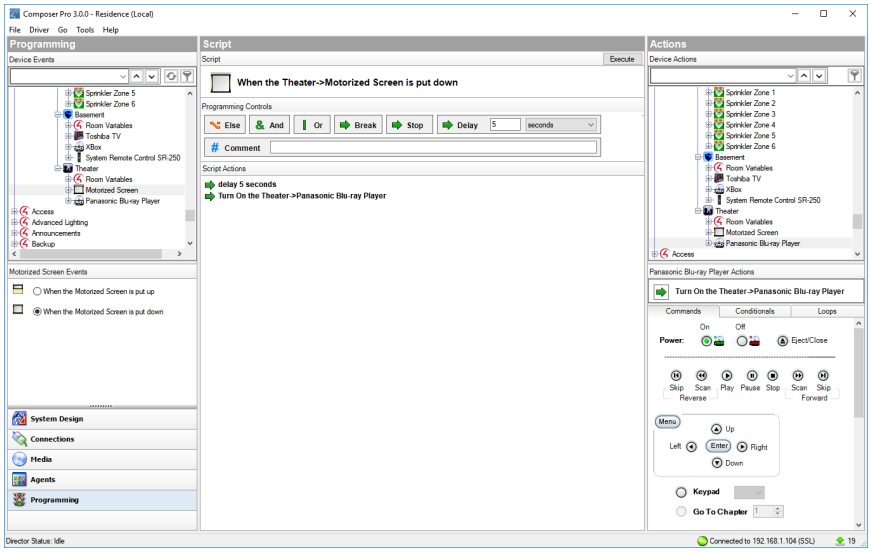


5. To use the Delay command, in the *Programming Controls* section in the top of the *Script* pane, enter **5** next to **Delay**.

6. Drag the **green arrow** Delay command to the *Script* pane.



9. In the *Device Actions* pane, find and select the **blu-ray player**.
10. Click the **Commands** tab, and click **Power** > **On**.
11. Drag the **green arrow** 'Turn on the <room's> <blu-ray player>' to the *Script* pane.

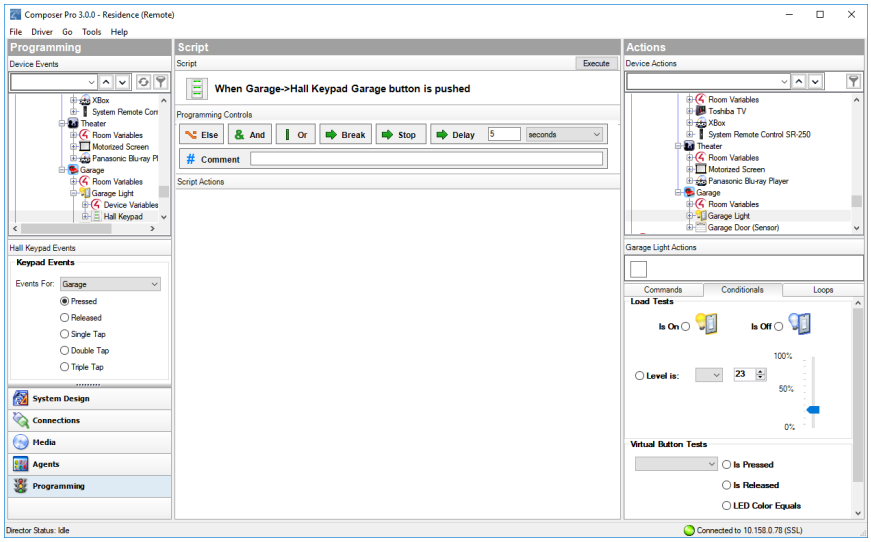


Stop command

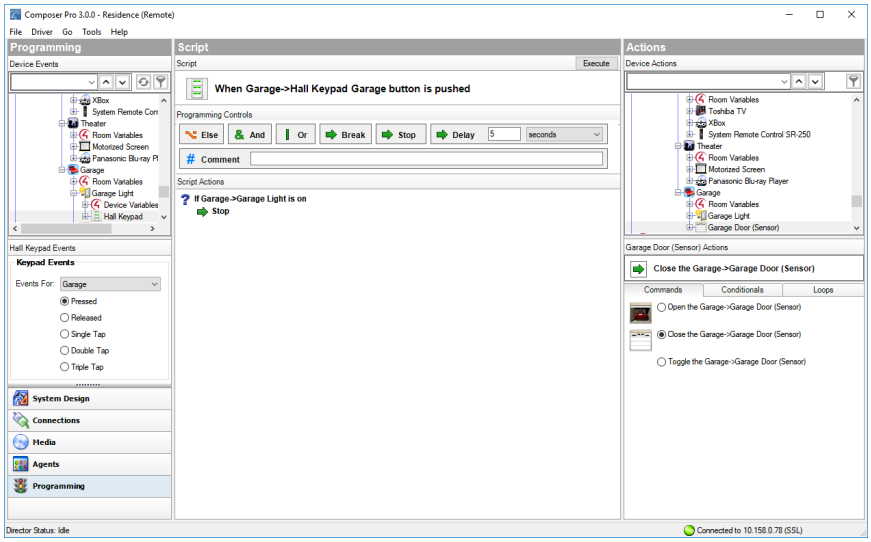
This example uses a Stop command to not close the garage door if the garage light is on. If the light is off, the garage door closes.

To use the Stop command during programming, see this example using a keypad, a garage door, and a dimmer:

1. In the keypad *Events* pane, select the **Garage Door button** and select the **Pressed** event for the Garage keypad button. 'When <room> -> <keypad name> Garage button is pushed' appears at the top of the *Script* pane.

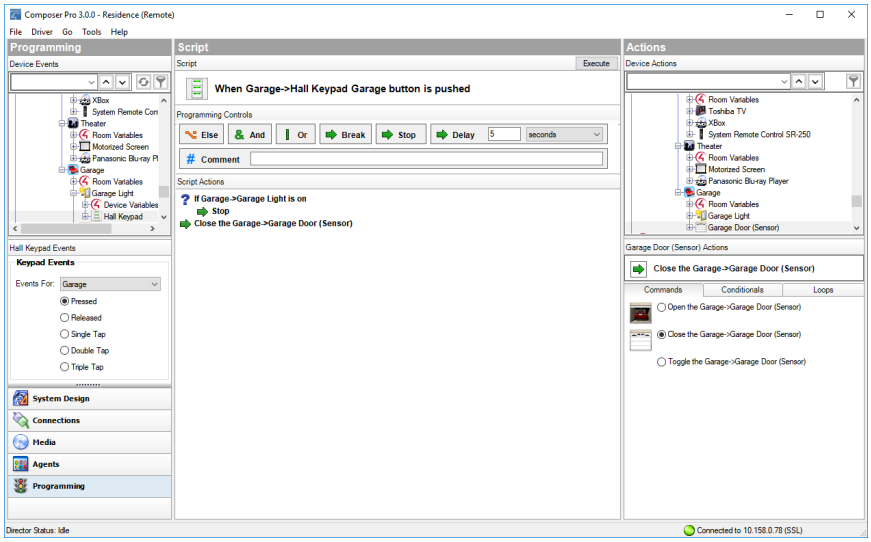


2. In the *Garage Light Actions* pane, click the **Conditionals** tab, and then click **Is On**.
3. Click the **blue question mark** next to 'If the <room>->Garage Light is on,' and drag it to the Script pane.
4. In *Programming Controls*, and click the **Stop** command and drag it into the *Script* pane.
5. Drag the **green arrow** 'Stop' over the **blue question mark** in the Script pane to nest it below "If <room>->Garage Light is on".



6. In the *Device Actions* pane, select the **Garage Door**.
7. Click the **Commands** tab, and select **Close the <room>->Garage Door**.

8. Drag the **green arrow 'Close the <room>->Garage Door'** below the Stop command.

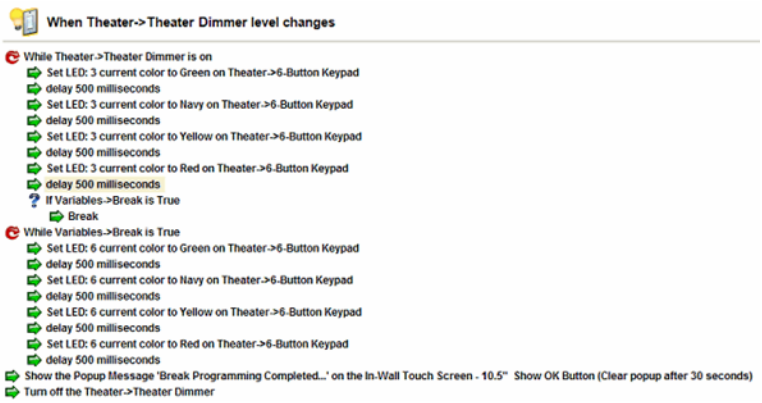


Break command

Here are some rules about using the Break command (see example script below).

- A break in a 'While' loop jumps to the *first* statement after the While statement.
- A break in an 'If' statement (nested in a 'While' statement) jumps to the *first* statement after the 'If.'
- A break not in a 'While' or an 'If' statement should behave like a Stop command (jumps to the *first* statement after the function).

Note the 'Break' command in the statement below. If the 'While' statement above the 'Break' command (in an 'If' statement) is met (True), then the program continues to the next 'While' statement. Otherwise it skips to the next command (green arrow) statements at the bottom of the script.



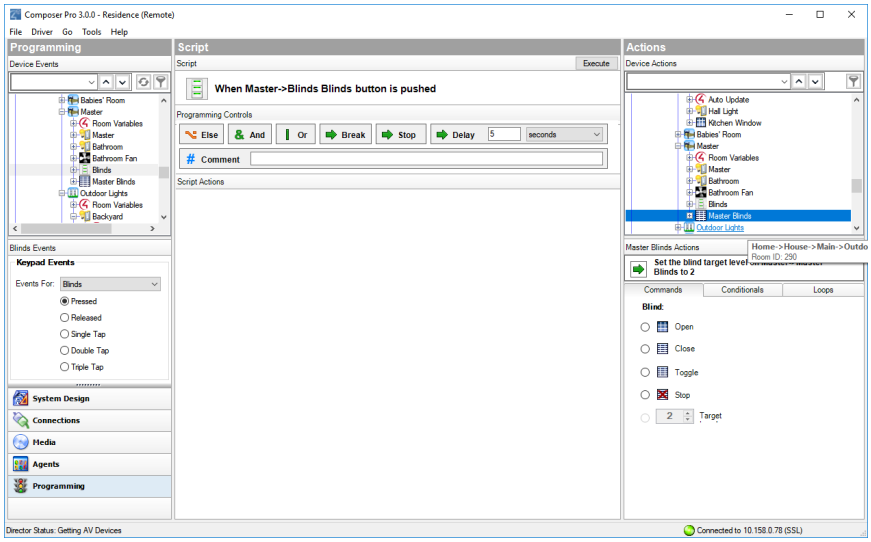
See " Programming with a While statement" or " Programming with conditionals" for details.

Else command

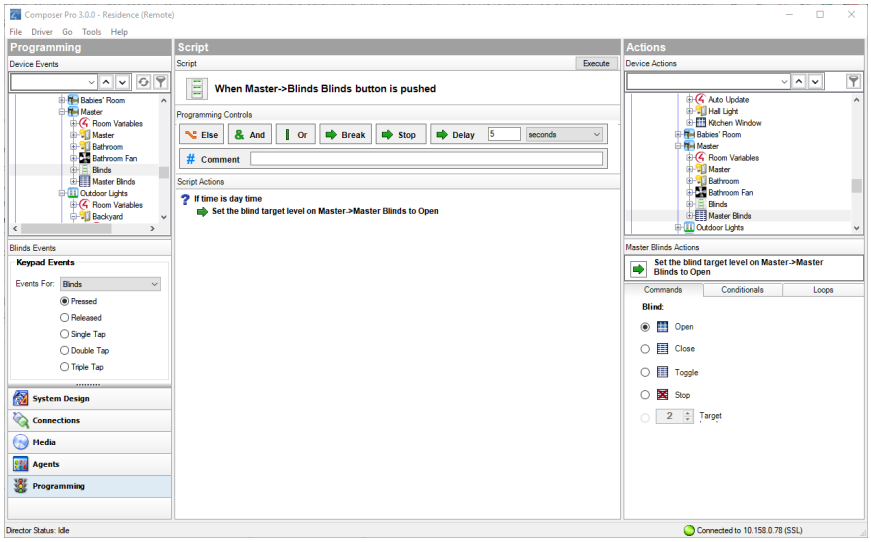
You can use an Else command to create alternate programming to an If conditional. This example will program a button to open the blinds if it's day time and close the blinds if it's night time.

To program the blinds with an Else command:

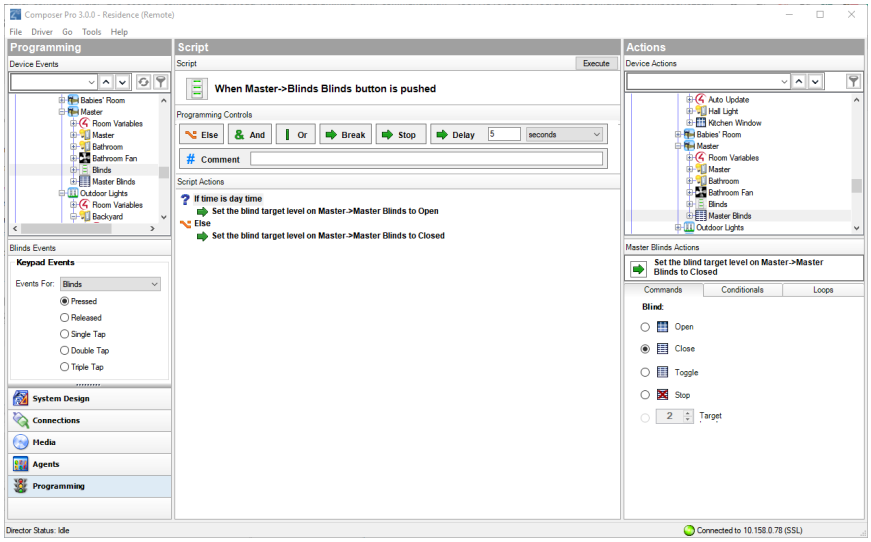
1. Start Composer Pro and connect to a Director.
2. Click **Programming**.
3. In the *Device Events* pane project tree, select the **keypad**.
4. In the *keypad Events* pane, select the button that you want to program–**Blinds** This automatically identifies the Press event for programming the button on the keypad. The event appears at the top of the *Script* pane.



5. In *Device Actions*, select **Scheduler** and click on **Conditionals**.
6. Click **Time** and click **Day time**.
7. Drag the **blue question** 'If time is day time' conditional to the *Script* pane.
8. Select the **Master Blinds** in *Device Actions*, click on **Open**, and drag the '**Set the blind target level on <room>->Master Blinds to Open**' command to nest it below the conditional.



9. In Programming Controls, click on Else and drag the Else icon on top of the conditional in the Script pane. The mouse icon changes to indicate you can place the Else command below the If command (and link them logically).
10. Select the **Master Blinds** in *Device Actions*, click on **Close**, and drag the '**Set the blind target level on <room>->Master Blinds to Close**' command to nest it below the Else conditional.



See “ Programming with a While statement” or “ Programming with conditionals” for details.

And command

You can use an And command to create additional conditionals to an If conditional. Both the If conditional and the other conditional(s) must be true or programming won't continue.

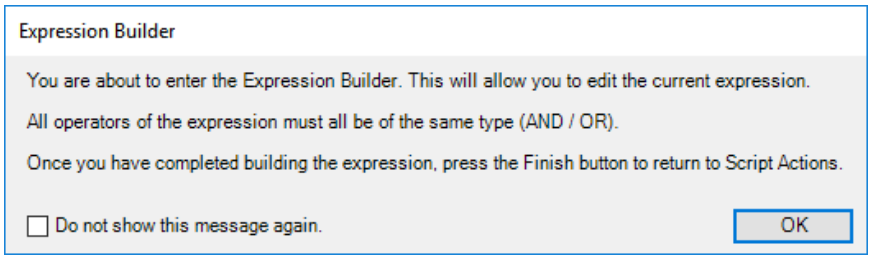
> Example: The example in this section shows how to use conditionals and an And command in programming. If a light is off when the doorbell is pressed and it's night time, the light is programmed to turn on.

To program a conditional with an And command:

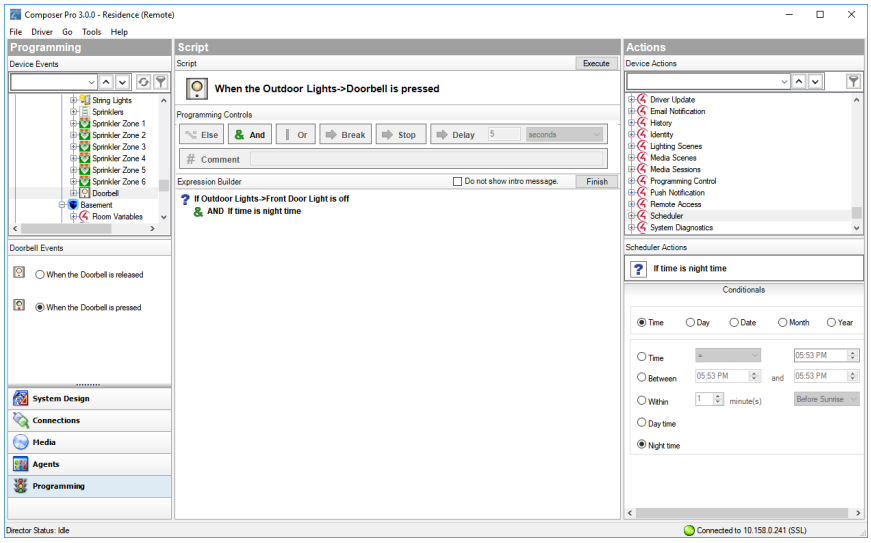
1. Follow the example in " Programming with conditionals". These next steps start after that example.

<continued from the steps in "Programming with conditionals">

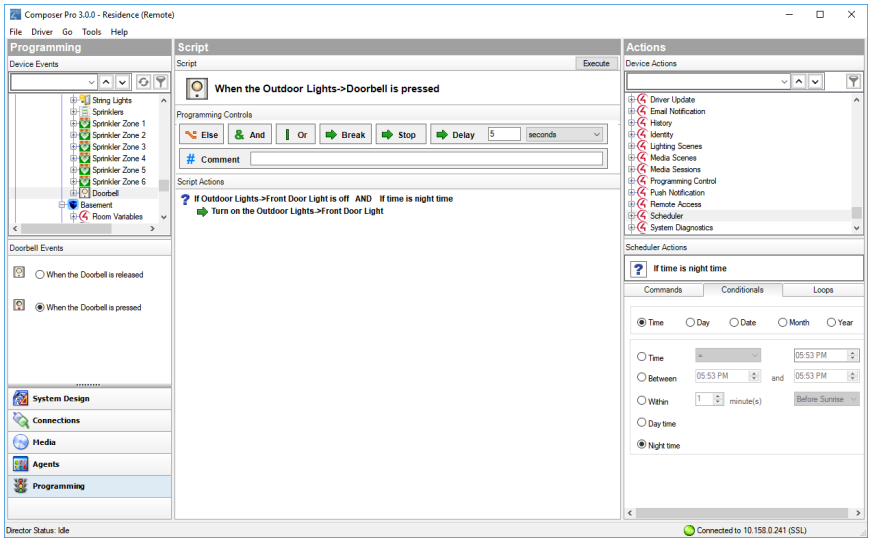
11. To add an And command, in *Programming Controls*, click **And** and drag it on top of the conditional in the *Script* window. The *Expression Builder* opens to help you build your complex conditional statement.



12. In the *Device Actions* pane project tree, select the **Scheduler**.
13. Click **Time** and **Night time**.
14. Drag the conditional '**If time is night time**' to the *Script* pane below the *AND* symbol.



15. Click **Finish** to close the *Expression Builder*. The complex condition now reads '**If <room>->Front Door Light is off AND If time is night time**'.



When the doorbell is pressed, the Front Door Light will turn on *if the light is off* AND *if it is night time*.

Or command

You can use an Or command to allow multiple conditionals to activate programming. If any conditional grouped with an Or command is true, the programming continues.

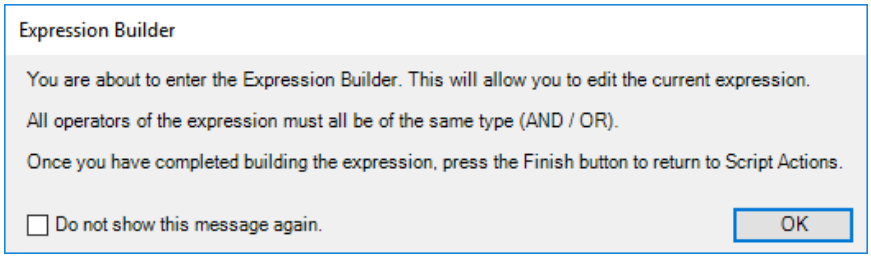
> Example: The example in this section shows how to use conditionals and an Or command in programming. If a light is off when the doorbell is pressed and it's night time, the light is programmed to turn on.

To program a conditional with an Or command:

1. Follow the example in " Programming with conditionals". These next steps start after that example.

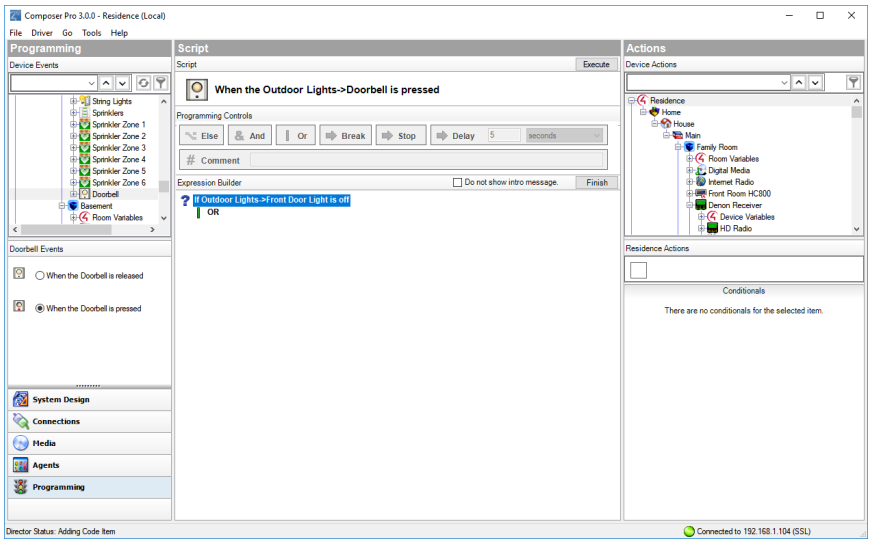
<continued from the steps in "Programming with conditionals">

11. To add an And command, in *Programming Controls*, click **Or** and drag it on top of the conditional in the *Script* window. The *Expression Builder* opens to help you build your complex conditional statement.

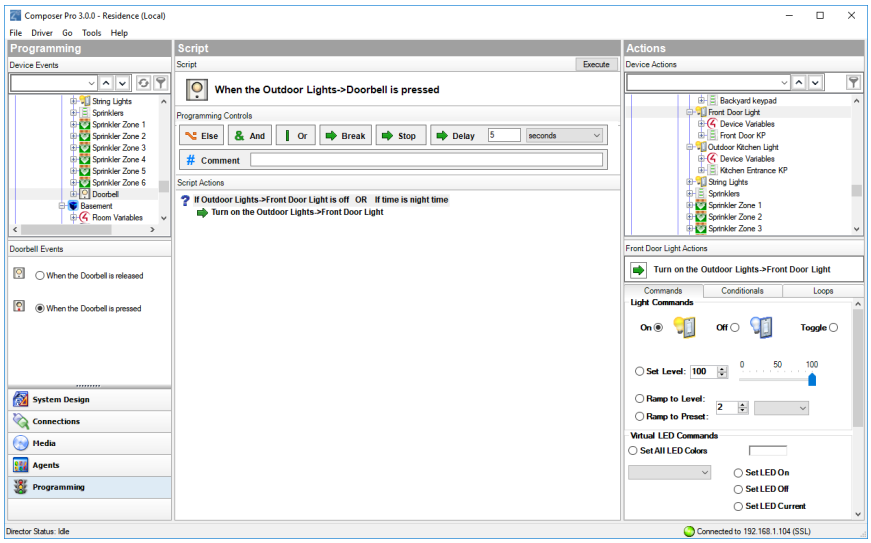


12. In the *Device Actions* pane project tree, select the **Scheduler**.
13. Click **Time** and **Night time**.

14. Drag the conditional '**If time is night time**' to the *Script* pane below the *OR* symbol.



15. Click **Finish** to close the *Expression Builder*. The complex condition now reads '**If <room>->Front Door Light is off OR If time is night time**'.



When the doorbell is pressed, the Front Door Light will turn on *if the light is off* OR *if it is night time*.

Programming with a While statement

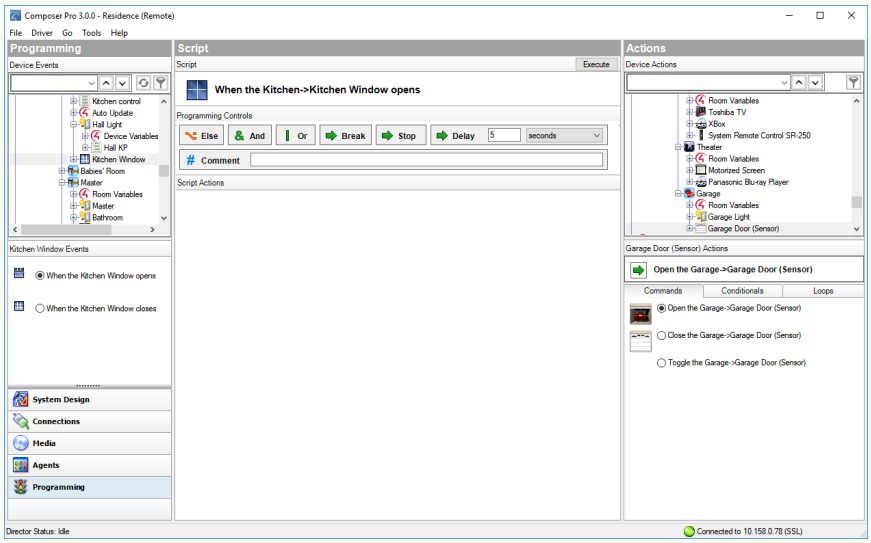
A 'While' statement runs continuously in a loop until the evaluation is shown to be False (Boolean value). 'While' statements can be repeating 'if' statements also.

> Caution: When programming with WHILE statements, the script **must** incorporate delays, or the script will run so fast that it will consume all available CPU resources and decrease system performance.

This example shows how to program a system to keep the air conditioning off while a window is open.

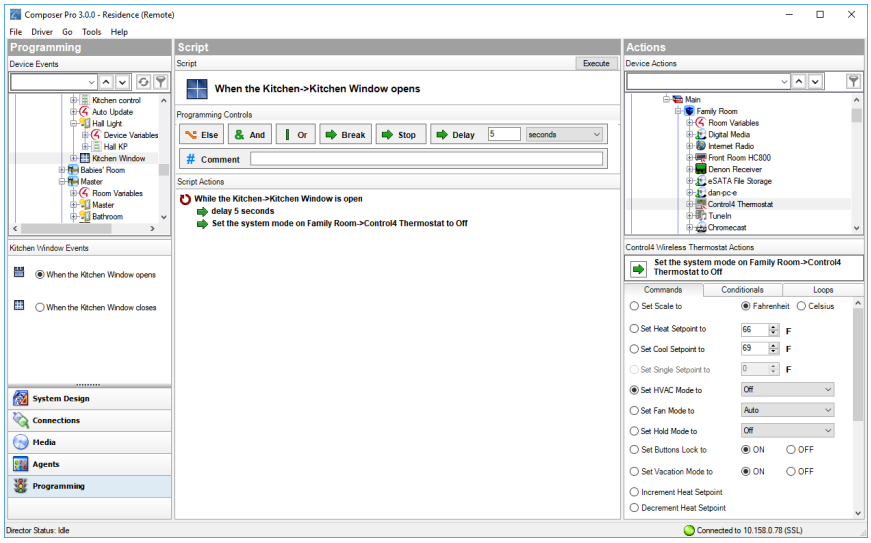
To program a While statement, follow this example:

1. Make sure the thermostat and window contact sensor are configured in Composer.
2. Click **Programming**.
3. In the project tree, select **Kitchen Window** Contact Sensor to trigger an event.
4. Select the **When the Kitchen Window opens** event. The event appears at the top of the *Script* pane.



5. In the Device Actions pane, select **Kitchen Window** Contact Sensor and click on **Loops**.
6. Select the **the Kitchen Window is open** loop.
7. Click the loop icon next to **'While the <room>->Kitchen Window is open'** and drag it into the *Script* pane.
8. In *Programming Controls*, enter **5 seconds** next to *Delay* and drag the Delay green arrow below the while loop in the *Script* pane to nest the delay below the while statement.
9. In Device Actions, select the **thermostat** and click on **Commands**.
10. Select **Off** in the *Set HVAC Mode to* selection.
11. Click on the green arrow next to **'Set the system mode on <room>->Control4 Thermostat to Off'** and drag

the green arrow below the while statement to nest it below the delay.



Programming using digital audio and rooms

You can program a Control4 system using the Digital Audio and Room objects in Composer Pro. You can use digital audio events when a session starts or stops. A session is when a song or playlist begins and ends. A list of songs can be compiled into a playlist. You can compile the list by songwriter, album, song type, or any combination. Room events include turning the room off and on, when media sessions begin and end, etc.

Program a button to play media or a playlist

Use the Control4 Composer Pro Programming view to program a button on a keypad to play an album or playlist.

> Example: The example in this section uses a 6-Button Keypad for the Theater room. When you press Button 1, music or a movie plays in the Theater room.

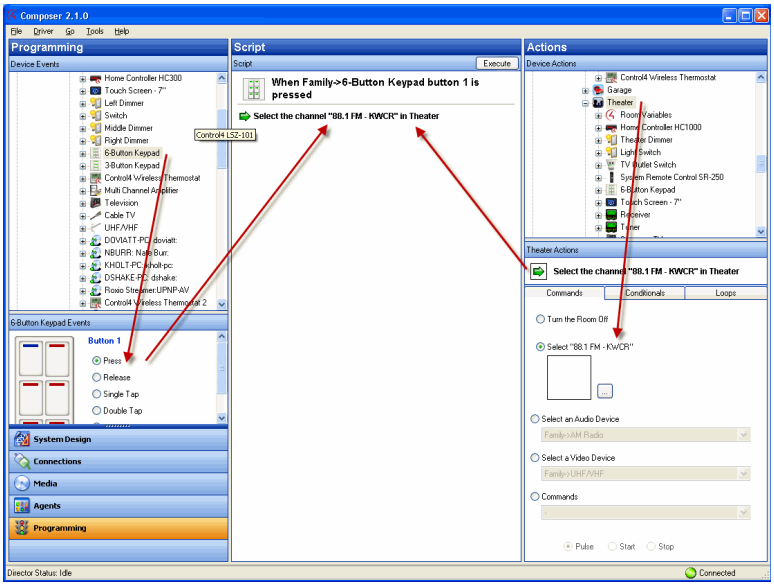
Prerequisites

- Ensure that a 2, 3, or 6-Button Keypad is installed as directed in the Control4 2, 3, or 6 Button Keypad Installation Guide.
- Ensure that your project has an audio end point, such as Speaker Point, added and identified on the network.

To program a button on a 6-Button Keypad to play music:

1. Start Composer Pro and connect to a Director.
2. Click **Programming**.
3. In Programming in the Device Events pane, select the **6-Button Keypad**.
4. In the 6-Button Keypad Events pane, press **Button 1**, and select the **Press** radio button.
5. In the Device Actions pane, select the **Theater** room.
6. Click the **Commands** tab, and press the **Select Media** radio button.
7. In the new window, select the media type to play, such as **Playlist**.
8. Select the movie, playlist, etc.
9. Click **OK**.
10. In the Actions pane, drag the **green arrow** to the Script pane.

11. Click **Execute** in the Script pane.



Program a button to turn up the volume

Use the Programming view to let you use a keypad button to turn up the volume in a room.

> Example: The example in this section uses a 6-Button Keypad for the Theater room. When you press Button 2 the volume increases in the Theater room.

Prerequisites

- Ensure that a 2, 3, or 6-Button Keypad is installed as directed in the Control4 2, 3, or 6 Button Keypad Installation Guide.
- Ensure that your project has an audio end point, such as a Speaker Point, added and identified on the network.

To program a button to turn up the volume:

1. Start Composer Pro and connect to a Director.
2. Click **Programming**.
3. In Programming on the Device Events pane, select the **6-Button Keypad**.
4. In the 6-Button Keypad Events pane, press **Button 2**, and then select the **Press** radio button.
5. In the Device Actions pane, select the **Receiver**.
6. Click the **Commands** tab. In Sound, select **Volume** > **Start** > **Up**.
7. Drag the **green arrow** in the Receiver Actions pane to the Script pane.
8. Click **Execute**.

Program a button to add a room to another room's music session

Use the Programming view to use a keypad button to play music in additional rooms.

> Example: The example in this section uses a 6-Button Keypad for the Theater room. When you press Button 3, music starts playing in the Bedroom as well as the Theater room.

Prerequisites

- Ensure that a 2, 3, or 6-Button Keypad is installed as directed in the Control4 2, 3, or 6 Button Keypad Installation Guide.
- Ensure that your project has an audio end point, such as Speaker Point, added and identified on the network.

To program a button to add another room's music session:

1. Start Composer Pro and connect to a Director.
2. Click **Programming**.
3. In Programming on the Device Events pane, select the **6-Button Keypad**.
4. In the 6-Button Keypad Events pane, press **Button 3**, and then select the **Press** radio button.
5. In the Device Actions pane, select **Digital Media**.
6. Click the **Commands** tab.
7. Use the pull-down menu to select the **Theater** room as the Selected Room. Select the **Add Rooms** radio button.
8. Check the box next to **Bedroom** to indicate that this is the room that is going to join the music session.
9. Drag the **green arrow** in the Digital Audio Actions pane to the **Script** pane.
10. Click **Execute**.

Set the default for a room's music volume

Use the System Design view to set the default music or media volume for a room.

> Example: The example in this section uses the Theater room. When you set the default, the volume stays at a certain level for the Theater room until you change it. You can change the volume for every room that uses music or media.

Prerequisites

- Ensure that the controller is added and identified on the network..
- Ensure that your project has an audio end point, such as Speaker Point, added and identified on the network.

To set the default volume for a room:

1. Start Composer Pro and connect to a Director.

2. Click System Design.
3. In the project tree, click a room.
4. In the Properties pane, click the Miscellaneous tab.
5. In the Miscellaneous tab, check the **Enable Default Volume** box. Adjust the Audio Volume and Video Volume as desired for the room. The default volumes are enabled immediately. Repeat these steps for each room in the Control4 system.

Examples: programming with variables

Use the Programming view to program the Control4 system using configuration, properties, variables, delays and agents.

Variables provide other programming options not available using commands, conditionals or loops.

There are three types of variables you can use:

- **Room Variables**–Provide you with additional programming options not available in the Room object programming. Use Room object programming as a preference to room variables whenever possible. See "Example: Using room variables."
- **Custom Variables**–Let you define additional programming options using:
- **Boolean**—Provides a True/False option. For example, the light is on or off. If the light is on, it is True; if the light is off, it is False.
- Device—Provides a list of device options.
- **Number**—Provides a value option. For example, the light level is 70 percent.
- **String**—Provides the option to enter a string.

To program using a custom variable, in the Agent view select **Variable** and click **New** to set up a new variable.

Example: Use one keypad button to toggle between turning on the Theater Dimmer and the Theater Switch.

- **Container Variables**–Provides the ability to connect two or more devices together by using the device variables. A variable is a representation of information about the controlled devices, for example, a power state or current level of the device. It works much like a Media Scenes agent (see "Using and Programming with Agents" for details). Container variables are available in the Agent view by selecting Variables.

Note: Container variables are provided only for backward capability in Release 1.3 and later. Issues with various implementations have been found. The use of Container variables for future implementations is not recommended. Where possible, replace existing implementations with alternate programming.

The sections below provide examples you can follow when you use variables.

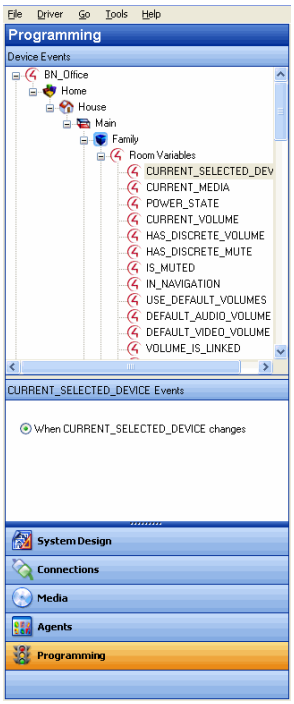
Example: Using room variables

Control4 room variables provide greater flexibility in programming, letting you program using events and actions at the room level.

> Note: Most of the functions in Room Variables are available by selecting the Room object which is the recommended method for programming the room. Whenever possible, use the Room object rather than Room Variables.

To use room variables:

1. Start Composer Pro and connect to a Director.
2. Click **Programming**. In this view listed under every room in the project tree is a Room Variables object.
3. Click to expand the **Room Variables** options. Room variables are available as events and actions.



The room variables are described in the following table:

Events/Actions	Description
CURRENT_SELECTED_ DEVICE	Lets you do programming when any device changes in the room.
CURRENT_MEDIA	Lets you do programming when any media changes in the room.
POWER_STATE	Lets you do programming when any device's power state changes from True to False in the room (read only). A device in the room is required to detect the power state.
CURRENT_VOLUME	Lets you do programming when the volume of the currently selected audio path changes in the room (requires discrete volume). Use conditional programming.
HAS DISCRETE_VOLUME	Lets you do programming when any devices changes in the room (requires discrete volume). Use command programming.
HAS_DISCRETE_MUTE	Lets you do programming when Mute state is known (MUTE_ON or MUTE_OFF).
IS_MUTED	Lets you do programming when in Mute state (MUTE_ON).
IN_NAVIGATION	Lets you do programming when On-screen is available.
USE_DEFAULT_ VOLUMES	Lets you do programming any time a selection changes to reset the default volume. For example, when changing from viewing a DVD to listening to music, the volume is reset to the default discrete set volume.
DEFAULT_AUDIO_ VOLUME	Lets you program the default Audio volume.

Events/Actions	Description
DEFAULT_VIDEO_ VOLUME	Lets you program the default Video Audio volume.
VOLUME_IS_LINKED	Lets you set programming not to affect already linked volume.
MUTE_IS_LINKED	Lets you set programming not to affect already linked mute state.
ROOMOFF_IS_LINKED	Lets you set programming not to affect already linked room off state.
SELECTIONS_LINKED	Lets you set programming not to affect already linked selections.
ROOM_HIDDEN	Lets you set programming to hide rooms from appearing on the navigation device.
MEDIA_SCENE_ACTIVE	Lets you set programming to set a media scene as active.

Variable handling

In programming, variables are easier to define than conditional loops.

Variable handling enhancements:

- **Preserve user-defined variables**–Preserves the user-defined variable values (for example, the current dimmer light level) across a normal system restart. It may not preserve them if the system shuts down abnormally.
- **Program a system startup** event –Initializes variables or performs other programming at system startup with a system startup event (in Programming, select the **root** of the project, and then select the event **When the project is loaded**).
- **Define one variable to equal another**–Defines one variable to equal another variable. This can be used to save and restore variable values.

  Example: The level of a light or the volume of music in a room.

  After this value is saved to the variable, you can restore the system variable to the value stored in the user variable. The system can then compare the two variables and determine if it needs to reset one of them.

- **Create the event "When a System reboots"**–Sends an email notification to the Control4 dealer that a customer's system rebooted, helping the dealer monitor the system's performance.

Example: Using custom Boolean variables in an agent

Use the Programming view to create custom variables in an agent using a Boolean value.

In this example, when someone is at the door:

- Program to activate the Media Scene 'Someone is at the door,' and turn on the porch light.
- Program to play a song in the Bedroom and the Theater.
- When the Motion Sensor stops sensing motion at the door, program to turn the music and porch light off.

Prerequisites

The following devices are added and identified in the project:

- Controller
- Porch Light Switch
- Bedroom music
- Theater music
- Motion Sensor

To program using a custom Boolean variable in an agent:

1. Start Composer Pro and connect to a Director.
2. Click **System Design**.
3. Click **Connections**. Make sure the connections are correct.

Note: Ensure that the Front Light is connected to the correct Contact Sensor on the controller.

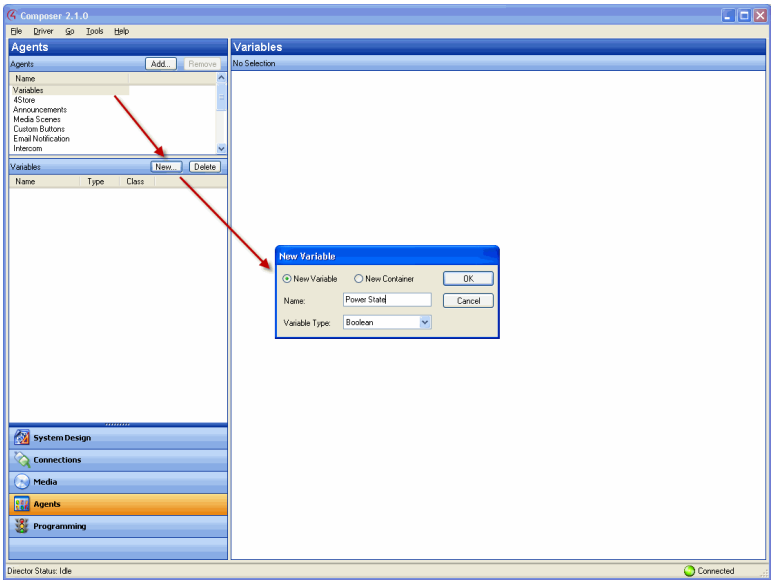
4. Click the **Network** tab, and ensure that the controller and Porch Light have a network address.

Create a new variable

5. Click **Agents**.
6. Select **Variable**. The Variables view appears.
7. Click **New**.
8. On the dialog that appears, do the following:

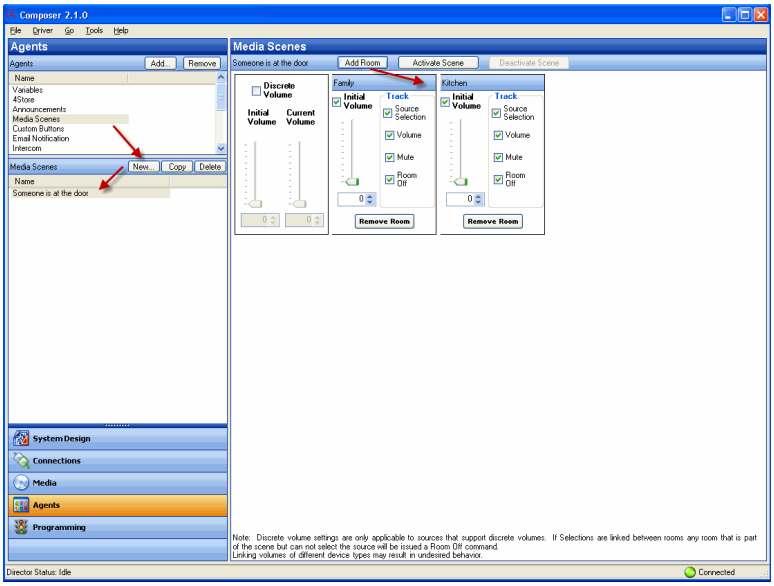
1. Click **New Variable**.
2. In the drop-down menu, select **Boolean**.

3. Name the Variable Power State and click **OK**. The default value is false.



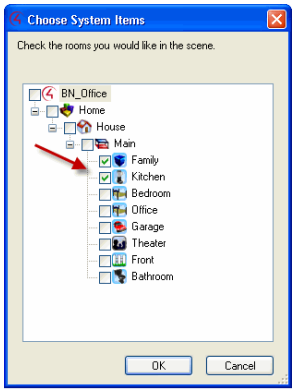
Create a media scene 'Someone is at the door'

9. Select **Media Scenes**, and click **New**.
10. Name the Media Scene **Someone is at the door**. Click **OK**.

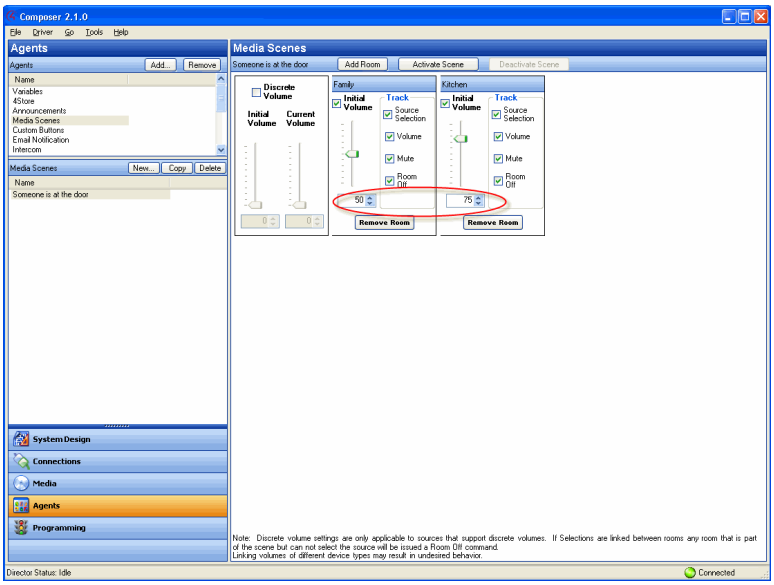


Add the bedroom and theater room

11. Click **Add Room**, and add the **Theater** and the **Bedroom** (see above).



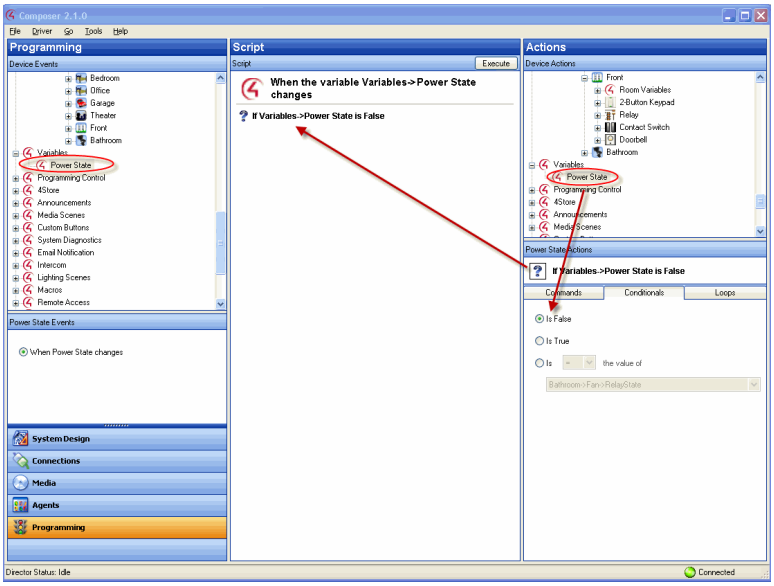
12. Set the volume in the Bedroom to **50**, and the volume in the Theater to **75**.



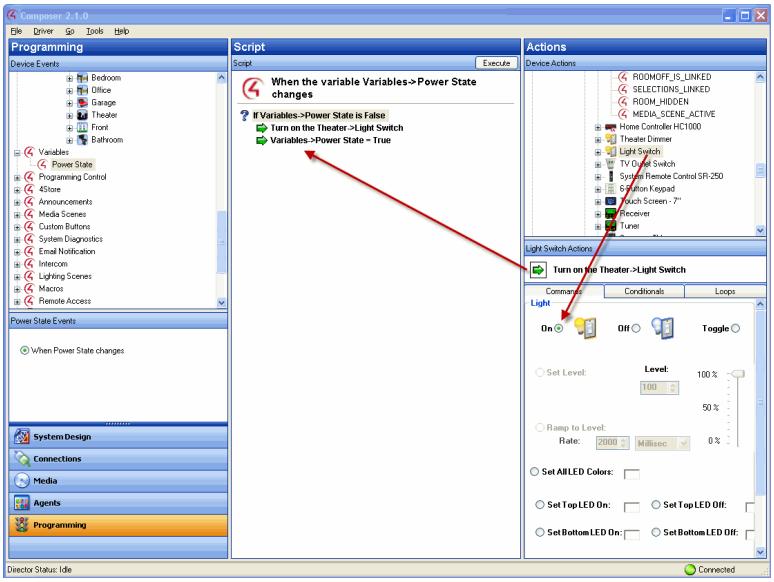
13. Click **Programming**.
14. In the project tree and the Device Events pane, click to expand Variables, and select **Power State**.
15. In the project tree and in the Device Actions pane, click to expand Variables, and select **Power State**.

Add the conditionals and commands

16. Follow the previous programming steps to create a script with Conditionals.
17. Click the **Conditionals** tab.
18. In the Conditionals tab, click **Is False**, and drag the **blue question mark** to the **Script** pane.

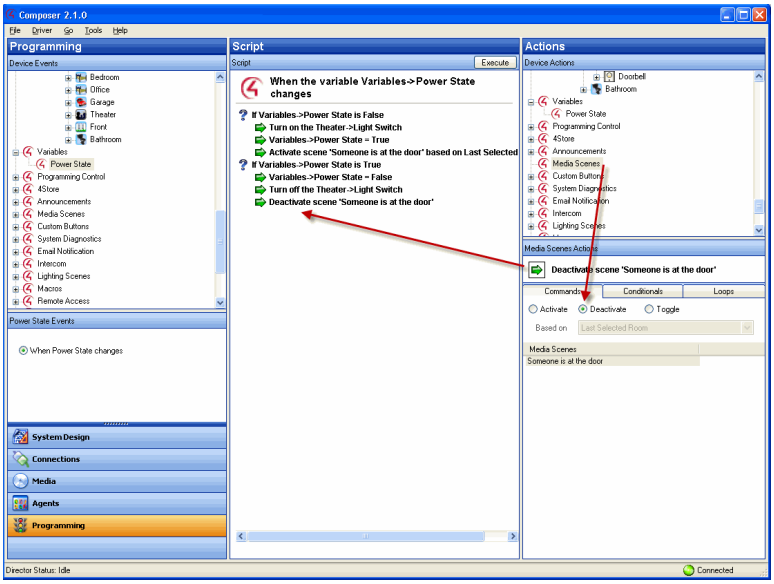


19. Click the **Commands** tab.
20. In the Commands tab, click **Set to True**, and drag the **green arrow** on top of the **blue question mark** in the **Script** pane to make it the first subset item of the first conditional.
21. In the Device Actions pane, select **Light Switch**.
22. Click the **Commands** tab.
23. In the Commands tab, click **On**, and drag the **green arrow** on top of the **blue question mark** in the **Script** pane to make it the *second* subset item of the *first* conditional.

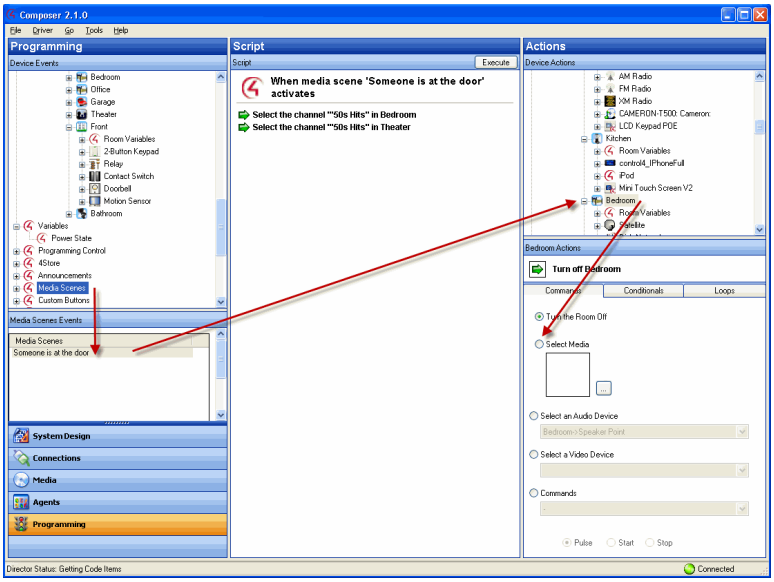


24. In the project tree and in the Device Actions pane, select **Media Scenes**.
25. Click the **Commands** tab.

26. Click **Activate** in the Commands tab, and drag the **green arrow** on top of the **blue question mark** in the **Script** pane to make it *third* subset item of the *first* conditional.
27. In the project tree and in the Device Actions pane under Variables, select **Power State**.
28. Click the **Conditionals** tab.
29. In the Conditionals tab, click **Is True**, and drag the **blue question mark** to the **Script** pane.
30. Click the **Commands** tab.
31. In the Commands tab, click **Set to False**, and drag the **green arrow** on top of the **blue question mark** in the **Script** pane to make it the *first* subset item of the *second* conditional.
32. In the project tree and in the Device Actions pane, select **Light Switch**.
33. Click the **Commands** tab.
34. In the Commands tab, click **Off**, and drag the **green arrow** on top of the **blue question mark** in the **Script** pane to make it the *second* subset item of the *second* conditional.
35. In the project tree and in the Device Actions pane, select **Media Scenes**.
36. In the Commands tab, click **Deactivate**, and drag the **green arrow** on top of the **blue question mark** in the **Script** pane to make it the *third* subset item of the *second* conditional.



37. In the project tree and in the Device Events pane, select **Media Scenes** and select the event **Someone is at the Door**.
38. In the project tree and in the Device Actions pane, select the **Bedroom** object. (Repeat the next four steps for the Theater.)
39. Click the **Commands** tab.
40. In the Commands tab, click **Select Media**.



41. In the dialogue that appears, select the album and song that you want to play when **Someone is at the Door** executes. In this example, Rhapsody's '50s Hits' is used. Click **OK**.
42. Drag the **green arrow** to the **Script** pane.
43. Repeat steps 37-41 for the **Theater**.
44. In the project tree and in the Device Events pane, select **Motion Sensor** under **Front**, and select the event **When the Motion Sensor senses motion**.

Add the Boolean Values

45. In the project tree and in the Device Actions pane, click to expand Variables, and select **Power State**.
46. In the Conditionals tab, click **Is False**, and drag the **blue question mark** to the **Script** pane (this is the *third* conditional).
47. In the Commands tab, click **Set to True**, and drag the **green arrow** on top of the **blue question mark** to make it the *first* subset of the *third* conditional.
48. In the project tree and in the Device Events pane, select the event **When the Motion Sensor stops sensing motion**.
49. In the project tree and in the Device Actions pane, click to expand Variables, and select **Power State**.
50. In the Conditionals tab, click **Is True**, and drag the **blue question mark** to the **Script** pane.
51. In the Commands tab, click **Set to False**, and drag the **green arrow** on top of the **blue question mark** to make it the *second* subset of the *third* conditional.
52. Click **Execute**.

Results: The porch light turns on and plays a song in the bedroom and theater whenever the motion sensor senses motion at the front door.

Example: Using a custom number variable in an agent

Use the Programming view to create custom variables in an agent using a numeric value.

In this example, program one keypad button to toggle between turning on the Theater Dimmer and the Theater Switch.

Prerequisites

The following devices are added and identified in the project:

- Controller
- Dimmer (Theater)
- Light Switch (Theater)
- 6-Button Keypad

To program using a custom variable agent number:

1. Start Composer Pro and connect to a Director.
2. Click **System Design**. Make sure the project has the correct devices and rooms.
3. Click **Connections**. Make sure the connections are correct.

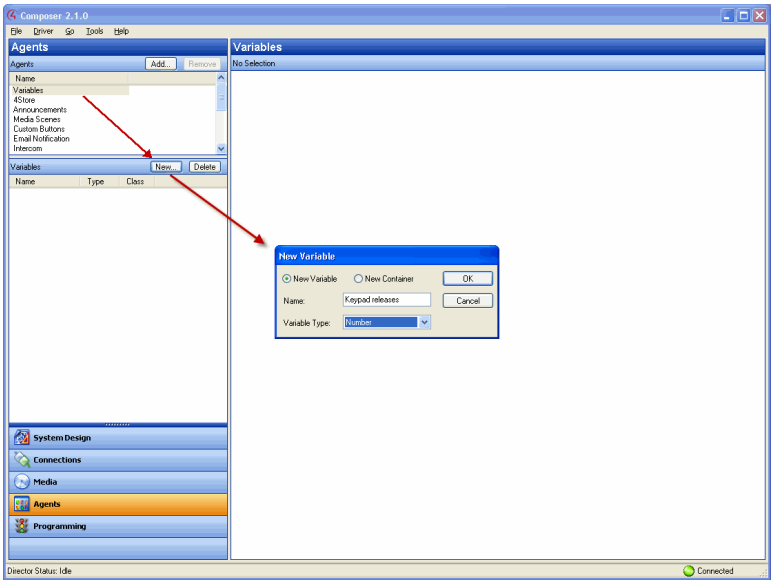
Note: In the Network tab, ensure that the controller, dimmer (Theater), switch (Theater), and 6-Button Keypad have a network address.

Add a new variable

4. Click **Agents**.
5. Select **Variables**. The Variable Agents view appears.
6. Click **New**.
7. On the dialog that appears, do the following:

1. Select **New Variable**.
2. Name the variable **Keypad releases**.
3. Use the **Variable Type** pull-down and select **Number**.

4. Click **OK**.



8. In the Variables pane, select the variable **Keypad_releases**. The available variables for your devices appear in the right pane.
9. Enter the value as **0** (zero).

Create an event

10. Click **Programming**.
11. In the project tree and in the Device Events pane, select **6 Button Keypad**.
12. Click **Button 1** on the 6 Button Keypad.
13. Select **Press** for the event. The event appears at the top of the Script pane.

Create the actions

14. In the Actions pane, scroll down to view the agents.
15. Click to expand **Variables**.
16. Select **Keypad_releases**.
17. In the Commands tab, select the following to add 1 to the present value:
    1. Select the radio button by the plus (**+**) sign.
    2. Ensure the plus sign is selected.
    3. Select **1** (one).

    The action appears in the Actions pane.
18. Drag the **green arrow** icon to the **Script** pane.

Create the conditionals

19. Click the **Conditionals** tab.
    1. Select the **Is** radio button option.
    2. Select the equals (**=**) sign.

3. Select **1** (one).

20. Drag the **blue question mark** below the previous command in the **Script** pane. This places the conditional Action parallel to the previous Action command.

21. In the Actions pane, select **Theater Dimmer**.

22. In the Command tab, select **On**. The action command appears in the Actions pane.

23. Drag the **green arrow** to the **blue question mark** in the **Script** pane to make it a subset of this conditional item.

24. In the Actions pane, scroll down to Variables and select **Keypad_presses**.

25. Click the **Conditional** tab.

1. Select the **Is** radio button option.

2. Select equals (**=**) sign.

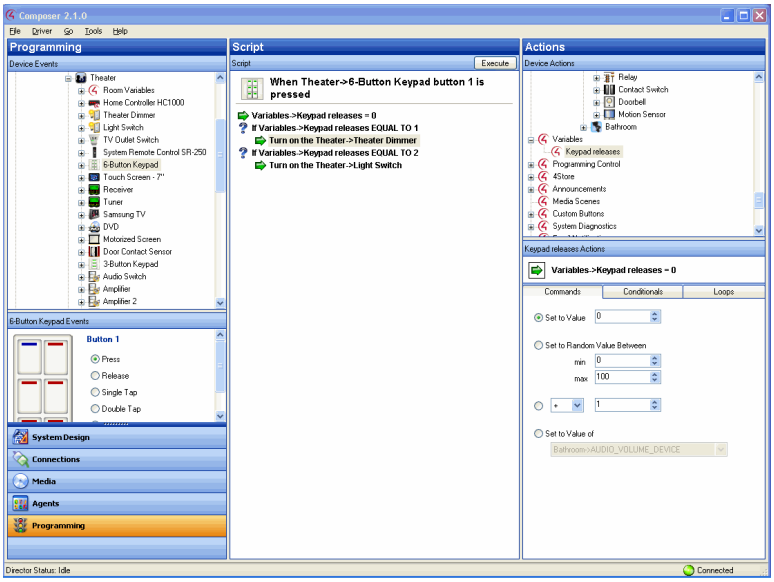
3. Select **2** (two).

26. Drag the **blue question mark** to the blank space under the previous Action command. This places the conditional Action parallel to the previous Action conditional.

27. In the Actions pane, select **Light Switch**.

28. In the Command tab, select **On**. The action command appears in the Actions pane.

29. Drag the **green arrow** to the **blue question mark** in the **Script** pane to make it a subset of the conditional item.



30. In the Actions pane, scroll down to the agents.

31. In the Variable agent, select the **Keypad_presses** variable.

32. In the Commands tab, select the following:

1. Select the **Set to Value** radio button.

2. Set the value to **0** (zero). The Action command appears in the Actions pane.

33. Drag the **green arrow** icon to the **blue question mark** icon in the **Script** pane to make it a *second* subset of the conditional.
34. Click **Execute**.

Results: Press **Button 1** on the 6-Button Keypad to toggle between turning on the Theater dimmer and the light switch.

Example: Using a custom string variable in an agent

Use the Programming view to create custom variables in an agent using a numeric value. The steps in this section are for more advanced users of Composer Pro.

In this example, program Button 4 on a Keypad to toggle through four playlists.

> Note: This procedure is relatively complicated to create. Review the steps first to understand how the conditionals work.

Prerequisites

The following items are added and identified in the project:

- Controller
- 6-Button Keypad
- 4 Playlists: Mom's Favorites, Dad's Favorites, Choral Music, and Kid's Music

To program using a custom variable agent string:

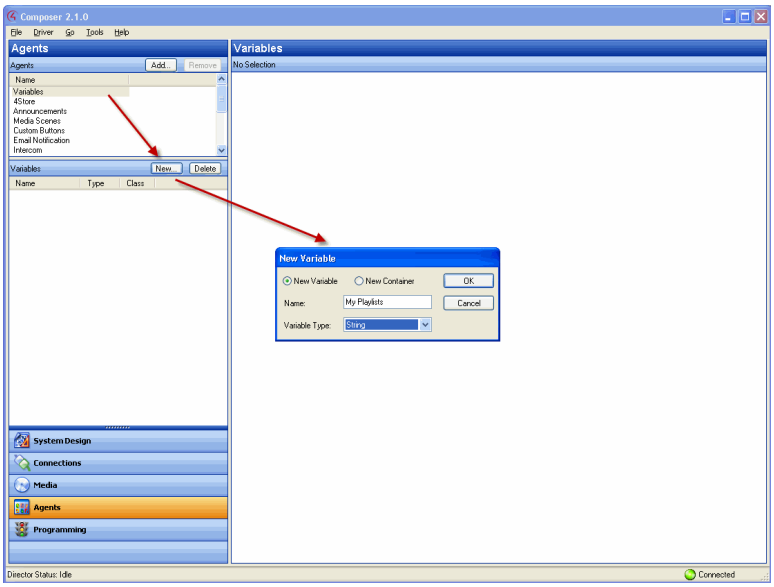
1. Start Composer Pro and connect to a Director.
2. Click System Design. Make sure the project has the correct devices and rooms.
3. Click Connections. Make sure the connections are correct.

Note: In the Network tab, ensure that the controller and the 6-Button Keypad have an address.

Add a new variable

1. Click Agents.
2. Select Variables. The Variables agent list appears.
3. Click New.
4. On the dialog that appears, do the following:
3. Select New Variable, and name the variable My Playlists.

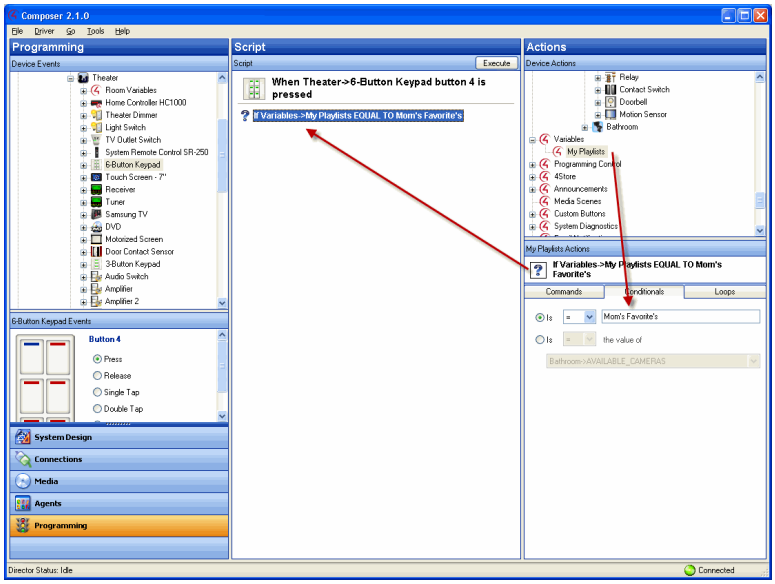
4. In Variable Type, use the pull-down menu to select String, and click OK.



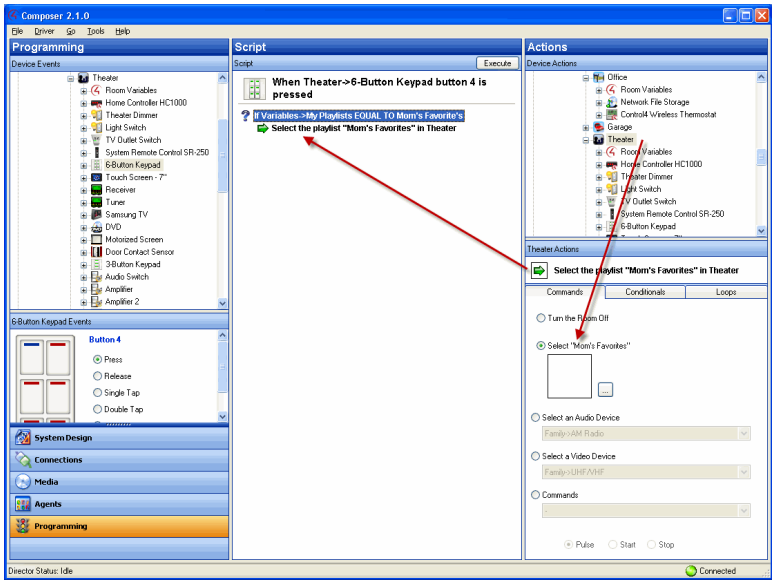
Set up a 'Mom's Favorites' playlist in the theater

1. Click Programming.
2. In Programming select the 6 Button Keypad in the Theater from the Device Events pane.
3. In 6-Button Keypad Events, click Button 4 on the Keypad.
4. In the Device Actions pane, scroll down and click to expand Variables.
5. Select My Playlists.
6. In the My Playlists Actions pane, click the Conditionals tab, and enter the name of a playlist; for example, Mom's Favorites.

7. Drag the first blue question mark to the Script pane.



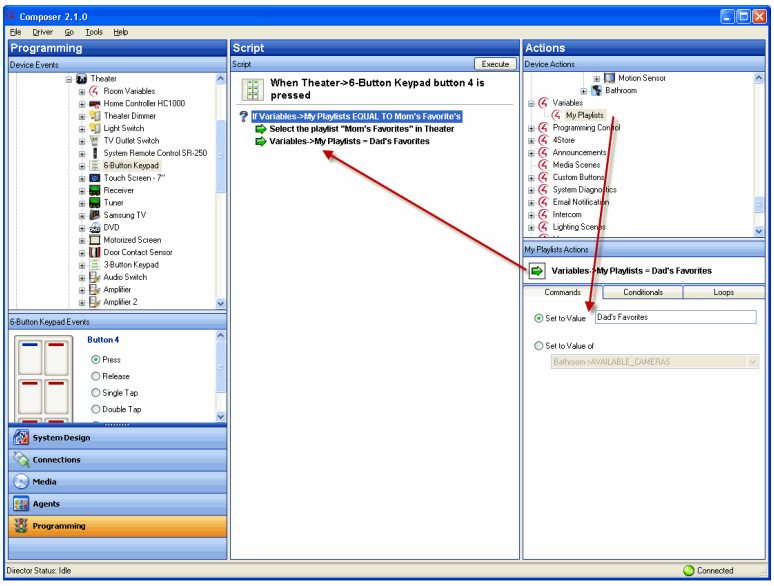
8. In Device Actions, select the Theater room object.
9. In Theater Actions, select Select Media.
10. In the window that pops up, select Playlists, Mom's Favorites, and then click OK.
11. Drag the green arrow icon on top of the first blue question mark in the Script pane to make it the first subset of the first conditional.



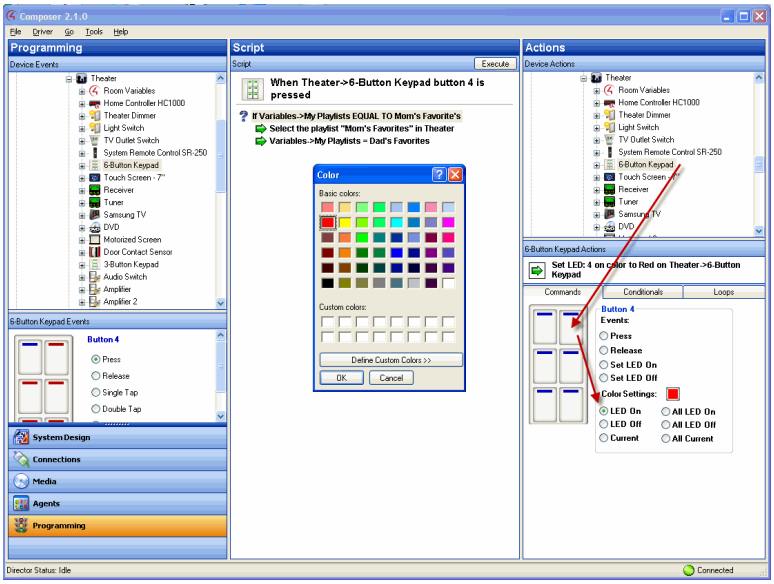
12. In Device Actions, select Variables > My Playlists.
13. In the Commands tab under My Playlists, enter the name of the next playlist that you'd like to play; for example, Dad's Favorites.

14. Drag the green arrow on top of the first blue question mark to the Script pane to make it a second subset of the first conditional.

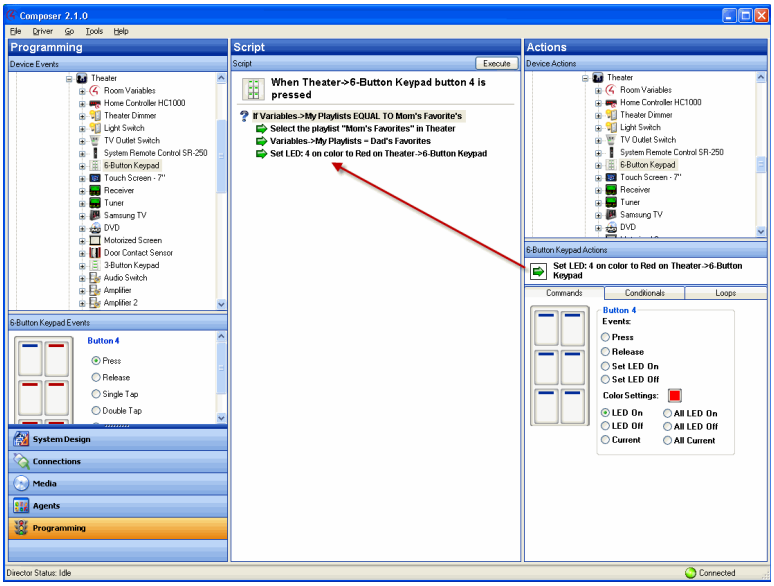
    The next time the button on the keypad is pressed, the value of the variable will be Dad's Favorites, and will then cue that playlist in the Theater.



15. In Device Actions, scroll up and select the 6 Button Keypad in the Theater.
16. In 6 Button Keypad Actions, click Button 4.
17. Under Color Settings select LED On.
18. Click the square of color to select the color you want Button 4's LED to be when Mom's Favorites plays. Select the color in the menu that pops up (in this example: green), and click OK.



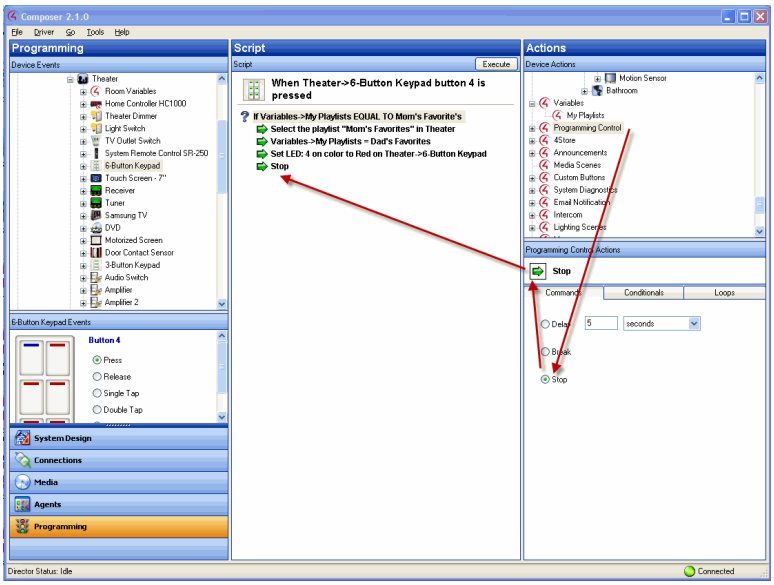
19. Drag the green arrow on top of the first blue question mark in the Script pane to make it a third subset of the first conditional.



20. In Device Actions, scroll down and select Programming Control.
21. In the Programming Control Actions, select the Stop radio button.
22. Drag the green arrow on top of the first blue question mark in the Script pane to make it a fourth subset of the first conditional.

Note: It is important to add a Stop command here so that when the conditional is fulfilled, the programming will not continue. Because of the way this programming is set up when it's finished, without the stop, the button on the Keypad will always select the

last playlist in the script.



Set up a ‘Dad's Favorites’ playlist

1. In Device Actions, select My Playlists again.
2. In the Conditionals tab, next to ‘Is’ enter Dad’s Favorites in the text box.
3. Drag the second blue question mark to the Script pane.
4. In Device Actions, select the Theater.
5. In Theater Actions, select Select Media.
6. In the window that pops up, select Playlists, Dad’s Favorites, and then click OK.
7. Drag the green arrow on top of the second blue question mark in the Script pane to make it the first subset of the second conditional.

Set up a ‘Kid's Room’ playlist

1. In Device Actions, select My Playlists.
2. In the Commands tab under My Playlist Actions, enter the name of the next playlist that you’d like to play; for example, Kid’s Music.
3. Drag the green arrow on top of the second blue question mark in the Script pane to make it a second subset of the second conditional.
4. In Device Actions, select the 6 Button Keypad in the Theater.
5. In 6 Button Keypad Actions, click on Button 4. Click the square of color to select the color you want Button 4’s LED to be when Kid’s Music plays. Select the color in the menu that pops up (in this example: purple), and click OK.
6. Drag the green arrow on top of the second blue question mark in the Script pane to make it a third subset of the second conditional.
7. In Device Actions, select Programming Control.
8. In the Programming Control Actions pane, select Stop.

9. Drag the green arrow on top of the second blue question mark to make it a fourth subset of the second conditional.
10. In Device Actions, select My Playlists again.
11. In the Conditionals tab, enter Kid's Music.
12. Drag the blue question mark to the Script pane to make it the third conditional.
13. In Device Actions, select the Theater room object.
14. In Theater Actions, select Select Media.
15. In the window that pops up, select Playlists, Kid's Music, and then click OK.
16. Drag the green arrow on top of the third blue question mark in the Script pane to make it the first subset of the third conditional.

Set up a 'Choral Music' playlist

1. In Device Actions, select My Playlists.
2. In the Commands tab under My Playlists, enter the name of the next playlist that you'd like to play; for example, Choral Music.
3. Drag the green arrow on top of the third blue question mark to make it a second subset item of the third conditional.
4. In Device Actions, select the 6 Button Keypad in the Theater.
5. In 6 Button Keypad Actions, click on Button 4. Click the square of color to select the color you want button 4's LED to be when Kid's Music plays. Select the color in the menu that pops up (in this example: red), and click OK.
6. Drag the green arrow on top of the third blue question mark in the Script pane to make it the third subset of the third conditional.
7. In Device Actions, select Programming Control.
8. In the Programming Control Actions, select the Stop radio button.
9. Drag the green arrow on top of the third blue question mark in the Script pane to make it a fourth subset of the third conditional.
10. In Device Actions, select My Playlists again.
11. In the Conditionals tab, enter Choral Music.
12. Drag the fourth blue question mark to the Script pane.
13. In Device Actions, select the Theater room object.
14. In Theater Actions, select the Select Media radio button.
15. In the window that pops up, select Playlists, Choral Music, and then click OK.
16. Drag the green arrow on top of the fourth blue question mark in the Script pane to make it the first subset of the fourth conditional.
17. In Device Actions, select My Playlists.
18. In the Commands tab under My Playlists, enter the name of the next playlist that you'd like to play; for example, Mom's Favorites.
19. Drag the green arrow on top of the fourth blue question mark in the Script pane to make it a second subset of the fourth conditional.
20. In Device Actions, select the 6 Button Keypad in the Theater.
21. In 6 Button Keypad Actions, click on Button 4.

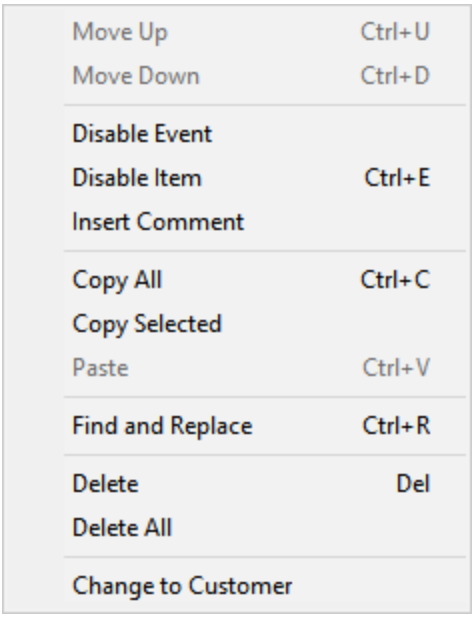
22. Click the square of color to select the color you want Button 4's LED to be when Choral Music plays. Select the color in the menu that pops up (in this example: yellow), and click OK.
23. Drag the green arrow on top of the fourth blue question mark to make it a third subset of the fourth conditional.
24. In Device Actions, select Programming Control.
25. In the Programming Control Actions, select the Stop radio button.
26. Drag the green arrow on top of the fourth blue question mark to make it a fourth subset of the fourth conditional.
27. In Device Actions, select the Theater room.
28. In Theater Actions, select Media.
29. In the window that pops up, select Playlists, Mom's Favorites, and then click OK.

    Note: You do this is because the first time the button on the Keypad is pushed, the string variable does not have a value, and nothing happens. This last command is created when none of the conditionals are fulfilled, something will play; each time the button is pushed thereafter, a conditional is fulfilled.
30. Drag the green arrow below the previous Stop command in the Script pane. It is not a subset of the previous conditionals, but a command on its own.
31. In Device Actions, select My Playlists.
32. In the Commands tab under My Playlists, enter the name of the next playlist that you'd like to play; for example, Dad's Favorites.
33. Drag the green arrow below the previous command in the Script pane.
34. In Device Actions, select the 6 Button Keypad in the Theater.
35. In 6 Button Keypad Actions, click on **Button 4**. Click the **square of color** to select the color you want Button 4's LED to be when **Mom's Favorites** plays. Select the color in the menu that pops up (in this example: green), and click **OK**.
36. Drag the green arrow below the previous command in the Script pane. You do not need a stop at this point, because the programming automatically stops at the end of the script.

Results: Press Button 4 on a 6-Button Keypad repeatedly to toggle through four playlists.

Other programming tasks

Other special programming functions can be accessed by right-clicking on an item in the *Script* pane.



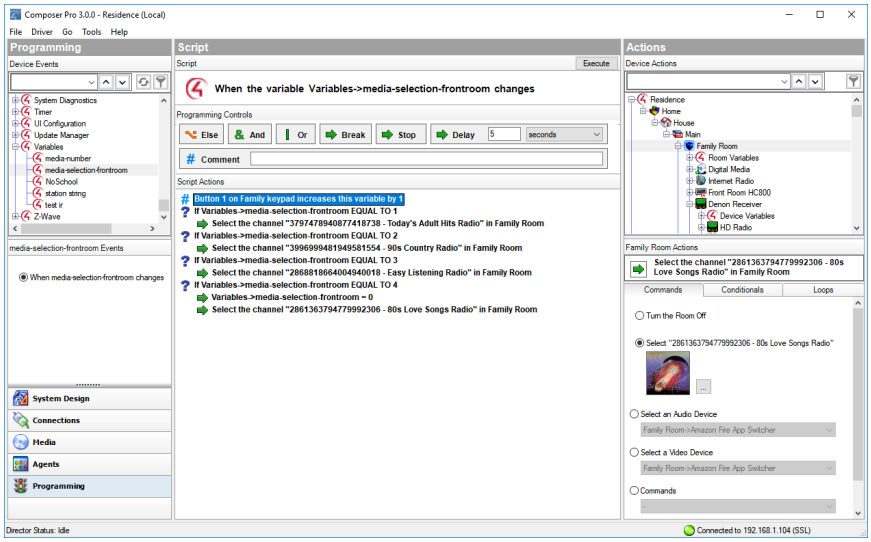
- **Move Up/Down**–Lets you move a script item up or down in the script, changing the order that the commands execute..
- **Disable/Enable Event**–Lets you disable the event and the entire programming script without having to delete the script. If the event is disabled, the text is grayed out and the only menu item is Enable Event.
- **Disable/Enable Item**–Lets you disable a single item in the script. Other items execute normally. If the item is disabled, the line of text is grayed out and the line's icon has a red x on it.
- **Insert Comment**–Lets you insert a comment into the script. See also Using Programming Comments.
- **Copy All**–Lets you copy an entire script.
- **Copy Selected**–Lets you copy selected items in a script.
- **Paste**–Lets you paste copied items into the current script.
- **Find and Replace**–Lets you find and replace elements within the script item with similar items. See Using Find and Replace.
- **Delete**–Lets you delete the selected script items. You can also delete items by pressing the Delete key.
- **Delete All**–Lets you delete the entire script.
- **Change to Customer**–Lets you change programming items to be accessible or locked out from When >> Then programming by the customer. By default, programming entered with Composer cannot be modified by the customer in When >> Then. Select **Change to Customer** to allow the customer to modify the programming in When >> Then.
- **Change to Dealer**–If the customer has entered programming in When >> Then and you want to lock out that programming from being modified in When >> Then, select **Change to Dealer** to lock the programming to Composer only.

> **Note**: Selecting **Change to Dealer** does not lock out programming from Composer HE

Using Programming Comments

The Comments programming feature lets you add comments inline with your programming to document your programming. This is useful when using advanced programming, using variables, and when multiple technicians may need to work on the project.

Example: You have a variable that is changed by a button press. You can add a comment in the code to know where the variable is being changed from..



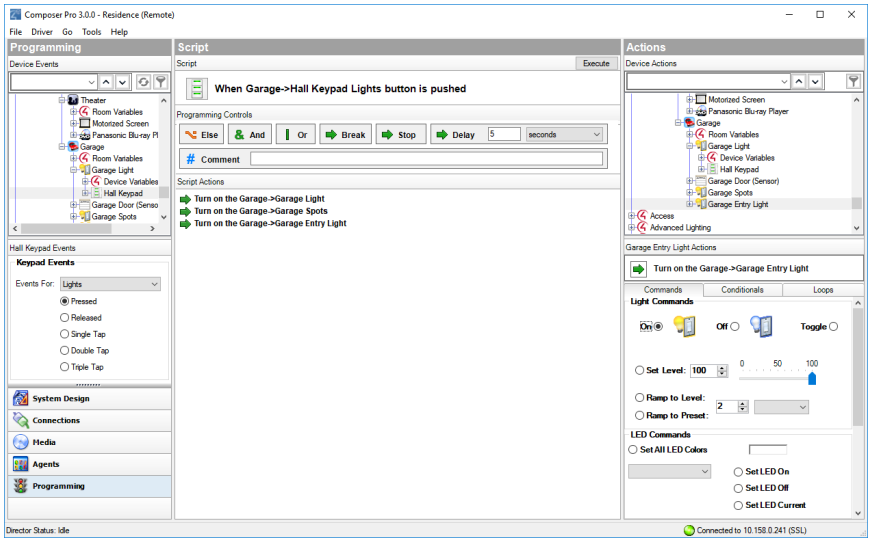
To add a comment in programming:

1. Click **Programming** and select the event in the *Device Events* pane.
2. In *Programming Controls* in the *Script* pane, enter the comment in the field next to Comment.
3. Click on **Comment** and drag the comment below into the *Script* pane. Place it anywhere in the programming script. A comment does not affect the programming.

Using Find and Replace

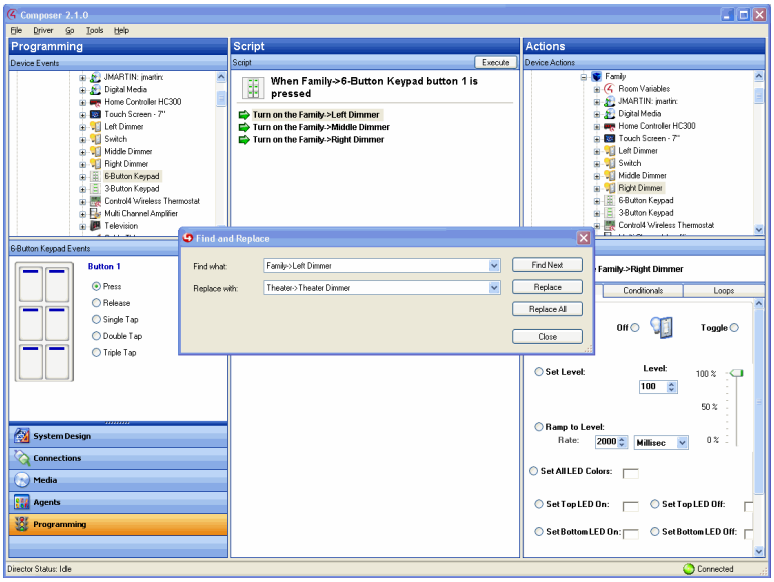
The Find and Replace programming feature lets you find one device already programmed and replace it with another.

Example: You want a button on your **Configurable Keypad** to turn on all the outside dimmers in your Control4 system. Currently, the button is programmed to turn on all the lights in your garage. Use the **Find and Replace** programming option to replace the lights with outdoor lights in your programming.



To program using the Find and Replace feature:

1. Start Composer Pro and connect to a Director.
2. Click **Programming**.
3. In the *Script* pane, right-click and select **Find and Replace**. A *Find and Replace* dialog appears.

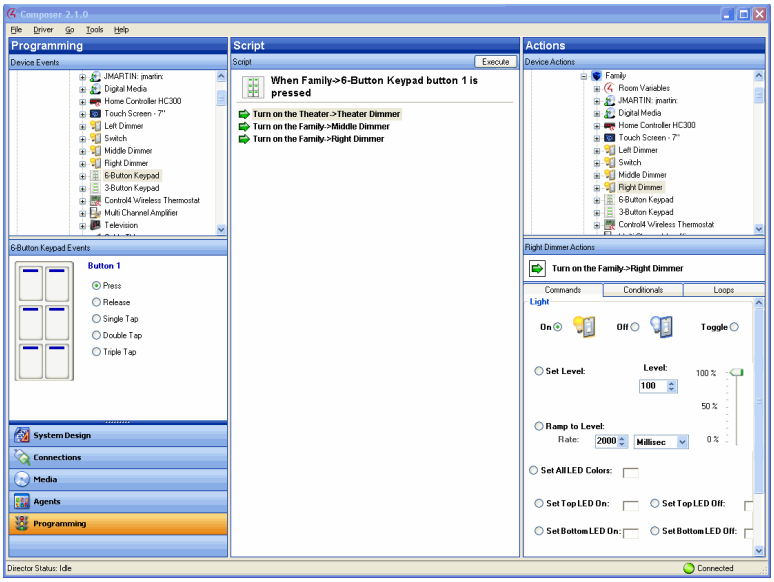


4. Replace the programming device object with the one you want.

   Find: **Family** > **Left Dimmer**

   Replace with: **Theater** > **Theater Dimmer**

5. Click **Replace**. The statement in the Script pane changes to the replacement script.



6. Repeat for each line in the Script pane.

   Find: **Family** > **Middle Dimmer**

   Replace with: **Bedroom** > **Bedroom Dimmer**

   Find: **Family** > **Right Dimmer**

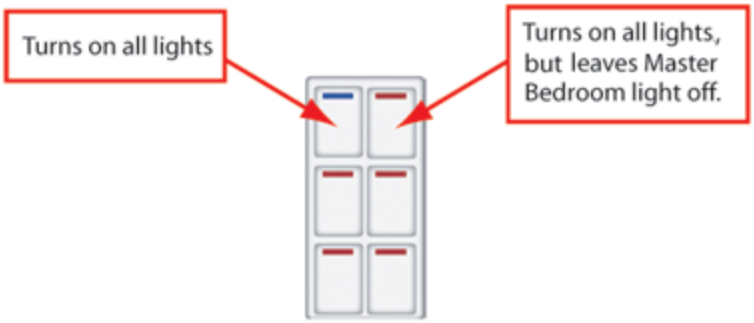
   Replace with: **Front** > **Front Dimmer**

When you complete this process, the script reflects that you have changed all the lights in your Control4 system to dimmers.

Using Copy and Paste

The copy and paste programming feature lets you copy the programming you configure from one device and paste it to another device. By creating the same command, loop, or conditional for a device, you can copy it for use in another programming script.

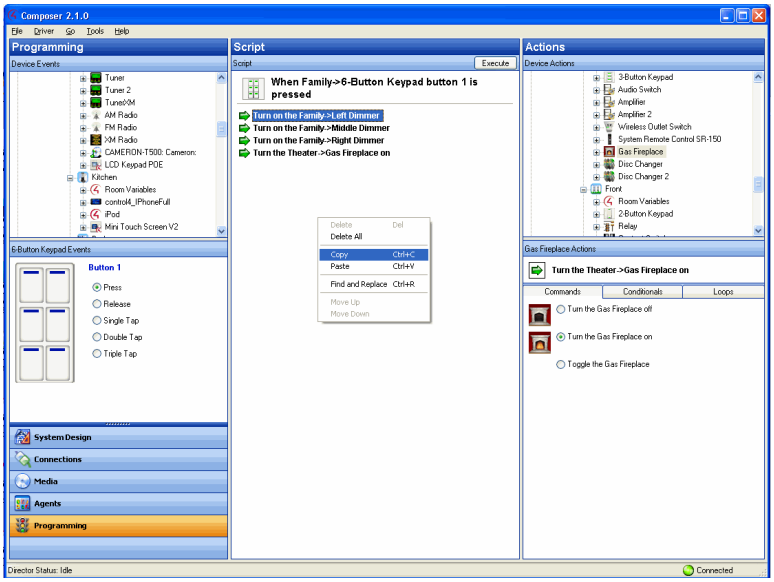
Example: You want all of the lights in the Control4 system to turn on by pressing **Button 1** on the **6-button keypad**. When you press **Button 4**, you want to turn all the lights on in the system except in the **Bedroom**. In this example, you can copy the first set of actions into the second set and not include the Master Bedroom.



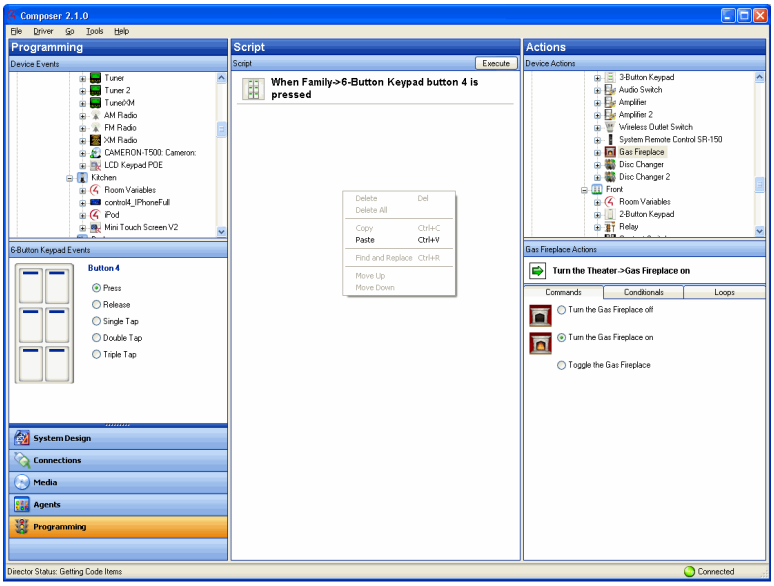
To program the 6-button keypad:

1. Start Composer Pro and connect to a Director.
2. Click **System Design**.
3. Ensure that you have the following devices added and connected to the Control4 system:
   - Controller
   - Bedroom Dimmer
   - 6-Button Keypad
4. Click **Programming**.
5. Select **6-Button Keypad** in the project tree of the Device Events pane.
6. In 6-Button Keypad Events, push **Button 1**, and select the **Press** radio button.
7. In the Device Actions pane, scroll down and select **Dimmer**.
8. In the Dimmer Actions pane, click the **Commands** tab, and click the **On** radio button.
9. Drag the Dimmer Action **green arrow** to the Script pane.
10. Repeat Steps 1 through 9 for all the lights in your system. This includes the Light Switch and Dimmer in the Theater and the Dimmer in the Bedroom.
11. Move to the Script pane, right-click, then select **Copy** from the options. This

automatically copies all arrow statements in the pane.



12. Click **Button 4** in the 6-Button Keypad Events pane, and then select the **Press** radio button.
13. Right-click in the Script pane, and select **Paste**. The programming of the lights shows up in the Script pane for Button 4.



You have completed Copy and Paste Programming. Now you can edit the Button 4 Script as needed.

Example: You can remove the Bedroom Dimmer from the Button 4 Script, so when you push Button 1 all the lights in the system come on; and when you push Button 4, all the lights come on except for the dimmer in the bedroom.

Tip: This feature is very useful when programming complex loops and conditionals.

Customizing Navigators

Use this chapter to learn how to:

- Set up screen savers
- Hide and view device availability

Overview

Use the Control4® system Navigator interface on your Navigator to make adjustments to the Navigator you're using.

> Tip: You or your customer can customize pages in the touch screens, Control4 apps, or on-screen Navigators also. See the Control4 System User Guide for information.

Setting up screen savers

Setting up the photo screen saver

Use the Agent and Media views to set up a photo Screen Saver agent to view photos from the touch screens, Control4 apps, or on-screen Navigators. In OS 2.1 and later, you can use a single photo to display on all of your Navigators. If you change the interval on one Navigator, it will change all of them.

Prerequisites

Have one of the following storage types available before you copy the photos. You will need to set up one or more of them later when you add your photos.

> Note: In some cases, the Control4 system may take a few minutes to recognize the device.

- Controller–If the controller has no storage, add and connect a device that contains storage for your photos; for example a USB drive or Network File Share (see Step 6 in the next section).
- **USB Drive**–Ensure that the USB drive is attached to the controller. When you insert the USB drive, it will appear in the project tree in the same room as the controller.
- **Network File Share**–Ensure that the Network File Share object is added to the project tree and connected (see the steps to do this later in this procedure). Ensure that you have access to the Network File Share, that you have a valid Username, Password, and Workgroup, and that you can identify the network location (you will need to add the path).

To display photos as screen savers on the Navigators:

1. Start Composer Pro and connect to a Director.
2. Click **Agents**.
3. (First time only.) From the Agents view > Agents pane, click **Add** to add the agent to the project.
4. From the Available Agents dialog, select the **Screen Saver** agent, and click **OK**.

Note: If Screen Saver already appears in the Agents pane, it has already been added. Go to the next step. If not, see "Example: Program Using the Screen Saver Agent."

5. In the Agents pane, select **Screen Saver**.
6. From the storage location list, use the drop-down menu to select the location where you will save your photos for use on the Navigators (controller, CBM Flash Disk: USB drive, or Network File Storage, etc.).

Notes:

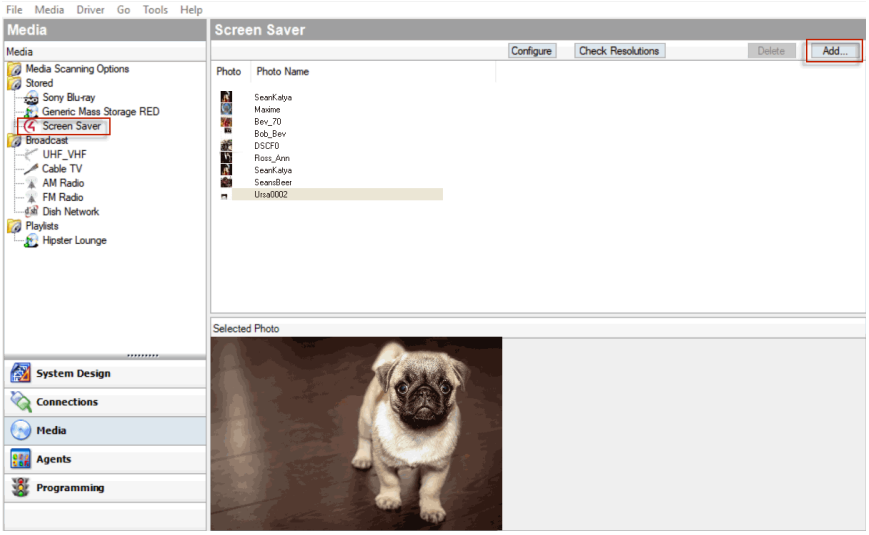
- If the storage option that you want does not appear in the list, disconnect from Director and reconnect.
- At any given time, only one storage location can be set as the photo Screen Saver source.
- **CBM Flash Disk** (USB drive)—If you inserted the USB drive in the controller earlier, the CBM Flash Disk option appears in the list.
- **Network File Storage**—If you select **Network File Storage**, specify where the Control4 system needs to go to copy the files. Click **System Design** and select the **Network File Storage** icon in the project tree (you will have to add it from the Items pane). In the Properties pane, type the **Username**, **Password**, and **Workgroup**, and then browse to the network location. Click **Connect**.

7. Click the **Media** view, and select **Screen Saver**.
8. Click **Configure** in the Screen Saver pane, set the location to copy the files to (for display in the Navigators), and click **OK**.

Note: If you didn't select a storage location in Step 6, an error message appears. Click **OK**, and then click **Configure** to set the location.

9. In the Screen Saver pane, click **Add**. In the My Pictures dialog, **browse** to the photos you want to copy to the storage location, select them, and click **Open**. The files will be copied to the storage location you specified in Step 8, and a folder may be created for you using the Control4 name (**Example**: Control4 pictures).

Note: When media is added (copied) to the storage device, it is pre-scaled to the resolution for all of the Navigators. Control4 preserves the aspect ratio of the original image, and boxes the extra space with bars for any given screen size.



10. In Composer Pro, click **Tools** > **Refresh the Navigators** to display the copied photos.
11. To activate the Screen Saver in each Navigator (on-screen, touch screen, or Control4 app), do the following:

1. Go to Info > Config > Screen Saver (on the system remote control) or More > Settings > Screen Saver.
2. Enable the **Custom** option, and then select the **Photo Screen Saver** option along with any other screen saver option you want to include. For photos only, check the **Photo** option. See "Setting up a custom screen saver" to display the photos on the Navigator or see the Control4 System User Guide.

Setting up a custom screen saver

Use the Control4 Navigator to create a custom screen saver to view on touch screens, Control4 apps, or on-screen Navigators.

> Note: This task must be completed on a Navigator. Either the Installer or homeowner can set this up. The Custom Screen Saver option lets users mix and match available screen saver options, including the option to use stored photos.

Prerequisites

Before setting up a custom screen saver, photos must be available for viewing from the Navigator. See "Setting up the photo screen saver."

To set up a custom screen saver:

1. From the main menu on an on-screen Navigator, Control4 app, or touch screen press **More** > **Settings** > **Screen Saver** or **Info** > **Config** > **Screen Saver** on a system remote control.
2. In Screen Saver, press the drop-down arrow, and press **Custom**.
3. In **Turn on**, press the drop-down arrow, and press an option to enable the screen saver.
4. Press **Settings**.
5. Press to select one or more of the following options:
   - Media
   - Time
   - Date
   - Temp
   - Photo
   - Shuffle
6. Press **Done**.
7. (Optional) Press **Preview** to test the settings.

To set up a custom screen saver in the touch screens, Control4 apps, or on-screen Navigators for OS 2.0 and later, see the Control4 System User Guide for details.

Programming the screen saver sleep mode

Use the Programming view to schedule a Screen Saver mode change, for example, a 'Go To Bed' mode during sleep hours.

1. In Programming, select Navigator **actions**.
2. Create a **Scheduled** Event (such as 'Go To Bed'). See " Using and Programming with Agents " for details.
3. Add the following script:

"Set the screen saver mode on the [graphical navigator device] to Blank."

"Turn the screen saver on after [time interval] on the [graphical navigator device]."

Changing the time on a Navigator screen saver

Use the Control4 Composer Pro System Design view to change screen saver date, time or time zone.

To change the time on a *Navigator* screen saver:

1. Start Composer Pro and connect to a Director.
2. Click **System Design**.
3. In System Design, click the **Properties** tab.
4. Use the **Date & Time** drop-down boxes to modify the time and date.

Date–To change the **Date** (month, date, or year), click the drop-down arrow for a calendar to appear. Click the **left** or **right** arrows to select the month, and then select the day.

Time—To change **Time** (hour, minute, second), click the **up** or **down** arrows to the appropriate time in hours, minutes, or seconds.

Tip: An easy way to change the hour, minute, or second is to highlight the hour, minute, or second number, and then type the new number over the old one.

Time zone–To change the **Time Zone**, at the Timezone box, click **Edit**. Select the time zone from the drop-down menu, and click **OK**.

Hiding device availability

Use the System Design view to hide a device from view in a Navigator. In OS 2.3.0 or later, you may find the Access agent useful for device availability. See " Using and Programming with Agents " for details.

> Example: Set availability so that the touch screen in the Bedroom cannot control music in the Theater.

Prerequisites

Ensure that the following devices are added and identified to the network:

- Controller
- Digital audio
- Navigator

To hide a device so others cannot see it:

1. Start Composer Pro and connect to a Director.
2. Click **System Design**.
3. In System Design and in the project tree, select **Bedroom**.
4. Go to the **Navigator** tab in the Properties tab.
5. Select **Music** in the Menu box, and then click **Modify**.
6. Select **Digital Audio** in the Theater, click **Hide**, and then click **OK**.

Viewing device availability in navigators

Use the System Design view to change the order of devices to view. This task is useful if you have a lot of media devices, and some are used more frequently than others.

> Example: Change the order of a Tuner to appear in a Navigator before the Receiver.

> Tips: (1) In OS 2.2 and later, you can use **Shift+Click** or **Ctrl+Click** to add or remove devices. (2) In OS 2.3.0 or later, you may find the Access agent useful for device availability. See " Using and Programming with Agents " for details.

Prerequisites

Ensure that the following devices are added and identified to the network:

- Controller
- Digital audio
- Navigator

To enable a *device* to be viewed in a specific order in a Navigator:

1. Start Composer Pro and connect to a Director.
2. Click **System Design**.
3. In System Design, select **Theater**.
4. Go to the **Navigator** tab in the Properties tab.
5. Select **Radio** under Menu, and then click **Modify**.
6. Click **Tuner**, and then click **Move Up**.
7. Click **OK**.

Creating drivers

Use this chapter to learn how to:

- Use the DriverEditor
- Use the Driver Wizard
- Create IR controller drivers
- Create serial-controlled drivers
- Configure Composer Pro properties
- Create two-way drivers
- Export a driver

Creating and managing drivers

Use this chapter to learn how to:

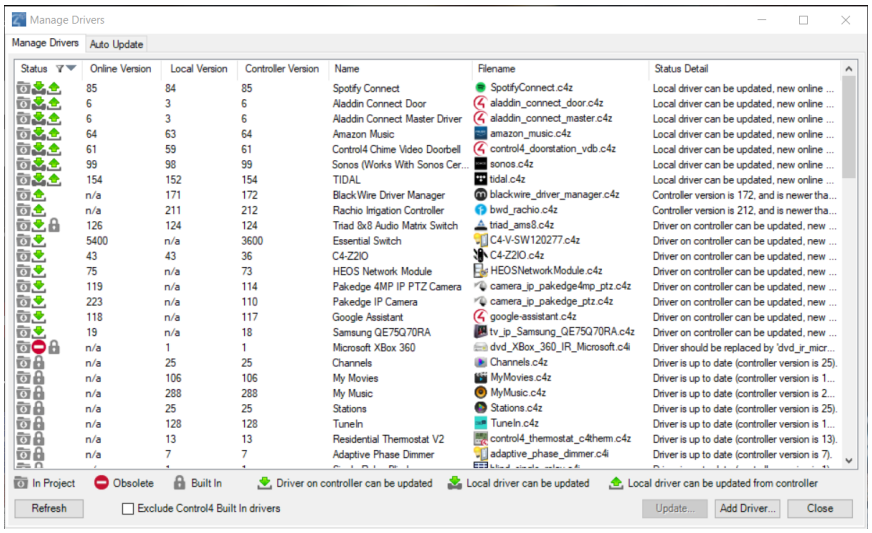
- Use Driver Manager to update and manage drivers
- Use the DriverEditor
- Use the Driver Wizard
- Create IR controller drivers
- Create serial-controlled drivers
- Configure Composer Pro properties
- Create two-way drivers
- Export a driver

Using the Manage Drivers window

Use the Manage Drivers window in Composer Pro to view driver versions, manage drivers, update drivers and schedule updates.

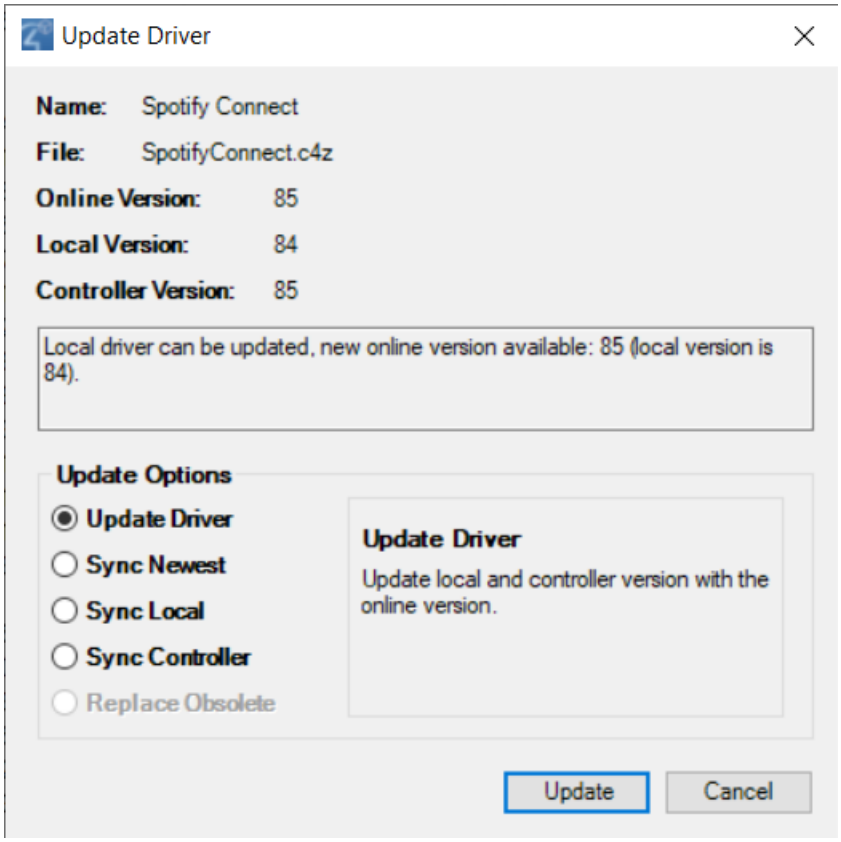
To manage drivers using the Manage Drivers window:

1. Select **Drivers** > **Manage Drivers**.



2. Click on a driver in the window and click **Update...**

3. The Update Driver window shows the driver name, file name, version info and update options.



4. Select an option in **Update Options** to update, sync, or replace the driver. You can choose between:

a. **Update Driver**—Update the local (computer) version and controller version of the driver with the latest online version.

b. **Sync Newest**—Synchronize the newest driver from either the local computer or the project.

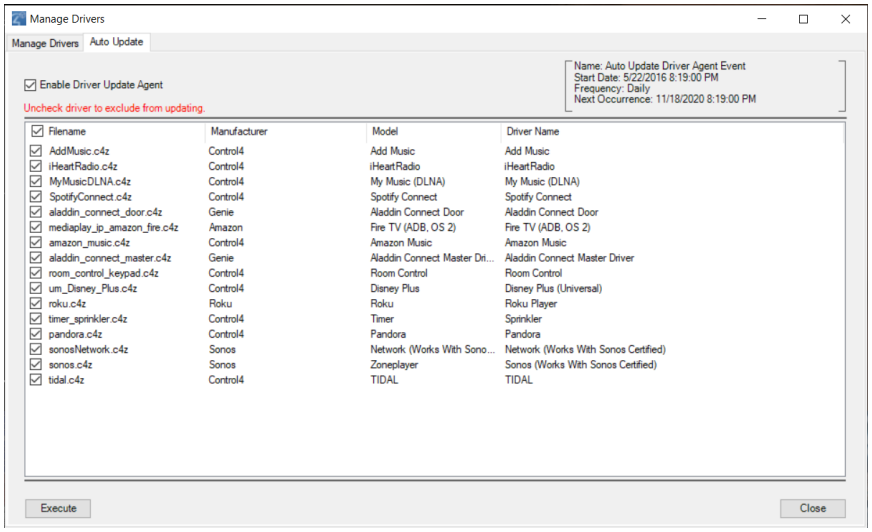
c. **Sync Local**—Synchronize the driver on the local computer to the controller.

d. **Sync Controller**—Synchronize the driver on the controller to the local computer.

e. **Replace Obselete**—Replaces an obsolete driver with a recommended replacement driver.

To configure automatic driver updates:

1. Select **Drivers** > **Manage Drivers** and click on the **Auto Update** tab.



2. Check the box next to **Enable Driver Update Agent** to enable automatic driver updates.
3. Check the box next to each driver to enable or disable automatic updates for that driver.
4. Click on **Execute** to run the automatic driver updates now.

> Tip: To configure the schedule when the automatic driver update runs, use the **Scheduler** agent to configure the update event, by default the **Auto Update Driver Agent Event**.

Creating device drivers

To complete device support using Composer Pro® for a Control4 system, every device requires a corresponding driver.

To add a device to the Control4 system that does not have a supporting driver, use the built-in Driver Creation Wizard in Composer Pro or Driver Editor to create the driver prior to adding the device.

Overview

Why create a device driver?

A hardware driver is a small piece of software that allows a computer program to communicate with a specific device, for example a controller, in the Control4 system. Every device in the Control4 system requires a driver, and that driver must be added to the project tree in Composer Pro. Some devices do not have existing drivers in the Composer Pro driver database, or the drivers there cannot control a device. In that case, a new device driver needs to be created. Control4 provides the means if anyone wants to develop drivers for their products.

> Example: A computer may use a printer driver to send a print order to a printer. Every controllable device uses codes that represent commands on that device. To control the device, you must capture or enter these codes in the driver.

> Example: An IR-controlled CD player's commands are Play, Stop, Pause, etc. Using the Driver Wizard and controller hardware along with the manufacturer's remote control supplied with the equipment, you can capture these codes and build a working driver using the codes. Serial-based devices are also supported; you can enter the serial codes to the Driver Wizard manually.

> Tip: Each driver consists of a collection of files. One of those files is a configuration file, which is an XML file referred to as a config data file or.c4i file. This file provides specific IR, serial, or connection codes that are pertinent to supporting a device model on the Control4 system. In the default Composer Pro installation, these files are located on your PC at: c:\program files\control4\Composerxxx\drivers\virtual.

Guidelines for creating device drivers

The most important information you need to know before you begin to create your own Control4 device driver is to understand how your devices work. After that, you can use the Driver Wizard and/or the DriverWorks SDK or DriverEditor to create your own drivers. Contact Control4 Technical Support for details.

> IMPORTANT! Before you begin, check the manufacturer's documentation to learn about the codes or customized macros required to support your device, and understand the inputs and outputs that your device supports and other details about the device as needed.

For best results, understand the following concepts and guidelines:

- **Supported commands and inputs/outputs of the device**–Prior to starting the Driver Wizard, have a basic understanding of the device.

- Discrete **versus** toggle—In the Driver Wizard, the term 'discrete' indicates a direct setting rather than a toggle option between settings. For example, a receiver might have 'discrete input select,' which lets you select the input directly (DVD) rather than using a toggle button that cycles through all the inputs (DVD, VCR, TV), such as Input Toggle.
- IR **codes versus macros**—In the Driver Wizard, some IR codes complete the needed command; however, to complete the commands, you may need a macro (a sequence of codes).
- **Adding all options for** AV **connections**—When adding AV connections, select all possible options for the device so all options are available for selection.
- **Power management options**—A variety of supported Power-Management options are available to choose from, but the optimal method depends on the device. When no other option works, use the **Assume the Device is Always On** option, and leave it up to the user to ensure manually that the device is on. See "Guidelines for defining power management."
- **Adding commands and custom commands**—The Driver Wizard supports a set of default commands for each device type, such as Television, VCR, DVD, etc. If a command you need does not appear on the Default Command list, click **Add** and use the pull-down menu to look for the command. You can also add custom commands if necessary.
- **Driver Wizard screens vary for device types**—Because different devices, such as televisions, VCRs, and DVDs have different functionality, the Driver Wizard steps you through different questions as appropriate for that device type, and there are pre-defined generic Device Types that have a common set of commands with varying capabilities that you can use as a base. The Driver Wizard prompts you to select the appropriate commands from these basic commands, as well as identify any additional capabilities that the particular device is able to perform.

  Example: All televisions have Up/Down channel and Up/Down volume commands, so these basic commands are already included in the generic TV device type. However, not all televisions have direct channel selection, where you can select a channel by pressing a sequence of numbered keys.

- **Creating or editing multi-featured device drivers**—You can create only combination types that are listed in the Create New Driver wizard. Control4 recommends that you start with an existing driver in the Online Database, add it to your Local Database, and then edit it as needed to meet the new device-driver need. Be patient. You may need to change IR codes if a code doesn't work with your device.
- DriverWorks can be used to create 2-way drivers for AV and non-AV devices. It requires some programming skills, however, but leverages the Lua-embeddable scripting language, a powerful, fast, and light-weight (when compared to other scripting languages). See "Creating a 2-way serial or TCP/IP-controlled driver."

  Tip: When a device driver is created, you may want to distribute it to multiple projects on different computers. To do this, copy the driver file from the default install directory: **C:\Program Files\Control4**Composerxxx**\Drivers\Virtual** to the same directory on the other computers.

  This action makes this driver file available to all the projects stored on that computer. Driver files are named by device type, protocol, manufacturer, and model with a **.c4i** extension.

  Example: tv_ir_samsung_tx-p1430.c4i.

- **DriverEditor**—This tool is designed to assist the dealer or driver developer in creating and maintaining their drivers for use with the Control4 system.

Using DriverEditor

The DriverEditor is an advanced tool that allows DriverWorks drivers to be developed. This tool is free and is available at: http://update.control4.com/DriverEditor/DriverEditor_Installer.exe. You can find information about DriverEditor in the Forums under 'DriverWorks.'

Features:

- Edit AV_GEN or DriverWorks drivers from the same tool.
- Switching from AV_GEN to DriverWorks requires only a menu choice.
- No more wondering if the XML portion of the driver is correct. All choices are validated.
- Capture IR codes from Control4 controllers or enters them manually in pronto hex format or by IR code (s).
- Create/maintain all aspects of IR macros.
- Commands/notifications are filtered by proxies in the driver.
- Capabilities are filtered by proxies in the driver.
- DriverWorks editor with API auto-complete for Control4 APIs and Lua script APIs.
- DriverWorks editor with Call tips and syntax highlighting.
- DriverWorks debugging from within DriverEditor. No longer writing in one application and debugging in another.
- Monitor output from up to four different debug windows.
- All DriverWorks documentation is accessible from within DriverEditor with context searching.
- Updating from within DriverEditor.

Using the Driver Wizard

Use the Driver Wizard in Composer Pro to create device drivers for your devices.

The Driver Wizard is a basic level driver developer tool for IR and one-way serial control. Instructions for using this wizard are detailed in this section.

To start the Driver Wizard from the Driver menu:

1. Select **Create New Driver**. See "Composer Pro menu options" in Composer Pro Getting Started for details. The Driver Creation Wizard (or Driver Wizard) lets you add device support to the system, including support for:

   - **Infrared (IR)-Controlled** — Devices that are controlled using wireless remotes. Commands are sent via pulses of infrared light to the device.

     Examples of IR-controlled devices: receivers, televisions, plasma screens, projectors, DVD/CD players, DVD/CD changers, VCRs, satellites, cable boxes, DVRs, tuners, audio/video switches, amplifiers, blinds, and other specialized equipment.

   - **Serial-Controlled**—Devices are controlled via a serial connection (RS-232, RS-422, or RS-485) to the controller hardware.

     Examples of serial-controlled devices: projectors, multi-disc DVD changers, and other serial-controlled devices.

Limitations of the Driver Wizard

The Driver Wizard is not designed or intended to create drivers in the following situations:

- **Bi-directional drivers**–Bi-directional drivers provide enhanced support for two-way communication between the device and the controller. Custom bi-directional drivers are available for some devices (check the Online Database). The Driver Wizard does not create bi-directional drivers. If you need to create a custom bi-directional driver, ask your Control4 Sales Representative about the Control4 software development kit (SDK) program.
- **Logical Calculations**–Some devices require logical calculations. The Driver Wizard can provide only limited support for devices that require logical calculations.
- **Relays and Contacts**–The Driver Wizard is not designed to create drivers for relays and contacts. If you cannot find a specific driver for your contact or relay device, use the generic drivers provided in the Online Database.
- **Serial Codes**–To create serial drivers, get the serial codes from the manufacturer's documentation. Control4 collects the serial codes in a database from the manufacturers/dealers that obtain these codes. If you need serial codes, contact Control4 Technical Support or contact the manufacturer directly.

Editing a driver using the Driver Wizard

To make changes to a driver located in your local driver database that is NOT fully-configured and connected in a project, you can use the Composer Pro **Driver menu** > **Edit Existing Driver** option. This option lets you modify and update the driver options in the Driver Wizard.

To edit a driver using Driver Wizard:

1. Start Composer Pro and connect to a Director.

2. From the Driver menu, select **Edit Existing Driver**.
3. In the next screen, select the driver type, such as **VCR**.
4. Select the **Model** type.
5. Select a section, and click **next** to advance to the screen that you want to edit.
6. Edit the screens or recapture the codes as needed. See “Creating IR-Controlled Drivers” for details.
7. When you’ve edited the driver, click **finish**, and click **next**.

IMPORTANT! If you edit any inputs or outputs of the driver after editing a driver, you must remove the driver from the project, add it to the project again from the Search tab, and then make the connections.

Verifying the IR codes using the Driver Wizard

Use the Edit Existing Driver menu option to verify your IR codes for the Control4 system.

> Note: Make sure the controller is connected to the device via IR, and that all necessary connections are made.

To verify driver IR codes using the Driver Wizard:

1. Start Composer Pro and connect to a Director.
2. From the Driver menu, select **Edit Existing Driver**.
3. Select the driver type, such as **VCR**.
4. Select the **Codes** section.
5. Click **next** to advance to the screen for the first IR code listed.
6. On the left side, use the scrollbar to select the code you want to test, and click **Emit** to verify the function of the specific IR code.
7. Edit or recapture the codes as necessary.
8. After you’ve edited the driver, click **finish**.
9. Click **next** to save your changes.

> IMPORTANT! If you edit any inputs or outputs of the driver after editing a driver, you must remove the driver from the project, add it to the project again from the Search tab, and make any necessary connections.

> Tip: To exit the Driver Wizard without saving your changes, click **x** at the top right of the screen.

Power management

Guidelines for defining power management

Power Management options are modifiable using the Driver Wizard in Composer Pro which is accessible through the Driver menu during creation or driver edits.



Editing power management options

If resetting the connections is not required, you can sometimes edit the Power Management options from the Composer Pro project tree.

To edit the Power Management options:

1. Right-click the device.
2. Click **Edit Driver**.

1. If the Edit Driver option does not appear, edit this driver from the Driver menu.
2. Remove and then add the device to the project tree again.

Options on this screen include:

- **Assume the device is always on**–Select this option if the device is always on, or if the device is turned on and off by pressing the same button. For example, the system has no way to acknowledge if a television is on when the television uses a toggle button (such as buttons labeled 'Power' or 'On/Off') instead of discrete (separate) On and Off buttons.

  Note: Use this option for Power Management of a multi-zoned receiver.

- **Send Toggle Codes**–This option is selected automatically when you check the **Has Power** feedback box. You can select the other available options, such as **Macro**. Click **next** to return to this page and reset the page to this option.

- **Use discrete on/off codes**–Select this option if the device features a separate button for On and Off versus one button used to cycle between On and Off.
- **Use On/Off macros**–Use this option to control power on the device by using a sequence of button presses to determine the power state of the device.

  Example: You know the state of most DVD players by sending a **Play** command, because Play typically changes the power state to On.

  You can set up a macro that

  - Sends a Play command.
  - Sends a power toggle command to turn the device off.
  - Sends a power toggle command to turn the device on.

  The system can determine with certainty that the power state is On.

- Has Power Feedback.

- **Video sense** loop—Check this option if you want the system to determine (using a Composite video connection) whether a device is On or Off based on whether a video signal is present.
- Contact **sensor (power sensing)**—Check this option if the device is plugged into a Wireless Outlet Switch and is configured as a Contact Sensor.
- **Control power directly (power control)**—Check this option if the device is plugged into a Wireless Outlet Switch and is configured as a relay. With this option, you can set two delays to accommodate special devices.

For more information, see " Configure a Wireless Outlet Switch V2."

Configuring assignable inputs and outputs

In a driver, you want to create all possible inputs and outputs on a device. However, a driver can only support the physical inputs and outputs that exist on that device, so don't attempt to create inputs or outputs that do not exist on the device.

Changing power management options

Use the Power Management options in the Composer Pro Driver menu to change power for a Control4 system.

To change the Power Management option of a driver, you can edit the driver to provide a different Power Management option. After editing a driver, you may need to add the driver to the project and set up the necessary connections.

To change Power Management options in a driver:

1. Start Composer Pro and connect to a Director.
2. From the Driver menu, select **Edit Existing Driver**.
3. Select the driver type, such as **VCR**.
4. Select the Manufacturer type, such as **Mitsubishi**.
5. Select the **Model** type.

6. On the Power Management screen, change the **Power Management** option.

   Example: To change the Power Management option, check **Has power feedback**, and then select the **Video sense** loop option.

7. After you edit the driver, click **finish**, and click **next**.

   Example: The Video Sense loop requires a Control connection. A control Video Sense connection has been added to the DVD driver.

8. Make any necessary connections to configure the new Power Management option.

   Example: With the Video Sense Loop Power Management option, connect the Control connection.

1. From Connections, select **Control/**AV > **DVD**.
2. From the top pane in Control Connections, drag the **Video Sensor** connection to a **Video Sense Loop** connection on the controller.

IR-controlled drivers

Creating IR-controlled drivers

This section provides instructions for creating and testing a driver using the Control4 Driver Wizard in Composer Pro. Depending on the device type, the Driver Wizard asks you questions for the driver you are creating. The Driver Wizard varies between device types because different device types have different functions. Follow the Driver Wizard screens until your driver is created.

Prerequisites

For the IR Learning capability to work, you must be connected to a Director and have a controller added to your project.

To use the Driver Wizard:

1. Start Composer Pro and connect to a Director.
2. From the Driver menu, select **Create New Driver**.
3. From the list, select the type of driver you want to create, and click **ok**.
4. Enter the Device Information.
1. Fill out the requested information, such as device's Manufacturer, Model number, and the name of the Driver Creator (whoever is creating the driver), and click **next**.
2. Check whether the device is IR or Serial controlled, select the appropriate options, and click **next**.
3. Define the type of power management, audio parameters, and device properties there are, and click **next**.
4. Identify the relevant commands, add custom commands as necessary, and click **next**.
5. Capture, paste, or enter the device codes using one of the following:
    - **IR**—Use the manufacturer's remote and the controller's IR Learning capability for capturing IR commands.
    - **Serial**—Enter the codes.
6. Create and identify the input and output connection options for the device, and click **next**.
7. Create macros if necessary.
8. Find your driver, add it to the project, and test it. See Composer Pro Getting Started for details about how to do this.

Guidelines for capturing IR codes

For best results when capturing IR codes for a Control4 system, follow the on-screen prompts in the Driver Wizard.

Follow these guidelines:

- **Point your manufacturer's remote control** directly at the IR window located just below the dial on the front panel of your controller hardware (e.g., EA-3). Avoid aiming the beam at an angle, and keep the beam in the same axis as the IR window.
- **While capturing the first few codes**, the controller begins to recognize the frequency. Note that a message about 'an alternate frequency' might display. This is normal, and it means that the controller is adjusting to the remote frequency.

To help ensure a successful capture:

1. **Hold the manufacturer's remote** at a distance of approximately 6" away from the controller hardware, and then press the button requested.
2. **When prompted, press the button again** to confirm the code captured. You are prompted a third, fourth, and possibly a fifth time to press each of the first few buttons.
3. **If another device in the room emits IR**, such as a bi-directional IR device, block the IR so it does not interfere with IR capture.
4. **The process of capturing IR codes is very sensitive to light**, such as sunlight and fluorescent lights. If it is not working properly, turn off the lights, close the drapes or blinds, or cover the physical hardware so that the light cannot interrupt the capturing of codes.
5. When capturing IR codes, press and release the remote button in one second.

Note: Do not press and hold for long periods (longer than three seconds). Doing so increases repeat counts. Typical repeat counts are between three and five seconds.

6. **When capturing IR codes, look for a green light to turn on and off** on the controller hardware. Also, watch the Driver Wizard screen; it changes the steps to indicate that codes are captured.
7. **Avoid IR interference** from your laptop by disabling or powering off the IR devices.

After successfully capturing a few codes:

1. **Hold the manufacturer's remote** at a distance approximately 8" - 12" (about 20 – 30 cm), and then press the next button requested.
2. **When prompted, press the button again** to confirm the code captured. Most buttons are confirmed with the second button press. You may be prompted repeatedly to confirm the code captured, including:

   If the remote uses alternative codes—Some manufacturers provide alternate codes or a second code to differentiate between two distinct button presses, such as '1' and then '1' again for Channel '11.' Some remotes have a different code for each '1.'

   If an incorrect button was pressed, or if there was interference during the IR capture—If you press the wrong button for a code or there was some interference during IR capture, the system may sense this and ask for a different code or request the same code again. If you test the code, and it doesn't work, try to capture it again.

   If you pressed a button longer than three seconds.

To disable the devices from the laptop's Control Panel:

1. Select **Wireless Link**.
2. Click the **Hardware** tab, and click **Properties**.
3. Ensure that any IR devices are disabled.
4. After capturing the codes, enable the IR devices again.

When the system has finished capturing codes for a device, the Driver Wizard moves to the Input/Output category.

Creating an IR television driver

This section provides an example for creating an IR television driver using the Control4 Driver Wizard in Composer Pro. The example uses the Samsung TX-P1430 television; let's create a driver for it.

The major steps are:

1. Create an IR-Controlled Television.
2. Select the Volume and Other Properties for IR.
3. Indicate How Power Is Handled for IR.
4. Identify the Commands that the Device Supports.
5. Capture the Device Codes for IR.
6. Identify the Input/Output Connections.
7. Define the RF/Antenna and Connection Type.
8. Define the Set Channel Macro.
   - See "Add the IR driver to the project tree."
   - See "Connect the devices for IR control."

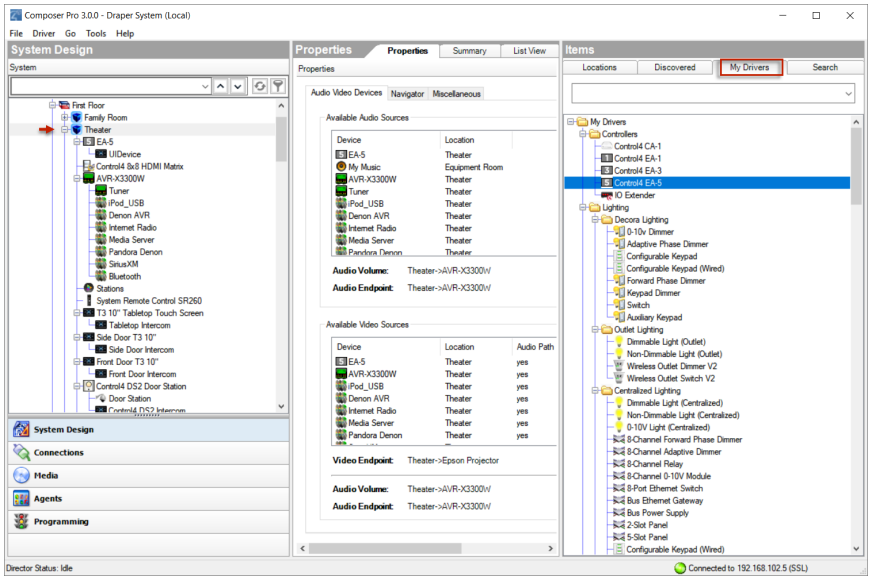
Conditions

- The Samsung TV is using IR for device control as an example.
- There is not a discrete power on/off option, so you cannot control the power; the control system needs to assume this device is always on.
- As with most TVs, there is Discrete Channel Selection; and the TV can provide audio output.
- The TV does not have discrete volume control, but it does have mute toggle capability.

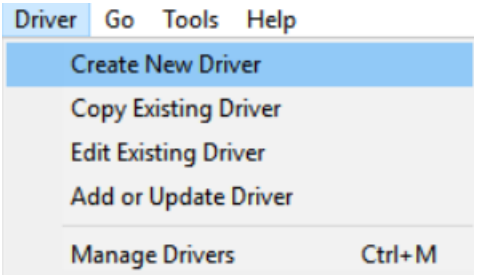
To create an IR-controlled television using the Samsung TXP1430:

1. Start Composer Pro and connect to a Director.
2. Ensure that you add a controller to your project (e.g., EA-5). This should be the first device added.
3. To add a controller:

1. Select the **room** (such as Theater) where the controller is installed.
2. Click the **My Drivers** tab.
3. Under Controllers, double-click a **Controller** (e.g., EA-5). This adds the controller and the Digital Audio object that resides on the controller to the project tree.



4. In the Connections view, **identify** the controller you just added.
4. Start the Driver Wizard. From the Driver menu, select **Create New Driver**.



5. Select the device driver you want to create, and click **ok**.



6. Enter the information for the driver you are creating, such as device's Manufacturer, Model number, and name of Driver Creator, and then click **next**.

   The Created, Modified, and Copyright information is automatically generated.

   - **Manufacturer**: Samsung.
   - **Model**: TX-P1430.
   - **Device Creator**: ACME Integrators.

7. Under **How is this device controlled?** select the **IR** radio button to indicate that this television is controlled with an IR device, check **Direct Connect** if applicable (if IR codes are running through a direct cable, such as S-link), and then click **next**.

Select the Volume and other properties

8. Under Volume Properties, select the volume properties for this device, and click **next**.
   - Select **Audio**.
   - Select **Mute**.
   - Leave the other options as they are.

9. Select the properties that apply to this device, and then click **next**.

   Options for this screen include:

   - Select **Discrete Input Selection**—This television has this capability and indicates that a television has the ability to select inputs directly. On the television's remote you can select Video 1, Video 2, or Video 3 using three

different buttons rather than one toggle button that toggles to each selection.

- Do not select **Discrete Channel Selection**—This television does not have this capability and indicates that the television has the ability to select channels directly. On the remote you can select a "discrete" channel by clicking **05** rather than toggling through channels by clicking the **Channel Up** and **Channel Down** buttons.

Indicate how power is handled for IR

10. Determine how power is handled for the device:
    - For the Samsung TX-P1430 television driver, select **Assume device is always on**.
    - For a description of each option, see "Guidelines for defining power management" to help with a selection.
11. Click **next**.

Identify the commands that the device supports

12. De-select the default commands not relevant to the device, add any custom commands (additional buttons) required, and then click **next**.
    - Deselect **Cancel**.
    - Deselect **Info**.
    - Deselect **TV/Video**.

Capture the device codes for IR

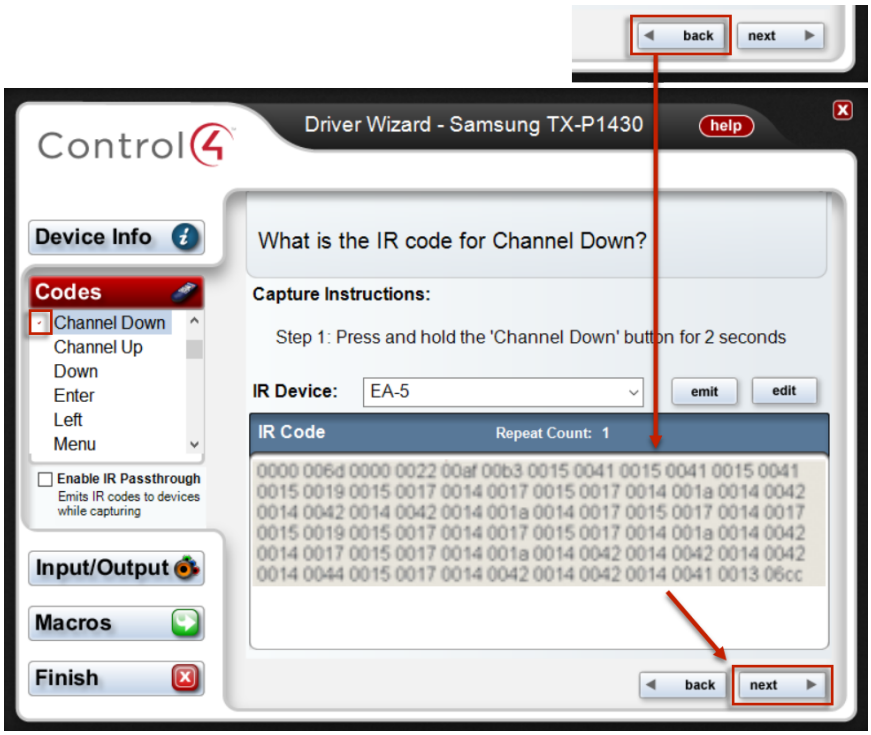
13. Capture the device codes using the manufacturer's remote and the controller's IR Learning capability. Follow the guidelines listed in " Guidelines for capturing IR codes" and the on-screen instructions.

Use the Samsung TX-P1430 television remote control to capture the codes by pointing the remote directly at the IR window on the controller.



When a code has been captured, Composer Pro puts a check next to the captured code in the Codes list, and selects the next code to be captured. When you capture all the codes, Driver Wizard automatically moves you to the next section: 'Input/Output.'

(Optional) After you capture a code, if you want to view the code, click **back**. You can also edit and emit the code from this screen.



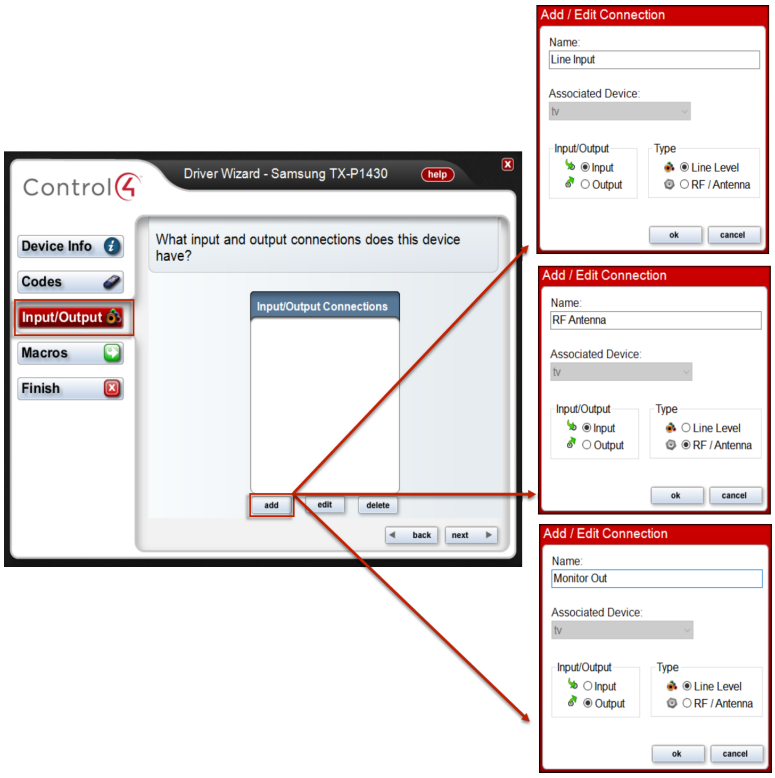
14. When you are finished, click **next**.

    Note: Sometimes a device can have alternative patterns. In this case, multiple codes show up on the screen.

15. Read the television manufacturer's documentation to find out the necessary inputs/outputs.

Identify the input/output connections

16. Click **Add** to identify the Input/Output connections on the television, and then click **ok**.
17. For the Samsung TX-P1430 television driver, add the following inputs:
    - **Line Input**—Select Input and Line Level type.
    - **RF Antenna**—Select Input and RF/Antenna type.
    - **Monitor Out**—Select Output and Line Level type.



The inputs appear in the Input/Output Connections window.

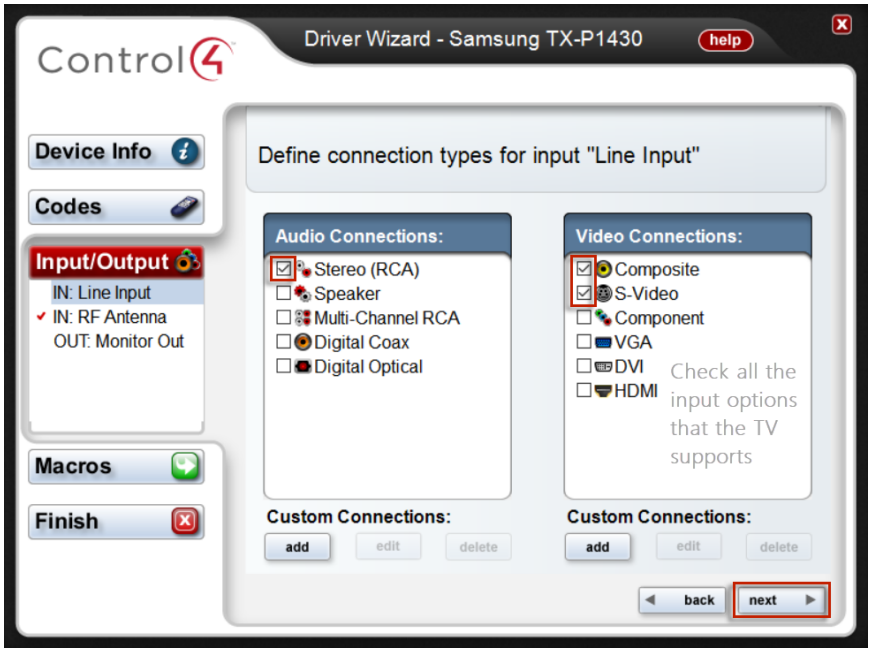
18. When the Input/Output Connections list is completed, click **next**.



19. Define the connection types for Inputs/Outputs, and then click **next**.

    For the Samsung TX-P1430 television driver, define the Line Input:

- Under Audio Connections, select **Stereo (RCA)**.
- Under Video Connections, select **Composite and S-Video**.



Define the RF antenna and connection type

20. Define the RF/Antenna type on the input RF Antenna, and then click **next**.

    For the Samsung TX-P1430 television driver, select the **UHF/VHF** radio button.

21. Define the connection type for output Monitor Out, and then click **next**.

    - Under Audio Connections, select **Speaker**.
    - Under Video Connections, select **Composite and S-Video**.

Define the Set Channel macro

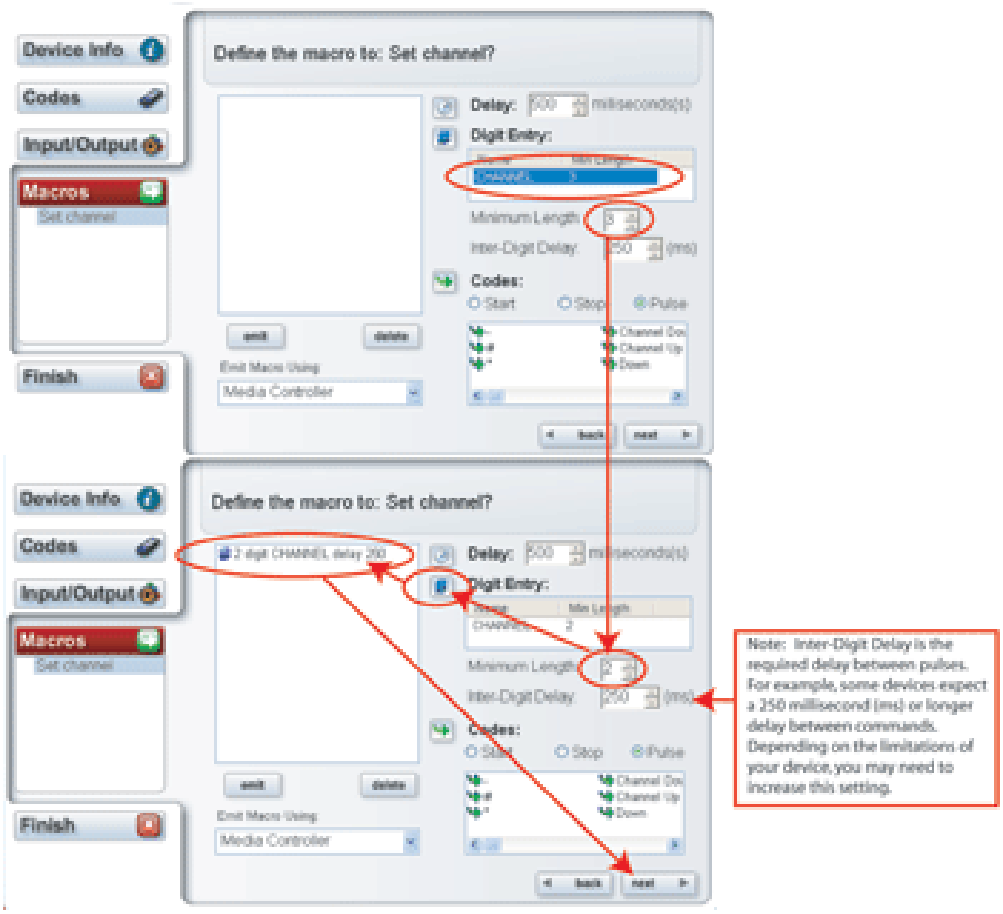
22. Define a Set Channel macro to set the number of digits required by the TV to change channel so that the system can imitate the behavior of the TV's remote. Some TVs require two numbers and others require three.

    The Samsung uses a 2-digit channel entry. Select **CHANNEL 3** and use the Minimum Length drop-down menu to change to **2**.

23. Increase the inter-digit delay (delay button code) if necessary for the TV you are adding.

24. Click the blue number sign (**#**) to move the settings into the center pane.

25. Click **next**.



26. You have completed the setup of this driver. You can view the driver you created in the **Search** tab. Click **next**, and then click **ok** to continue.

27. Next, add the new driver to the project tree and connect the device. See "Add the IR driver to the project tree" and "Connect the devices for IR control" below.

Add the IR driver to the project tree

After you create an IR driver using the Driver Wizard, you must add it to the Composer Pro project tree. This section uses the Samsung TXP1430 as an example.

To add the *IR* driver to the project tree:

1. Start Composer Pro and connect to a Director.
2. Click **System Design**.
3. In the project tree, remove the existing television driver that you previously added to the example project (if it was added).
4. From the **Search** tab, use the drop-down menu to select the Device **Type** and **Manufacturer** of the driver you just created.

Example:

1. At Device Type, select **Television**.
2. At Manufacturer, select **Samsung**.
5. Double-click the new driver to add it to the project tree. Example: Samsung TXP1430.
6. Make the connections. See "Connect the devices for IR control."

Connect the devices for IR control

After you create an IR driver using the Driver Wizard, you must add it to the Composer Pro project tree and connect the device. This section uses the Samsung TXP1430 as an example.

To connect the *IR* device:

1. Start Composer Pro and connect to a Director.
2. Click the **Connections** view to make the appropriate video, audio, and control connections or network connections (if appropriate) for the device.
3. For the Samsung TX-P1430 television driver, select **Television**.
4. Make all the necessary Control and AV connections.

Example (Television): In Connections under Theater, click **Television**. The right pane displays all of the inputs and outputs on the back of the television. For television, from the top pane:

Under Audio Video Inputs, drag the object from the top pane to the bottom pane:

1. Click **AV In** (Video–COMPOSITE), and drag it to Receiver (Output–Theater).
2. Click **AV In** (Audio–STEREO), and drag it to Receiver (Output –Theater).
3. Under Control Inputs, click **IR Sensor** (Control–IR_OUT), and drag it to Home Controller HC-500 (IR Output 1–Theater).
5. Click **System Design**, and double-click the device on the project tree.
6. Use the Device Control window to test the control of the device. For the Samsung TX-P1430 television driver, double-click **Television**.

Editing an IR-controlled receiver driver

This section takes you through an example of creating a custom IR-controlled receiver driver for a Control4 system by starting with an existing driver with multiple outputs, and then editing it.

> Example: In this example, pick the driver for the **Harman Kardon AVR-230 Receiver**. The Harman Kardon AVR-230 receiver is using IR for device control.

Conditions

- There is a discrete power on/off option.
- Like most receivers, the device uses Discrete Input Selection and Discrete Surround Selection.
- It does not have Volume Discrete Control, but it does have Mute toggle capability.
- The Harman Kardon AVR-230 Receiver has the capability of Discrete Power on/off.

To edit an existing device driver:

1. Start Composer Pro and connect to a Director.
2. Pick an existing driver in the Online Database to edit.

1. From the Driver menu, select **Manage Drivers**.
2. In the Local Driver Database screen, click **Add** to access the online database.
3. In the Search dialog box, use the drop-down menus to select the **Device Type** and **Manufacturer**, and then click **Search**.

   Example: For the Harman Kardon AVR-230 use the following information:

   - Device Type: **Receiver**.
   - Manufacturer: **Harman Kardon**.

4. In the Search Results list, select the **Model Number**.

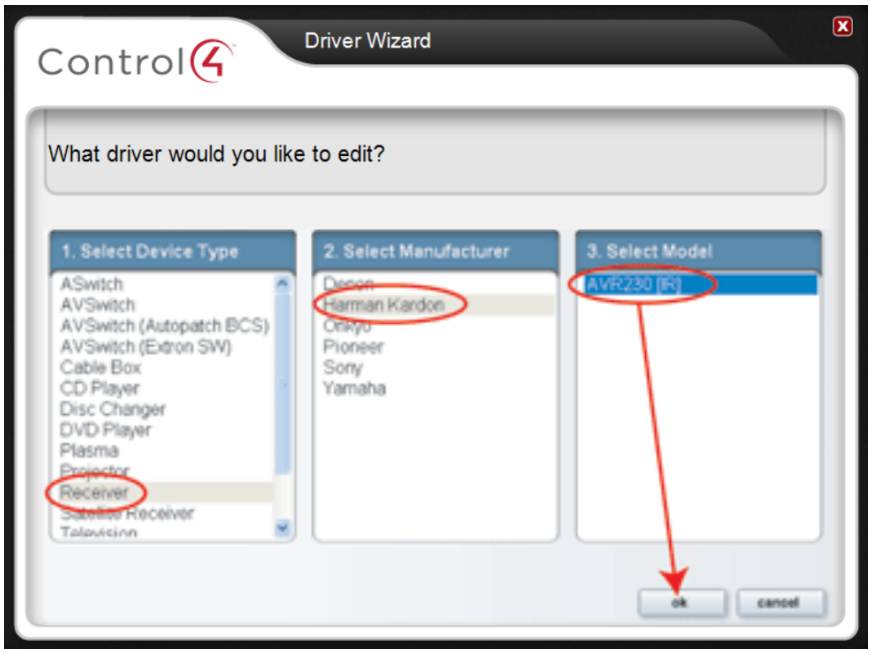
   Example: Select Harman Kardon AVR-230.

5. Click **OK** to add this driver to your local database.
6. Click **Exit**.
3. From the Driver menu, select **Edit Existing Driver** to begin editing the driver in your local database.

   Note: If you right-click on the driver in the project tree, you will edit ONLY the driver in the project and not the driver in your local database.

4. Select the **Device Type** (for example, *Receiver*) to view list of manufacturers.
5. Select the **Manufacturer** (for example, *Harmon Kardon*) to view list of model numbers.
6. Select the **Model Number** (for example, *AVR-230*).

7. Click **OK** to open the existing driver (with all of its current settings) in the Driver Wizard.



Edit the device information

8. Edit the Device Info form as needed, including Manufacturer, Model number, and Driver Creator. This should reflect how you want this driver to display in your Local Database.
9. For the Harman Kardon AVR-230 use the following information:
   - Manufacturer: **Harman Kardon**.
   - Model: **AVR-230 [IR] - Edited**.
   - Driver Creator: **ACME Integrators**.
10. Click **next**.

Indicate how the device will be controlled

11. Indicate how this device is controlled using IR or Serial. **Example**: Select IR and Direct Connect.
    - **IR**—Select this radio button if the device you want to create a driver for is IR (infrared) controlled.
    - **Direct Connect**—Check this box if your IR codes are running through a direct cable, such as S-link.
    - **Serial**—See "Creating a serial-controlled device driver" for information and example implementation.
12. Click **next**.

Edit the volume properties

13. Edit the volume properties for the Harman Kardon AVR-230:

- Check **Audio**.
- Check **Mute**, but do NOT check Discrete Control. The Harmon Kardon AVR-230 has mute toggle only.

14. Leave the other options unchecked. The Harman Kardon AVR-230 does not have these features.
15. Click **next**.

Edit the existing properties for the driver

16. Edit the existing properties for the driver as needed.
17. For the Harman Kardon AVR-230 driver:
    1. Accept the defaults of Discrete Input Selection and Discrete Surround Sound Selection.
    2. Click **Add** to add surround sound modes and in the dialog that appears type the Name, and click **ok**.
    3. Do this for each of the surround sound modes, including Dolby Pro Logic, DTS Neo 6, and THX.
18. Click **next**.

Indicate how power is handled for the device

19. For the Harman Kardon Receiver driver, select **Use discrete on/off codes**, and click **next**. See "Guidelines for defining power management" for help making a selection on this screen.
20. Click **next**.
21. De-select the commands not relevant to the device as needed, For the Harman Kardon Receiver driver, click to de-select.
    - Cancel
    - Info
    - Mute Off
    - Mute On
    - Power Toggle
    - Pulse Surround Mode
    - Recall
    - Toggle Input
    - TV/Video
22. See the diagrams that follow.

Add the commands

23. From the extended command list, add several commands: DVD and **Video 1**.
24. To add the commands from the extended command list for each individual command, click **Add**.
25. On the dialog that appears, use the drop-down menu to select the commands, and click **ok**. The new command appears in the Default Commands pane.
26. Add custom commands for surround modes, including DTS Neo 6, Dolby Pro Logic, and THX. To add custom commands for each individual command, click **Add**.

27. Enter the name of the command, and then click **ok**. The new commands appear in the Custom IR Commands pane.



28. Click **next**.

Capture the codes

29. Capture (or recapture) the device codes as needed using the manufacturer's remote and the controller's IR Learning capability. Follow the guidelines for capturing IR codes in " Guidelines for capturing IR codes."

    When a code has been captured, Composer Pro puts a check next to the captured code in the Codes list, and selects the next code to be captured. When you have captured all the codes, it automatically moves you to the next section Input/Output.

30. Use the Harman Kardon AVR-230 Receiver remote control to capture the codes by pointing it directly at the IR window on the controller.

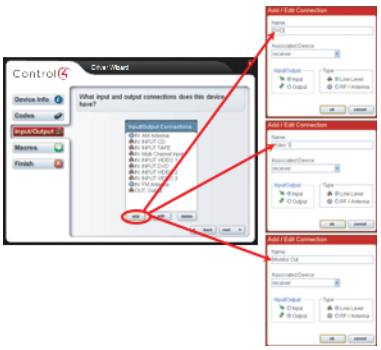
31. Use the Harman Kardon Receiver remote control to capture the codes.

Add the input and output connections

32. Add the input and output connections. For the Harman Kardon Receiver driver:

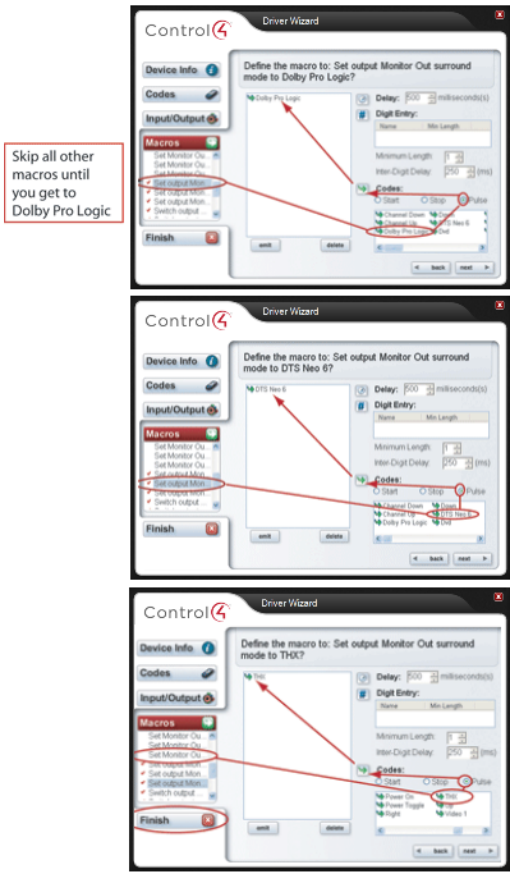
1. Add 2 inputs: **DVD** and **Video 1**.
2. Add 1 output: **Monitor Out**.

    The inputs and outputs appear as shown:



33. Click **next**.
34. Define the connection types for input **DVD**.
    1. In Audio Connections, check **Stereo**.
    2. In Video Connections, check **Composite**, **S-Video**, and **Component**.
35. Click **next**.
36. Define how you select **DVD**. Select **Code**. Use the drop-down menu, and select **DVD**.
37. Click **next**.
38. Define the connection types for input **Video 1**.
    1. In Audio Connections, check **Stereo**.
    2. In Video Connections, check **Composite**, **S-Video**, and **Component**.
39. Click **next**.
40. Define how you select **Video 1**. Select **Code**; use the drop-down menu, and select **Video 1**.
41. Click **next**.
42. Define connection types for input **Video 1**.
    1. In Audio Connections, check **Stereo**.
    2. In Video Connections, check **Composite**, **S-Video**, and **Component**.
43. Click **next**.
44. Define connection types for input Monitor Out.
    1. In Audio Connections, check **Stereo**.
    2. In Video Connections, check **Composite**, **S-Video**, and **Component**.
45. Click **next**.
46. Define three macros for Dolby Pro Logic, DTS Neo 6, and THX.
    1. Use the scrollbar to skip all the macros until you get to “Set output Mon...”
    2. Select this macro.
    3. Go to the window in the bottom right corner and find **Dolby Pro Logic**.
    4. Ensure **Pulse** is selected, and click the **green arrow**. This adds the macro to the center pane. The screen heading should read “Define the macro to: Set Monitor Out surround mode to Dolby Pro Logic?”
    5. Do the same for DTS Neo 6 and THX.

47. Click **finish**.
48. See the diagram series that follows.



49. You have now completed your driver setup. View the driver you edited in the **Search** tab.
50. Drag the new driver to the project tree.
51. Connect the video, audio and control or network connections (as appropriate) for the device.
52. Click **System Design**, and double-click the device in the project tree.
53. Use the Device Control window to test the control of the device.
54. For the Harman Kardon Receiver driver, double-click **Receiver**.

Serial-controlled device drivers

Creating a serial-controlled device driver

Create serial drivers using the Driver Wizard in Composer Pro. Instead of capturing the code as you do with IR, you enter the specific serial data that you must send for each command.

To create a serial-controlled driver:

1. Follow the same steps used in "Creating IR-controlled drivers" and select a serial-controlled driver rather than an IR-controlled driver.
2. Follow the wizard pages to create the driver.

Guidelines for entering serial codes

This section describes the different formats you can enter for the serial data of each command in Control4 serial drivers.

These formats include:

- **Basic Method to Enter Bytes**–Shows you how to enter a basic code.
- **Method to Enter Delays**–Shows you how to enter a delay code that you need to control some devices.
- **Method to Enter Parameters**–Shows you how to enter the needed parameters.
- **Method to Enter Checksums**–Shows you how to enter the checksums.

Method	Description
Basic Method to Enter Bytes	All serial data in the end becomes bytes. There are three basic formats to represent bytes, but in the end the resulting data is just bytes, and any format would suffice for the entry. For ease-of-use, multiple formats are supported. Examples for all methods: Data is equivalent to the ASCII string “DVD” with a carriage return at the end. **Decimal Data**—With decimal data and between any of the different formats there must be a space to act as a delimiter between different pieces of data. To enter decimal data, enter the value to be stored in the byte in decimal. Valid data is from 0-255. Example: Data (“DVD” with carriage return): 68 86 68 13 **Hexadecimal Data**—With hexadecimal data and between any of the different formats, there must be a space to act as a delimiter between different pieces of data. To enter hexadecimal data, enter the ‘$’ symbol immediately followed by the value to be stored in the byte in hexadecimal. Valid data is from $00-$FF. Example: Data (“DVD” with carriage return): $44 $56 $44 $0D **ASCII Data**—All ASCII data must be inside double quotes. Each byte inside the quotes represents one byte of data. Look at any ASCII table to see the real values each character represents. The same ASCII characters

Method	Description
	supported in the C programming language are supported. Escape characters are also supported in the same way. Supported characters include \n (new line), \r (return), \t (tab, and \" (double quotes). Example: Data ("DVD" with carriage return): "DVD\r" Mixing formats — All of the above formats can be used together, and the person can use whichever seems most efficient. Example Data (All examples represent the exact same data): "DVD" $0D 68 "VD" 13 "DV" $44 13 $44 $56 68 13 68 $56 68 "\r"
Method to Enter Delays	Many times it is necessary to create delays when sending data to a serial device. The '#' character is used to represent that the following number is a delay in milliseconds. A space is required between each element in the data. Example: This example assumes that the protocol calls for a "PWON\r" command followed by a 1500 millisecond delay followed by a "PLAY\r". ASCII Example:

Method	Description
	"PWON\r" #1500 "PLAY\r" Decimal Example: 80 87 79 78 13 #1500 80 76 65 89 13
Method to Enter Parameters	Many commands have parameters. Examples of these commands are the GO_TO_CHANNEL command for TVs and Satellite receivers or GO_TO_DISC commands for DVD and CD changers. During driver creation, you are allowed to create macros to embed the parameter in the data that is being entered. This creates different problems depending on whether the protocol is a binary or ASCII protocol. When entering ASCII parameters, use a modified version of the format that C uses in its printf function. Example: This example is a GO_TO_CHANNEL command where the protocol specifies that the devices need the ASCII command "Channel XXX\r" where the XXX is the three digit (decimal) channel number that is being requested with zeroes padded (on the left) if the number is less than 100. The parameter name is CHANNEL_NUMBER. ASCII Example: "ChannelHarman Kardon03dCHANNEL_NUMBER \r" Later, at run time when this command is called with the Channel 56, the output appears as follows: "Channel 056\r"

Method	Description
	During driver creation, you can also enter parameters in a binary protocol format. Borrowing from the last format with the modification that following the%, first is the byte count (valid counts are 1, 2 and 4), followed by the byte order (E = big endian, e = little endian), followed by the data format (D = decimal, others to follow). This is obviously followed by the actual parameter name as in the example above. Example: This example assumes the protocol needs a start byte that is the number 2, followed by the GO_ TO_CHANNEL command code which is 57, followed by a 2-byte big endian channel number, followed by the end byte which is 0. 2 57%2EDCHANNEL_NUMBER 0 Later on at run time when this command is called with the Channel 357 the output looks like the following using our format. 2 57 1 101 0 (Hint 0x0165 is hexadecimal for 357, and 1 = 1 in decimal and 65 = 101) If the protocol used little endian for the parameter, the data entry is: 2 57%2eDCHANNEL_NUMBER 0 The output for the previous example is: 2 57 101 1 0

Method	Description
Method to Enter Checksums	Many protocols require a calculated checksum. A way must be provided for the user to calculate a checksum. There are several formats for checksums, so different types of checksums must be allowed. The '&' signifies that the software needs to enter a checksum followed by a byte count (valid counts are 1, 2, and 4), followed by the byte index in the command where the checksum calculation starts (valid numbers are 0-9), followed by the byte size of the checksum chunks (valid sizes are 1 and 2), followed by byte order (E = big endian e = little endian), followed by the checksum calculation format (STD = standard (chunk size wide) addition inverted, CRC = CRC). Example: The example uses the same devices as previously mentioned and assumes the big endian GO_TO_CHANNEL command, where that command needs a checksum (before the 0 end byte) starting at the beginning of the command, and the command is a simple 1-byte checksum. The data entry displays the following: 2 57%2EDCHANNEL_NUMBER &101ESTD 0 And the output for the previous examples is (channel = 357): 2 57 1 101 94 0

Example: Creating a serial driver InFocus LP850 projector

When creating a serial driver using the Driver Wizard in Composer Pro, the driver supports one-way communications.

> Example: In this example, you create a driver to support the serial-controlled **InFocus LP850 Projector**.

To create a new serial driver:

1. Start Composer Pro and connect to a Director.
2. Ensure that you have added a controller to your project (this should be the first device added).
3. To launch the Driver Wizard, from the Driver menu select **Create a New Driver**.
4. In the Driver Wizard, select the device driver you want to create, and click **ok**.
5. Fill out the driver information, such as Manufacturer, Model, and Driver Creator name. The date created, date modified, and the copyright information is generated automatically.

   For the InFocus LP850 Projector, use the following information:

   - Manufacturer: **InFocus**
   - Model: **LP850**
   - Driver Creator: **ACME Integrators**
6. Indicate how this device is controlled using IR or Serial. **Example**: **Serial**.
7. Set up the serial settings.
   - **Serial**—Select this radio button if the device you want to create a driver is for serial controlled. The following serial options are specific settings on serial devices.
   - **Baud Rate**—The number of symbols or characters per second sent over a serial link. Options: 110, 300, 1200, 2400, 4800, 9600 – default, 19200, 38400, 57600, 115200, 230400, 460900, 921600.
   - **Data Bits**—Use the drop-down menu to select (5, 6, 7, 8 – default).
   - **Flow Control**—The control of the transfer of data to avoid congestion. Options: None - default, Xon/Xoff, Hardware.
   - **Stop Bits**—Options: 1-default, 1.5, 2.
   - **Parity**—The process for detecting whether bits of data have been altered during transmission of data. A parity bit is appended to an array of bits to make the sum of all the bits always odd or always even for error detection. Options: None – default, Even, Odd, Mark, Space.
8. For the InFocus LP850 Projector, use the following settings:
   - Baud Rate: **19200**
   - Data Bits: **8**
   - Flow Control: **None**
   - Stop Bits: **1**
   - Parity: **None**

9. Click **next**.

Define the audio parameters

Example: Projectors do not have audio, so do not check anything.

10. Click **next**.
11. Fill out the device properties for the driver you are creating. Properties are features that vary between the different models of the same device type. For example, some Televisions have discrete power control and some only offer toggle power on/off. You must define in the driver you're creating the features supported in the model.
12. For the InFocus LP850 Projector driver, check **Discrete Input Selection**.
13. Click **next**.

Indicate how the power is handled

14. For the InFocus LP850 Projector driver, select **Use discrete on/off codes**. For more information about power management options, see "Guidelines for defining power management."
15. Click **next**.

Select the appropriate codes

16. For the InFocus LP850 Projector driver, de-select the following commands:
    - Cancel
    - Channel Down
    - Channel Up
    - Enter
    - Info
    - Number 0 through 9
17. Click **Add** to enter any custom commands.
18. Add the following options:
    - Aspect Ratio: **16:9**
    - Aspect Ratio: **4:3**
    - Aspect Ratio: **Native**
    - Ceiling mount **off**
    - Ceiling mount **on**
19. Enter the serial code for each serial command.
20. Click **next** to continue through the codes. For information about how to enter serial codes, see "Creating a serial-controlled device driver."
21. Click **Add** to identify the Input connections on the device.
22. For the InFocus LP850 Projector, add the following input connections:
    - Video 1 (Input, Line Level)

- Video 2 (Input, Line Level)
- Video 3 (Input, Line Level)
- Computer 1 (Input, Line Level)
- Computer 2 (Input, Line Level)
- Computer 3 (Input, Line Level)

23. Click **next**.

Define the connection types for the inputs and outputs

24. Define the connection types for Inputs/Outputs for all the inputs/outputs. For the InFocus LP850 Projector driver, define all the previous inputs identified previously.
25. Click **next** until you have defined all of the inputs and outputs.

Define the macros

26. Enter any additional serial codes needed to perform the desired action. For Serial Drivers, based on the selections you made in the Device Info section (where you defined Driver capabilities), both Codes and Macros have to have the serial strings entered.
27. Click **next**.
28. Click **next** again.
29. Click **OK** to return to Composer Pro. The driver you created is located in the Search tab in Composer Pro.
30. You have now completed the setup of you driver. Select the **Search** tab and the driver type you just created.
31. To check whether your driver is in the Online Database, select the driver. For the InFocus LP850 Projector driver, select **Projector** > **InFocus LP850**.
32. Drag and drop the new driver to the project tree.
33. Make the appropriate video, audio, and control connections or network connections (if appropriate) for the device.
34. Click **System Design** and double-click the device in the project tree. Use the Device Control window to test the control of the device.

Example**:** Double-click **Projector**.

DriverWorks Two-way serial or TCP/IP driver

Creating a 2-way serial or TCP/IP-controlled driver

You can create most serial drivers using the Driver Wizard in Composer Pro. Instead of capturing the code as you do with IR, you enter the specific serial data that you must send for each command.

Use DriverWorks instead of the Control4 Driver SDK to create 2-way drivers for AV and non-AV devices that are controlled using a serial or TCP/IP connection.

DriverWorks exposes each of the driver APIs previously published through the Control4 Driver SDK (now discontinued). It is an SDK framework that allows 2-way drivers to be written for the Control4 system.

DriverWorks drivers can be written and installed without requiring platform- and version-specific compiling. Using DriverWorks does require some programming skills, but this tool leverages the Lua-embeddable scripting language, which is powerful, fast, and light-weight language (when compared to other scripting languages). DriverWorks comes installed with Release 1.6 and later software releases.

For information on using DriverWorks, refer to the SDK DriverWorks documentation (“Getting Started with DriverWorks”), which is downloadable from the documentation area on the Control4 Dealer Web site: Go to http://dealer.control4.com/dealer/support/software-updates.

Related tasks

Two other tasks related to using Control4 device drivers in Composer Pro are:

- "Exporting a driver in the project"
- "Verifying the IR codes using the Driver Wizard"

Using a new device driver in an existing project

A new device driver can be added to an ongoing project in the Control4 system.

To add a new driver to an existing project:

1. Start Composer Pro and connect to a Director.
2. Delete (right-click > **Delete**) the driver from the existing project.
3. Add the device to the project again.
4. Re-configure any connections (see the Network or Control/AV tabs in the Connections view) and any associated programming.

Exporting a driver in the project

For all audio/video equipment, you can export a Control4 driver to save or add to other projects. This essentially saves a driver for other uses outside of the current project.

> Example: Export the driver you have edited on one Control4 system to another Control4 system, and save it with your company name.

To export a connected driver:

1. Start Composer Pro and connect to a Director.
2. In an existing project and from the project tree, right-click the driver you want to export and select **Export Driver**. This option is available from System Design, Connections, or Programming.
3. On the dialog that appears, type your company name in the **Creator Name** box.
4. Click the **Search** tab to find the saved driver.

Maintaining your system

Use this chapter to learn how to:

- Update Composer and Director
- Create Panelized Lighting reports

Maintaining your system

Use this chapter to learn how to:

- Update Composer and Director
- Create Reports

Updating Composer Pro

You can use Composer Pro to download and update to a new version of software or you can download a software update directly from the Online Portal.

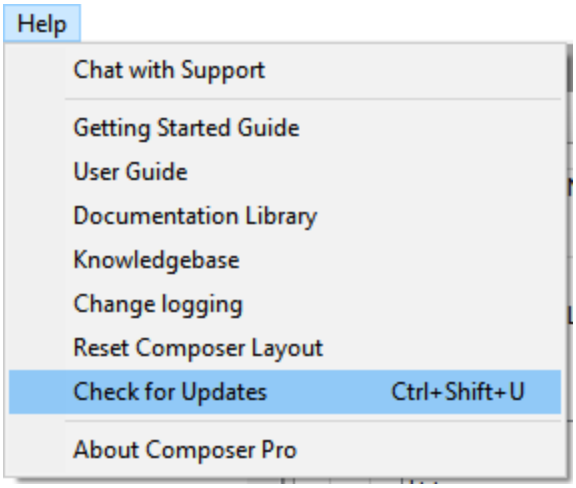
Update Composer Pro using Composer Pro

Use the Control4® Composer Pro software to download and update Composer Pro.

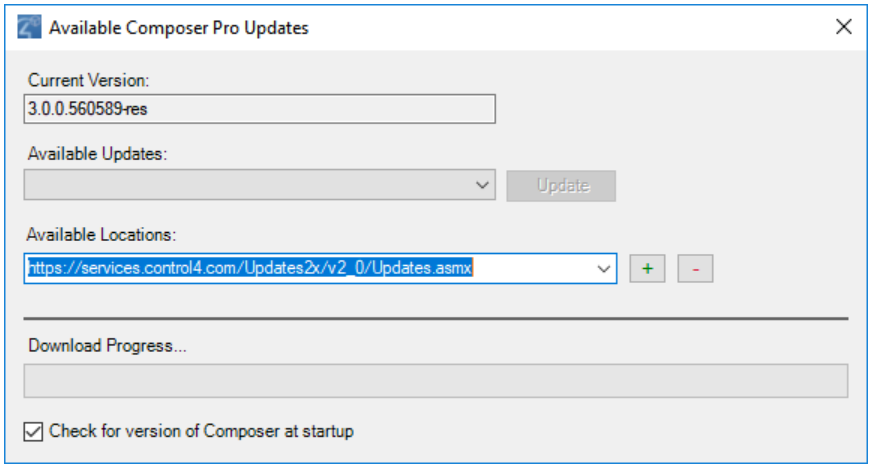
> IMPORTANT! Before you begin any update, check the Release Notes for any important notes or upgrade documents associated with the update, especially if it's a major update such as Smart Home OS 3. Read those documents first.

To update Composer Pro software from Composer:

1. In the Help menu, click on **Check for Updates**.



2. If an update is available, select it in the *Available Updates* drop-down menu and click **Update**.



3. Select a different download location in the *Available Locations* drop-down menu if instructed by Control4 Technical Support.

4. Check the box next to **Check for version of Composer at startup** to have Composer Pro check for an update every time the software starts.

Update Composer Pro from the website

You can download an update to Composer Pro from the Online Portal.

> IMPORTANT! Before you begin any update, check the Release Notes for any important notes or upgrade documents associated with the update, especially if it's a major update such as Smart Home OS 3. Read those documents first.

To update Composer Pro from the Online Portal:

1. Log into the portal at dealer.control4.com.
2. In *Support* > *Software Downloads*, find the needed version of Composer Pro and click on the correct OS version number, for example **OS 3**.
3. Click on **Download Composer Pro**.
4. After the file has finished downloading, open the downloaded file to start the install process. Follow the on-screen instructions to finish installing Composer Pro.

Updating the Control4 System

Use the Control4® Composer Pro software to update Composer Pro and Director.

> IMPORTANT! Before you begin any update, check the Control4 website for any Release Notes or upgrade documents associated with the update, especially if it's a major update such as up to Release 1.8.2, OS 2.0, or OS 3.0. Read those documents first.

Depending on the type of upgrade you need to perform, the following tools and website may need to be used.

- *Control4 website*
- Update Manager
- Network Status
- System Manager

Control4 website

Composer Pro updates (software releases) are available on the Dealer Portal at http://dealer.control4.com/dealer/products/software-updates/. You will need a Dealer login and password to access this site.

Prerequisites

Ensure that Release 1.8.2 and Composer Pro 2.0 are installed before you begin a subsequent update. See Composer Pro Getting Started for details. If you have an earlier release, see the update instructions for that release. You must update first to Release 1.7.4 and then 1.8.2 before updating to OS 2.0 and later.

Activate your licenses. See "Purchasing and Setting Up Dealer Licenses" in Composer Pro Getting Started or *Managing Dealer Accounts on MyControl4* on the Control4 Knowledgebase for details.

To access the software updates:

1. Log in and go to: http://dealer.control4.com/dealer/products/software-updates/.
2. Under Software Updates select the software version to download and install. The following software releases are available on the Control4 website:

Composer 1.7.4	Composer 1.8.2	Composer 2.0.6	Composer 2.2.4*
Composer 2.5.3	Composer 2.6.0	Composer 2.7.0	Composer 2.8.1
Composer 2.9.1	Composer 2.10		

Other software utilities are available for download also at the Dealer software download site.

> IMPORTANT! For new installations, it is always a best practice to use the latest version of the released software.

Update Manager

Update Manager in Composer Pro updates Director and all the IP-connected devices that are available in your project (identified and online), allowing you to update all the devices in the project configuration also. You can use Update Manager to update from previous releases.

To support multiple releases, the release (for example, 1.7.x) installs in a Composer Pro directory (for example, Composer17x), which differs from previous releases that were installed in the Composer Pro directory. You do not need to uninstall previous releases to install a new release, but you must install Composer 2.0 or later before you begin the update to the latest release.

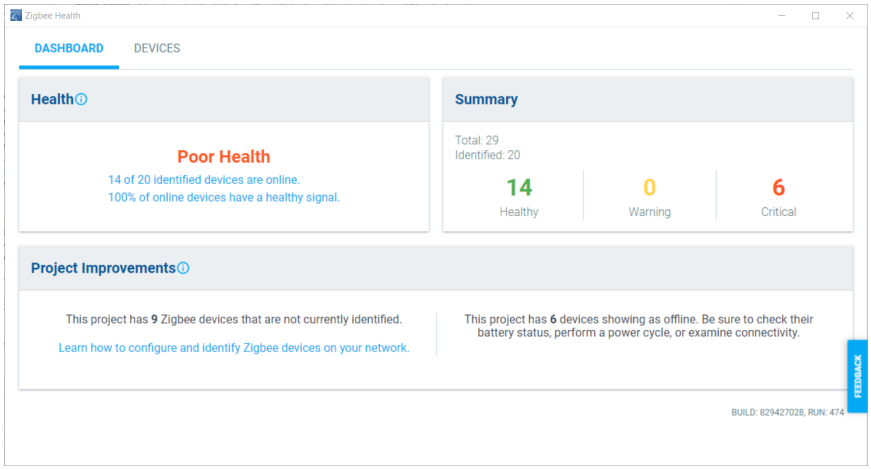
To access Update Manager:

1. Start Composer Pro and connect to a Director.
2. From the *Tools* menu, click **Update Manager**.

Zigbee Health

Zigbee Health provides a dashboard to give insight into the Zigbee health, summary, and project improvements and a detailed list of Zigbee devices in the project with troubleshooting information.

Zigbee Health Dashboard

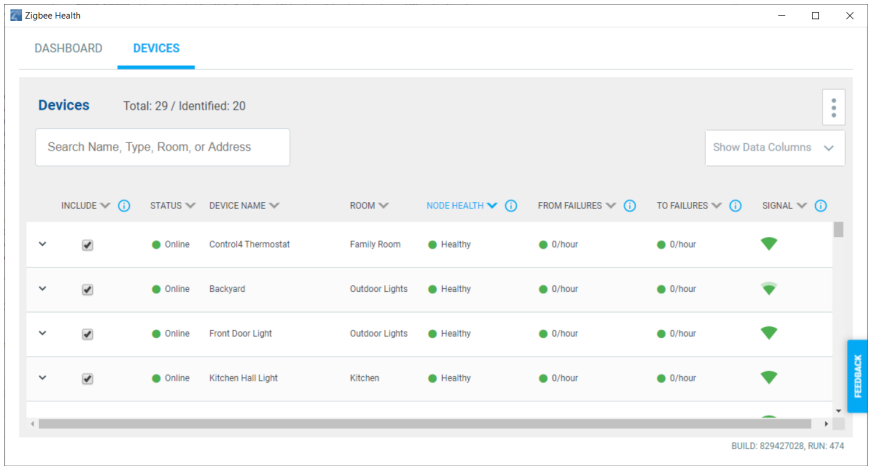


The Zigbee Health Dashboard has three main sections: Health, Summary, and Project Improvements.

- The **Health** grade is based on devices that are online and devices that have a strong and consistent signal.
- The **Summary** gives more details on how the grade is calculated by breaking down total devices in the project, how many are identified, and how many are in a *Healthy*, *Warning*, or *Critical* status. Devices that are offline or have extremely poor signal show as Critical. Devices that have communication errors, but are online, show as Warning. Devices that are online and with good connectivity strength show as Healthy.

- **Project Improvements** gives suggestions to improve the Zigbee health of the project. The number of devices that are not identified and that are offline are listed.

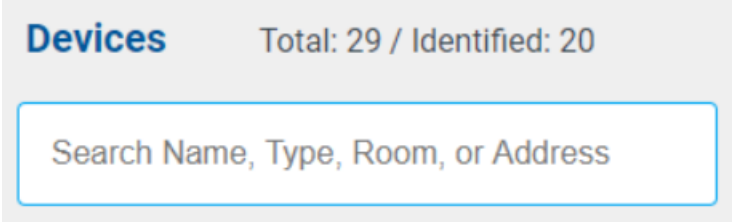
Zigbee Health Devices



The Zigbee Health Devices tab gives details on the Zigbee devices in the project.

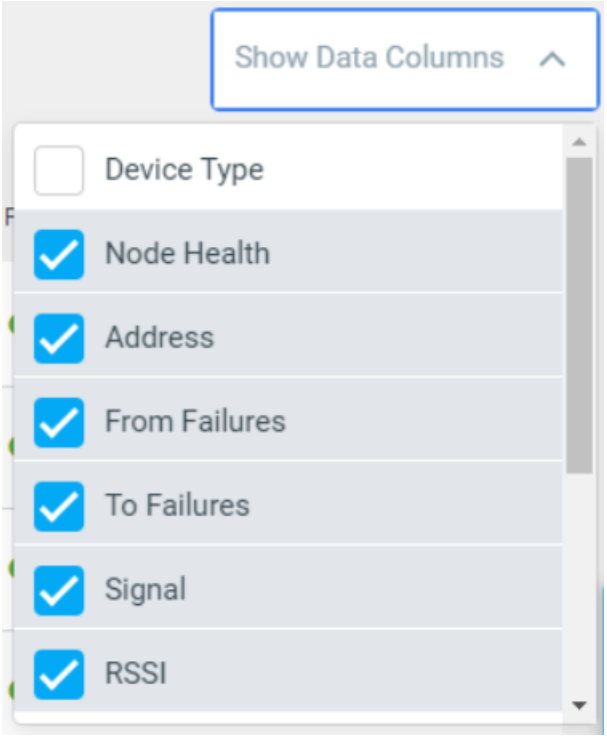
> **Tip**: You can sort by each column by clicking on the column name.

- **Search**—The Search bar lets you enter the device name, room in the project, device type, or MAC address of a Zigbee device and filter the Devices list.



- **Show Data Columns**—Click on the Show Data Columns dropdown menu to choose which data columns to display in the device list: Device Type, Node

Health, Address, From Failures, To Failures, Signal, and RSSI.



- **Include**—De-select a device in the Include column to not include that device in the Zigbee Health Dashboard grade. For example, if you have an outlet switch that you use for Christmas tree lights that gets put away most of the year, deselect the outlet switch so it doesn't lower your Zigbee Health grade.
- **Status**—Shows a green dot for online status, red dot for offline status, or gray dot for offline status if the device is not identified.
- **Device Name**—The device name given to the driver in System Design.
- **Room**—In System Design, the room the device is located in.
- **Node Health**—A combination of factors is used to give each device a node health grade.
- **Address**—The MAC address of the Zigbee device if it has been identified into the system.
- **From Failures**—Average message failures, per hour, from *device to mesh controller* since the last time Zserver was started or counts were cleared with a data reset. Normal ranges are 50 or fewer per hour. Signal interference or distance can negatively impact this value. From the menu, click on **Reset Counts**:<name of mesh controller> to reset the data.
- **To Failures**—Average message failures, per hour, from *mesh controller to device* since the last time Zserver was started or counts were cleared with a Data Reset. Normal ranges are 50 or fewer per hour. Signal interference or

distance can negatively impact this value. From the menu, click on **Reset Counts**:<name of mesh controller> to reset the data.

- **Signal**—An icon to rate the signal strength: from green full bars for very good signal to red empty bars for poor signal. Interference or distance can negatively impact signal strength.
- **RSSI**—Received Signal Strength Indicator (RSSI) is a negative numerical value in dBm that measures signal strength. Negative numbers closer to zero are better (-40 dBm is better than -65 dBm). What is considered normal varies from device to device, so only compare RSSI values from like devices (manufacturer and model). Values range from -100 (soft) to 0 (loud). Signal interference or distance can negatively impact this value.

Network Tools

The *Network Tools* menu option shows the *Connections > Network* view which offers network information on IP and Zigbee devices.

To access Network Tools:

1. Start Composer Pro and connect to a Director.
2. From the *Tools* menu, click **Network Tools**.
3. The Connections > Network view has three tabs. Use these tabs as required by the software:
   - IP Network
   - Zigbee Network
   - Z-Wave Network

System Manager

System Manager provides some of the functionality as in previous releases, but it does not perform the update. Use System Manager to add, refresh, connect, or disconnect devices.

Updating firmware

Sometimes you'll receive new devices that aren't on the same firmware version. For all devices to be able to communicate with each other, they do need to be on the same firmware version. Refer to the current Release Notes to get the latest updates on firmware.

Zigbee devices

Zigbee devices update automatically to the current firmware version when they are installed and identified to the system.

IP devices

To update IP devices, run **Update Manager**. You can check the firmware version either in System Design > Properties pane (for the device), or in Tools > Network Tools > Zigbee tab for Zigbee devices.

Black & Decker locks

Note: Ensure you're running a current version of Composer Pro and Director on the system. Without the current version, the latest firmware will not be available.

To force a firmware update on the lock:

1. Remove the batteries from the lock (press a key or two to eliminate any charge in the lock).
2. Put the batteries back in.
3. Press the **top left** button four times.
4. Press the **top right** button four times.

The firmware should start updating. If it does not, ensure that your batteries are fresh. If you cannot manually start the firmware update, the lock should automatically check in for an update after the first check-in of the lock, at 3 AM.

Guidelines for updating a Control4 system

Use these guidelines to update a Control4 system.

> IMPORTANT! Before you begin any update, check the Dealer Portal for any Release Notes, Read This First, or upgrade documents associated with the update and the release. Read those documents first.

> Note: The update behavior and steps for various releases differs. Make sure you review any documentation associated with the release before you begin your updates.

Follow these important guidelines for updating *Composer Pro*:

- **Back Up Your Project**. If you have a project in an earlier version of Composer, back it up before you update.
- **Verify the Network Connections**. Update Manager requires an active network connection to function properly. Ensure that the network connection is up and working prior to performing the upgrade.
- **Update Errors**. If you notice any errors during the update process in the Update Manager's output pane, take note of the error message, and follow instructions provided at "Troubleshooting the Upgrade Process."

  IMPORTANT! You cannot have both connection methods identified on the system. Remove the network connection to ZigBee and identify it again using the Ethernet connection.

- **Power On**. Ensure that the power state of all devices is **On**. You can verify that all devices are online from the Network Tools page.
- **Know When the Update is Completed**. When upgrading the Control4 controller running Director, you are disconnected from Composer Pro and streaming audio stops.

1. After this occurs, restart Composer Pro and reconnect to the system.
2. Go to **Tools** > **Update Manager** and watch the update process.
3. Also, go to **Tools** > **Network** to ensure that everything is connected. If it is not connected, it cannot update that firmware.

4. After Update Manager indicates that it is completed (you may see a message like “Finished site update attempt,” all the IP devices on the system are now updated. This does not include Zigbee devices or hybrid devices (containing both IP and Zigbee).
5. Go to **Tools** > **Network Tools** to view the firmware versions to ensure they are updated to this release.

Tip: **Be patient.** In cases where the Zigbee mesh is moved, it can take up to five minutes for all connections to be re-established.

Guidelines for updating specific devices

- **Primary Controller**. The primary controller holds a new firmware image file, which is transferred and reflashed when an Ethernet network connection is present. After the update, disconnect the IP identification and identify again using Zigbee.
- **Zigbee Devices**. When upgrading a controller associated with Zigbee devices, such as dimmers, switches, and keypads, these are also upgraded. As these devices upgrade, the device’s LEDs and the associated lighting loads may flicker. This is normal behavior.

Estimating Control4 system update times

Estimating update times per device type

The update time is dependent on the size of the Control4 system, the available network bandwidth, and the types of devices you are updating.

There are three types of devices: IP devices that communicate solely by TCP/IP, Zigbee, Zigbee Pro devices that communicate via Zigbee or Zigbee Pro, and hybrid devices that use both TCP/IP and Zigbee for communication.

Depending on the device type, some devices, such as the IP devices update in parallel; other Zigbee devices are updated sequentially, one after another. Generally, the IP devices are updated in parallel immediately after the primary controller updates. After that, the Zigbee devices update in sequence starting with the system remote controls. The system remote control is the first Zigbee device to update if it is in Wake mode. During or after the update, if the system remote control was in Sleep mode, it updates immediately after it wakes up.

The following list identifies some typical Control4 devices and update time estimates.

- **IP devices** (updated in parallel immediately after the primary controller):
- Controllers—20 to 40 minutes
- 7” touch screens—15 to 20 minutes
- Speaker Point—10 to 15 minutes
- **Zigbee devices** (updated sequentially):
  - System Remote Control—3 to 5 minutes (updated as the first Zigbee device if awake)
  - Dimmer/Keypad/Switches—3 to 5 minutes
  - Thermostat—10 minutes

> Example: a total of

- 20 devices may take 110 minutes or longer
- 30 devices may take 150 minutes or longer
- 60 devices may take 300 minutes or longer

to complete the process. Dimmers and switches do not need to be updated.

You may want to practice on your own Control4 system first before upgrading a customer's home.

Best practices for updating a Control4 system

These sections will help you understand the best practices to follow when performing a Control4 update in Composer Pro. If you follow these sections in order until your system updates successfully, you may avoid some unnecessary pitfalls.

General procedure

To update your system and software:

1. Back up the current project and media.
2. Check that you have a good network connection.
3. Check the currently-installed Composer Pro and Director versions.
4. Update Composer Pro software and drivers.
5. Update Control4 products using Update Manager.
6. If you have problems, see “Troubleshoot the Upgrade Process” or contact Control4 Technical Support.

> Tip: The update process is highly dependent on valid network configurations and Internet connection availability and bandwidth. Please confirm that the devices on your network have a valid connection to the Internet. If you are using DHCP, confirm that your DHCP is active and can issue valid IP addresses to clients on the network.

> IMPORTANT! Do not use a previous release of Composer Pro to modify a system. Likewise, do not use a current version of Composer Pro to modify a previous release of the Control4 system.

Back up the current project and media

To back up your current project and media:

1. Back up your current project file from a previous release by using **File** > **Backup As**. Give it a filename that clearly identifies it as the backup.
2. Continue to the next section.

Check the currently installed Composer version

It is helpful to check the currently-installed Composer Pro version before installing the update to make any necessary project adjustments.

To check currently installed Composer Pro version:

1. In Composer Pro, click **Help** > **About Composer**.
2. From the dialog that appears, write down the Composer Pro and Director versions.

Example: Composer version 2.3.0.190646 and Director version 2.3.0.190646.

To ensure that the Control4 system is working properly, the Composer Pro and Director versions should always be consistent and have the same version number.

Note: You do not need to be on a certain version, however, to update. Update Manager updates the Control4 system from all previous releases. The only reason you need to know this information is to determine when your project was set up. Control4 always recommends that you write down these versions in case this information is needed later.

3. Continue to the next section.

Update Composer software and drivers

The Composer Pro software download consists of Composer Pro software and new or updated device drivers to support Control4 hardware and other third-party products. The following steps outline how to launch the software executable and ensure that you have the latest drivers.

> Note: The Inspector utility can be used to verify each package after installation. Inspector reads all of the md5sums in the /var/lib/dpkg/info directory, and runs a new md5sum against them. Any missing files or files where the md5sums have changed are reported in /tmp/Inspection.$timestamp.

To install a released Composer Pro software version:

The following steps are an example of a software installation. Refer to the Release Notes associated with the software release for specific instructions.

1. Download the software package from the Internet at dealer.control4.com.
2. Install the current Composer Pro software, for example, Composer Pro 3.0.0.
3. Follow the on-screen instructions to complete the installation.
4. During the installation process, click the **Continue Anyway** button for the installation to proceed.
5. Continue to the section, "Update Control4 Products Using Update Manager."

(Optional) To ensure the driver database is updated:

1. From the Driver menu, select **Manage Drivers**. In the utility, you can see the creation and modification dates for all drivers in the local database residing on your computer.
2. Click **Add** to search the online database, and compare the modified dates to determine if a new driver is available.
3. If a newer driver is available and you want to download it, **check** the box next to the device model number, and click **OK** to download the newer associated driver.

Tip: When Composer Pro is first installed, the My Drivers tab is pre-populated with a list of drivers. The My Drivers tab provides shortcuts to commonly-used drivers. You can add, remove, and re-order items to the My Drivers tab as needed. Removing drivers from My Drivers tab only removes the driver from the list. It still exists in the Local

Database. To get back to the default My Drivers tab list and to include newly-added Control4 devices, right-click any **device** and click **Restore Default List**. This action does not affect the Local Database in any way. Also, right-click the **My Drivers** tab, select **Add Driver**, and then select all the Control4 devices not currently in the list.

Note: Devices that use SDDP for Auto Discovery (OS 2.2.4 and later) do not require you to identify the device; just add the device to the room. See the Composer Pro Getting Started guide for details.

Updating with a USB device (USB Stick Creator)

Create an Install on a USB device

These steps show you how to create an install to a USB device attached to your computer's hard drive and use the same USB device to install your customer's system without an Internet connection.

Prerequisites

- Have a USB drive handy, formatted for FAT32 with at least 2GB (OS 2.2.2 or earlier) or 4GB (OS 2.2.2 or later) total available disk space.
- Only installs for OS 1.7.4, 1.8.2, 2.1 or later can be created using this procedure. **Note**: This creation procedure does not work on OS 2.0.*x* releases. If you are creating an install using an older software version, refer to USB Stick Creator White Paper at control4.com on the Knowledgebase to create the install.
- A valid license on the controller to be updated.

To copy an install to a USB device:

1. Open a browser and go to dealer.control4.com.
2. Log in as the dealer.
3. Go to Support > Software Updates > USB Installer.
4. Click on the **USB Install Creator** program.
5. Follow the instructions in the USB Stick Creator White Paper (located next to USB Installer) to complete the process.
6. Connect the USB drive to your customer's system using Composer Pro, and then follow the instructions in the USB Install White Paper.

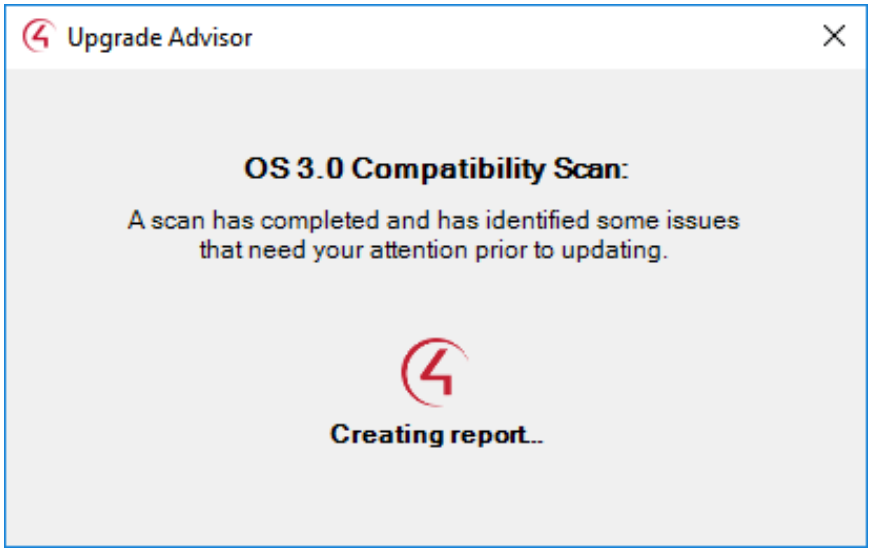
Reports

Upgrade Report

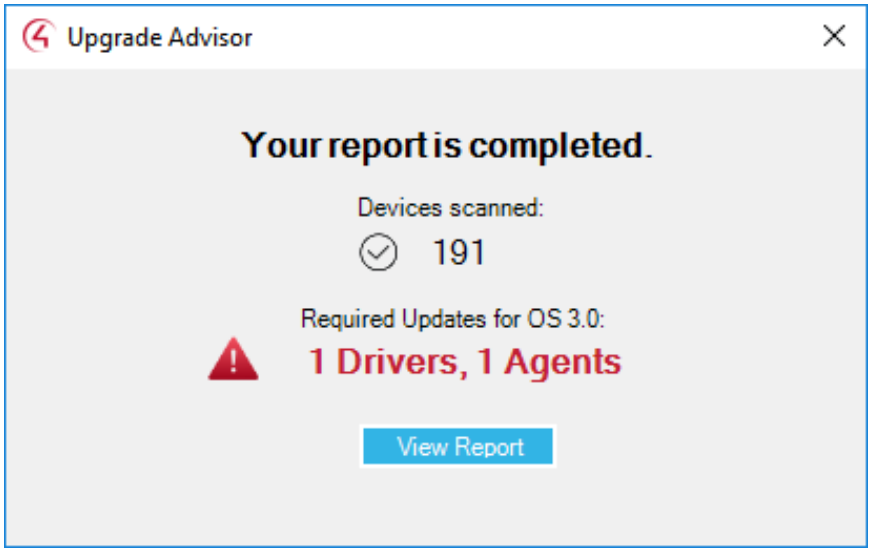
Composer Pro 3.0 includes an Upgrade Advisor that creates an Upgrade Report the first time Composer Pro 3.0 is connected to system running a lower version.

Upgrade Advisor

After you connect to a system that needs to be updated to Control4 Smart Home OS 3, the Upgrade Advisor runs automatically.



After the scan, the Upgrade Advisor creates an upgrade report listing any compatibility issues. Click **View Report** to see the results.

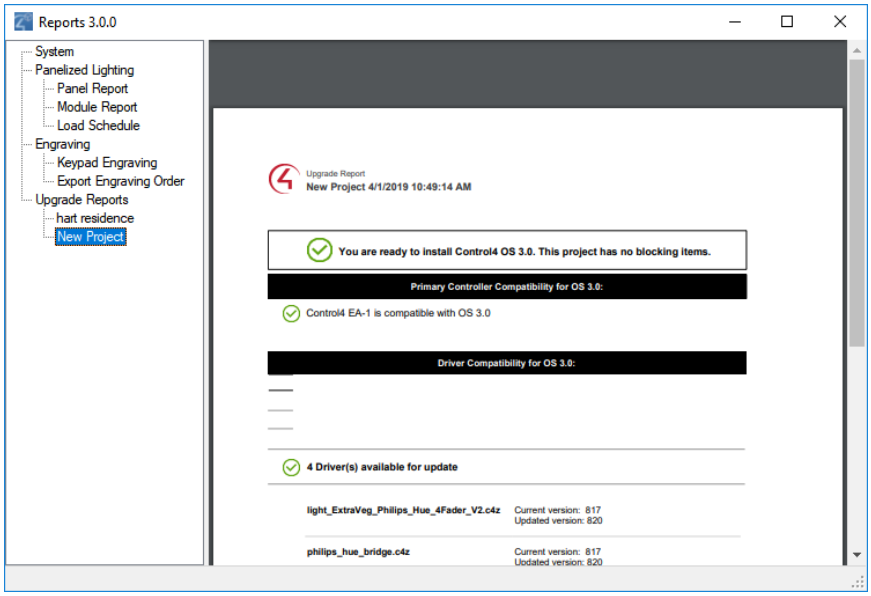


Viewing the Upgrade Report

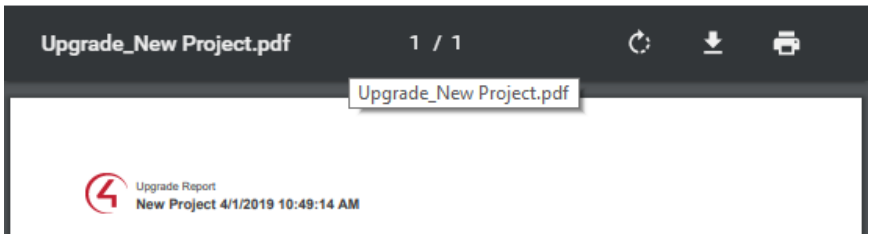
Use the Composer Pro *Tools* menu to view or review an OS 3 upgrade report for your Control4 system.

To view an Upgrade Report:

1. In Composer Pro *Reports* menu, select the report by clicking on the **project name** in the *Upgrade Reports* list.



2. Download or print the upgrade report by hovering the mouse over the report and clicking on the **Download** or **Print** icons on top of the window.



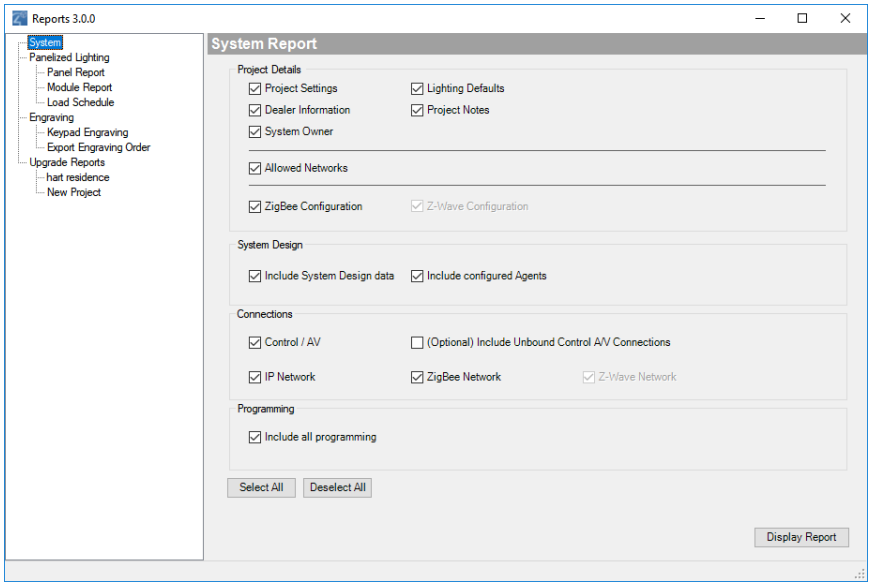
> Tip: Connect remotely to a project before meeting with the customer, run the report, and print it off so the customer can see any incompatible drivers or devices in the project.

System Report

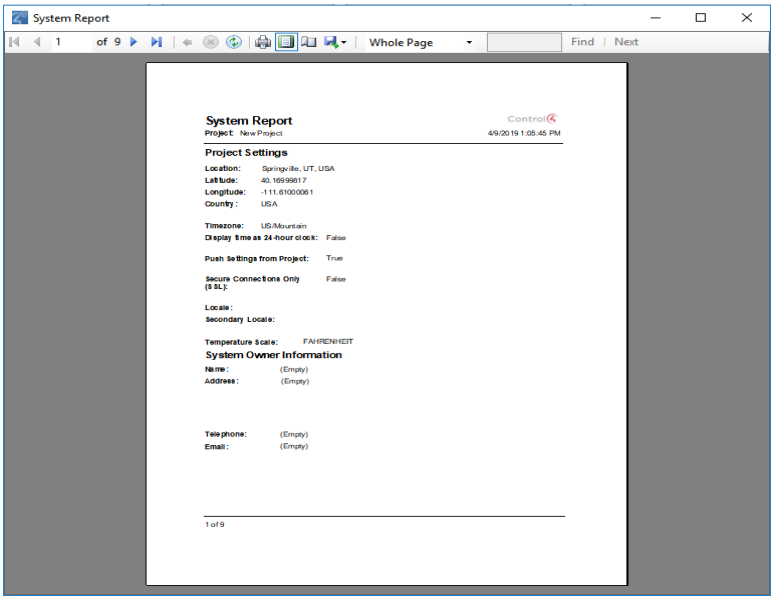
Use the Composer Pro *Tools* menu to create a system report for your Control4 system.

To create a System Report:

1. In Composer Pro Reports menu, select System Report.



2. Select the items to include in the system report, and click **Display Report**.



3. View, save, or print out the report. The report shows a summary view of the system and each category selected in the last step.

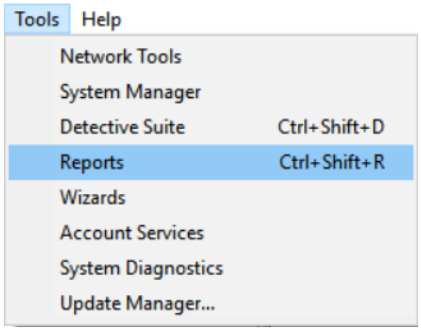
> Tip: Use this report to print out a useful list of device properties, connections, or programming

Centralized Lighting reports

Use the Composer Pro Tools menu to create reports for Centralized Lighting installations (Tools > Reports).

Creating reports in Composer Pro is essential for the electrician to use as a reference before they install and wire the Centralized Lighting devices in the panels. Use the **Tools** > **Reports** option to select and generate the reports.

IMPORTANT! Before you begin to design and plan a Centralized Lighting system, make sure you attend the Centralized Lighting training sessions and videos, and then review the Centralized Lighting documentation in the Products section on the Control4 website.



Report types

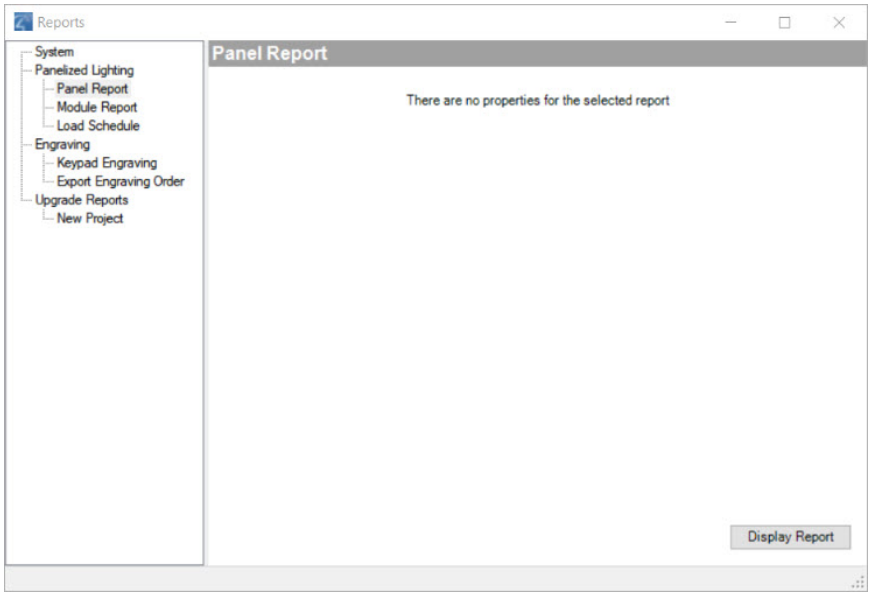
- **Panel Report**. This report lists all Control4 panels in the project. Each panel shows the modules and associated terminal blocks that should be installed in each slot.
- **Module Report**. This report can be generated for one or all panels in the project. This lists each module, where it goes in the panel, the circuit breaker information for the module, and all loads connected to the module.
- **Load Schedule Report**. This report lists all of the Panelized Lighting lights in the project.

Create a Panel Report

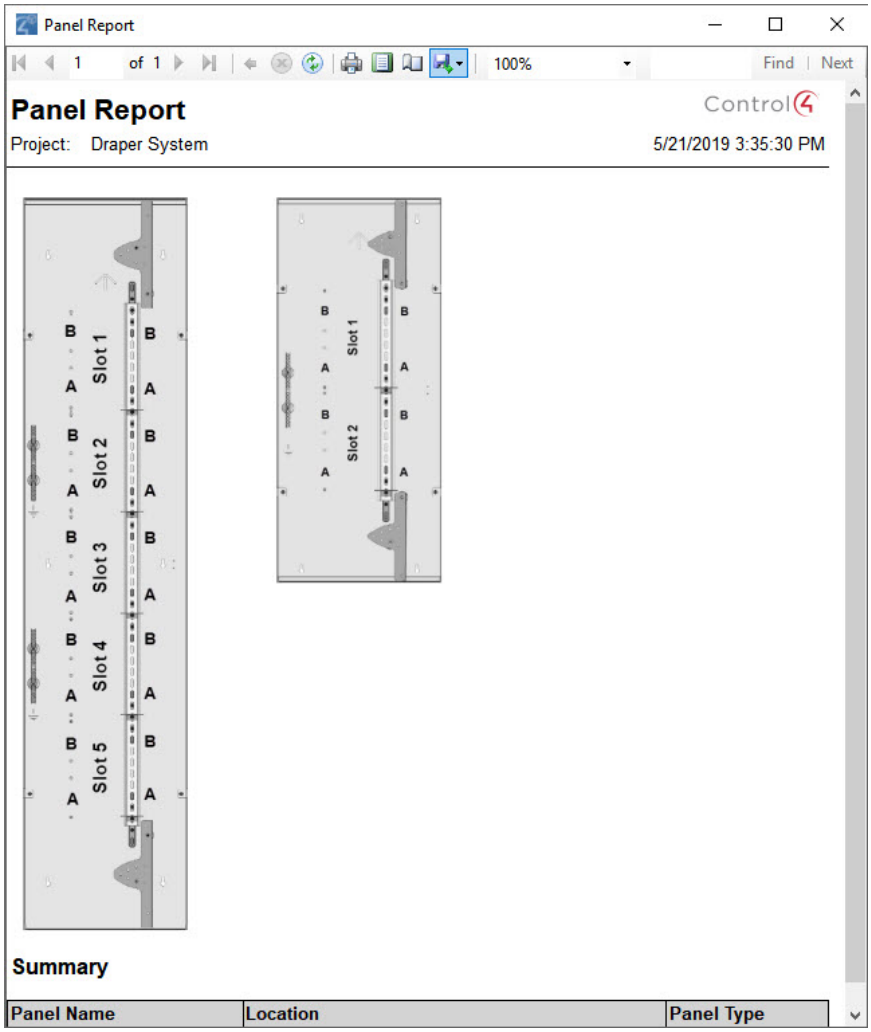
Create and generate this report for Control4 2-Slot or 5-Slot panels.

To create a Panel Report:

1. In the Reports list, select **Panel Report**.



2. Click **Display Report**.



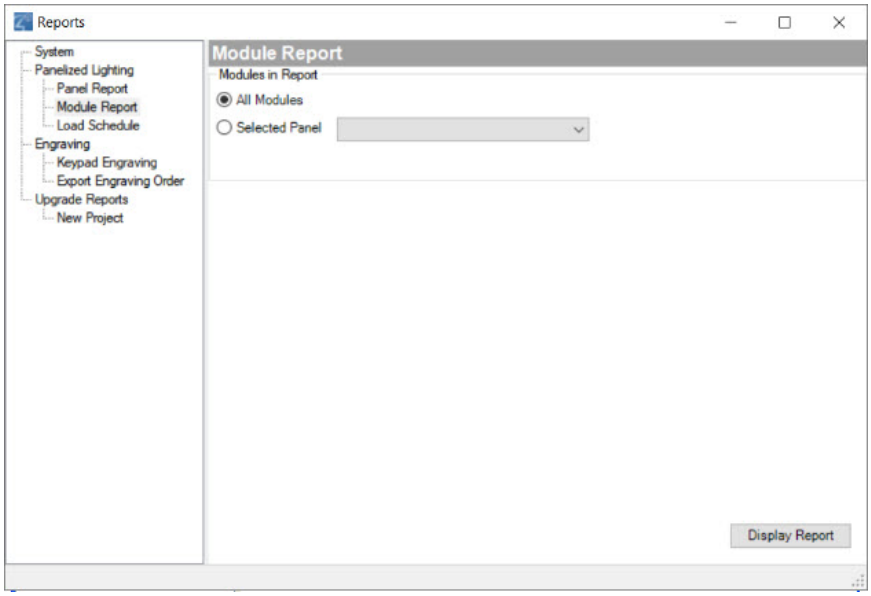
3. View, save, or print out the report. The report shows a graphical view of the panels and where the devices should be installed.

Create a Module Report

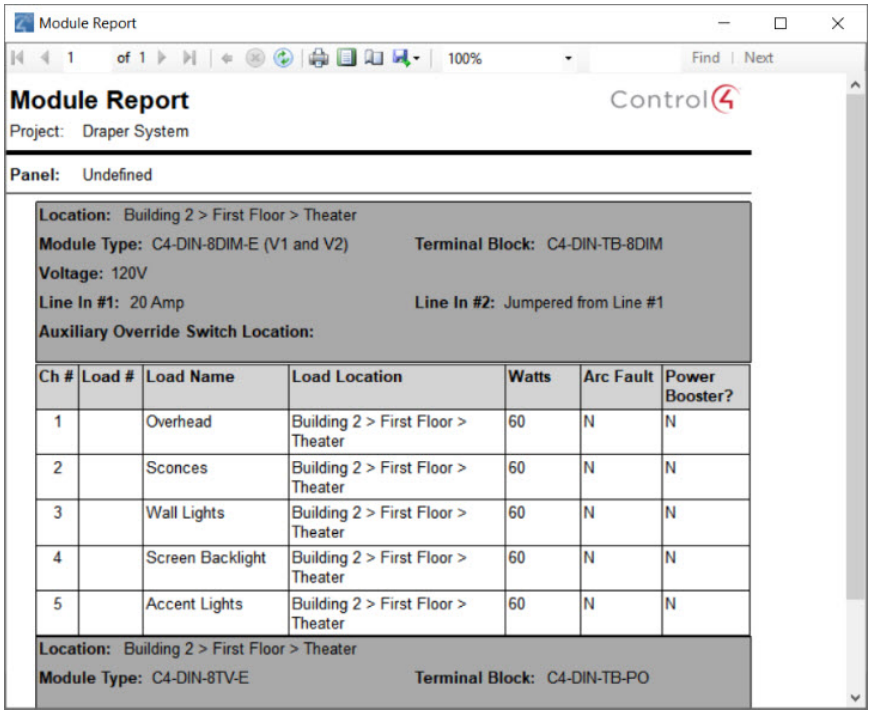
Create and generate this report for Panelized Lighting modules.

To create a Module Report:

1. In the Reports list, select **Module Report**.



2. Select to create a report for All Panels or a specific panel.
3. Click **Display Report**. This report shows the channels, loads, load name and location, wattage, and power booster.



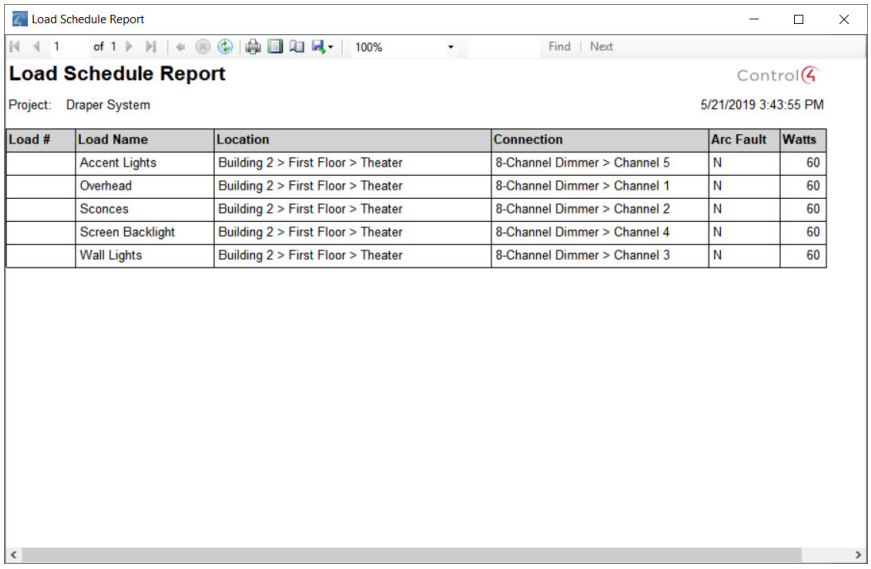
4. View, save, or print out the report.

Create a Load Schedule Report

Create and generate this report for the load schedule.

To create a Load Schedule Report:

1. In the Reports list, select **Load Schedule**.
2. Click **Display Report**.



Load #	Load Name	Location	Connection	Arc Fault	Watts
	Accent Lights	Building 2 > First Floor > Theater	8-Channel Dimmer > Channel 5	N	60
	Overhead	Building 2 > First Floor > Theater	8-Channel Dimmer > Channel 1	N	60
	Sconces	Building 2 > First Floor > Theater	8-Channel Dimmer > Channel 2	N	60
	Screen Backlight	Building 2 > First Floor > Theater	8-Channel Dimmer > Channel 4	N	60
	Wall Lights	Building 2 > First Floor > Theater	8-Channel Dimmer > Channel 3	N	60

3. View, save, or print out the report. This report shows the load number, name, and location, the connections and the wattage.

Engraving reports

Use the Composer Pro *Tools* menu to create reports for Centralized Lighting installations (Tools > Reports).

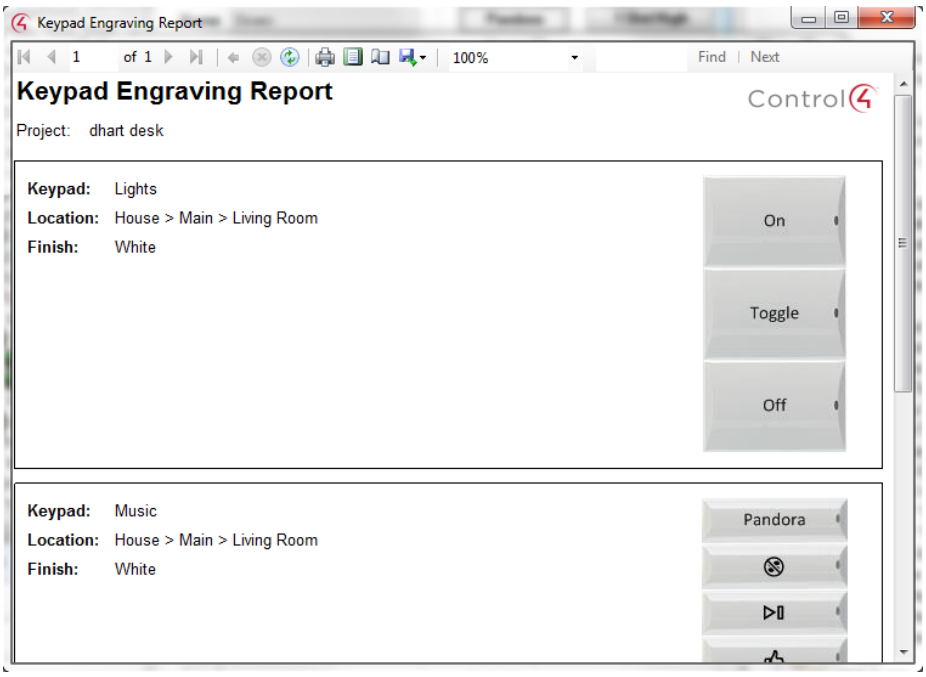
Report types

- **Keypad Engraving**–This report lists all Control4 keypad engraving in the project. Each keypad shows the keypad name, location, finish, and a graphical preview of the finished engraving.
- **Export Engraving Order**–This report creates your keypad engraving order. The engraving order can be uploaded on the Dealer Portal.

Creating a Keypad Engraving Report

To create a Keypad Engraving Report:

1. In the Reports list, select **Keypad Engraving**.
2. Click **Display Report**.



3. View, save, or print out the report. This report shows each keypad, name, location, finish, and a graphical preview of the finished engraving.

Exporting your Engraving Order

To Export your Keypad Engraving Order:

1. In the Reports list, select **Export Engraving Order**.
2. Select the devices you would like to include in the engraving order in the project tree list.
3. Click **Export Order**.

Troubleshooting

Use this chapter to learn how to:

- Follow general guidelines for troubleshooting
- Troubleshoot controllers
- Troubleshoot a Director connection
- Troubleshoot media
- Troubleshoot devices
- Troubleshoot the upgrade process

Guidelines for troubleshooting

This section outlines general troubleshooting guidelines to check first if you are having problems with a Control4® system.

The following table lists the main areas typically found to resolve some issues on the Control4 system.

Guideline	Where to go
Check room connections	Composer Pro automatically sets room connections when you set up a system. These settings are default settings, and may not necessarily match your physical connection. Ensure that the room connections are set to match your specific system. If you move a device to another room, move it in the project tree also, and then identify it again to make sure it's connected properly. For more information, see: " Connecting rooms" " Testing device controls"
Check Control/AV **connections**	The Control and AV connections identify the physical connections to the system. When these are defined, the system is completely automated and programmable. However, if one of the connections is not correctly identified, it can cause the system not to run properly. Ensure that the control and AV connections match the physical configuration. For more information, see: "Testing control and AV connections".
Check network connections	If a device is not using a control connection to communicate to the Control4 controller, it uses a network connection: a type of connection that uses a network address such as TCP/IP (Ethernet), Zigbee, Zigbee Pro and Wi-Fi. 1. Ensure that the network connections viewable in the Connections view > Network tab all have a network address associated with the device. If not, identify the device again. 2. Ensure that the Control4 controller, such EA-3, has a network address. If the address is not appearing, identify the device again. From the Tools menu, select **Network Tools**. This lets you see all of the Zigbee and IP network addresses on the

Guideline	Where to go
	network. It shows whether the device has an address, if it has an active connection to the network (status is online), and the Zigbee signal strength of each device. For more information, see: “ Using the Network tab” "Tools menu" Connecting a Device to the Network (see “Connecting devices”) “ Cannot identify the device to the network” “ Verifying the network connections”
Ensure Navigators are connected to Director	From any of the Navigators, press **Info** > **Director** (for releases prior to 2.0) or **More** > **Settings** > **Network** (OS 2.0 or later) to ensure that you are connected to the Control4 controller’s network address. You can find out the Control4 controller’s network address from the Connections view > Network tab. For more information, see ”Customizing Navigators.”
Ensure music is added and scanned	In Composer Pro, ensure that your music is available (added to the controller) and is scanned into the system. 1. Make sure the stored or broadcast media is added or scanned. 2. Check the Room Properties page to see if the media was added. 3. Ensure that Navigators were refreshed after scanning media. 4. If the controller reboots, re-scan the media. For more information, see:

Guideline	Where to go
	“ Adding items to the project tree” “Setting up media stored on a controller” “ Setting up media stored on a disc changer” “ Setting up media for television stations” “ Setting up media for radio stations” “ Using external storage devices” “ Configure an audio or AV switch” “ Creating a playlist” “ Editing media information”
Refresh Navigators	Whenever you update the system, scan music, or update devices or device information, from the File menu, select **Refresh Navigators**.

Troubleshooting controllers

The following table lists troubleshooting problems on Control4 system controllers.

Symptom	Possible problems and solutions
The controller has N/A for IP address	1. The controller has no network connection. Plug in your Ethernet cable. After a few moments, the addresses should appear. 2. The power cable is not plugged in. Plug in your power cable. 3. No DHCP on the network. Ensure that DHCP is operational.
The controller has a blank front display	1. Either your cables are unplugged, or they are not connected. If both are connected, unplug them and connect the Ethernet cable before connecting the power cord. 2. The controller is not connected to a cable/modem/switch/ using DHCP. 3. Ensure that the Reset button is not jammed behind the plastic cover (older controllers only).
The controller doesn't come back up after a power outage	To receive a notification of the controller going down and coming back up, set up an Email Notification agent to alert you when the project is loaded and the controller comes back up. When you create the alert, place the alert on the project (Device Events top level). See "Using the Email Notification agent."

Rebooting the Control4 system

At one time or another you may have configured the Control4 system incorrectly, or the connection to the network is not behaving the way it should. In this case, you can reboot or reset the system. You don't have to do anything in Composer Pro other than check that the device you reboot is on the network.

To reboot a *controller*:

1. Disconnect the power cord from the controller.
2. Plug the power cord back into the controller.
3. Verify that the controller comes back on the network in Composer Pro. See "Connecting devices to the network" or your controller's installation guide for details.

Resetting the Control4 system

Refer to your controller's installation guide for reset and factory restore instructions.

Troubleshooting a Director connection

The following table lists troubleshooting problems connecting to a Director.

Symptom	Possible problems and solutions
Cannot see the Network Address of Director in the Director's dialog	1. In Tools > System Manager, click **Refresh** several times to see if the network address appears. 2. If not, select **Add** and enter the name and network address. 3. Make sure Director is enabled on the controlling device. a. At a command line, enter telnet [controller IP address]. b. Enter the root username and password. c. Enter sysman status. d. If Director is not enabled, enter sysman enable director. e. Enter sysman status and verify the Director is now enabled. f. Enter exit.

Troubleshooting media

The following table lists troubleshooting problems with Control4 system media.

Symptom	Possible problems and solutions
DVDs not showing up in the disc changer	Ensure that you have a serial disc changer. Only bi-directionally-controlled serial disc changers can scan media. If you have a serial disc changer, see the following: 1. Ensure that music is added and scanned 2. Check these sections: " Setting up media stored on a disc changer" " Connecting rooms" "Testing control and AV connections" " Connecting a device to the network"
Cannot play music or music channels not appearing in the Navigators	If music is not running, see the following: 1. Ensure that the Navigator is connected to Director. See Composer Pro Getting Started. 2. Ensure that a room is appearing on the Navigator. If not, click the room and change the room to one that can play music. 3. Ensure that music is added and scanned. See: " Connecting rooms" "Testing control and AV connections" " Connecting a device to the network" 4. Refresh the Navigators. See the Composer Pro Getting Started.

Troubleshooting device control

The following table lists some control problems on Control4 system devices.

Symptom	Possible problems and solutions
The Device is not Controllable from a Navigator	If the device, such as a dimmer, is not controllable from the Device Control window (double-click the device from the project tree); no connection exists. Refer to the following sections: " Connecting rooms" "Testing control and AV connections" " Connecting a device to the network"

Troubleshooting Navigators

The following table lists troubleshooting problems with Control4 Navigators.

Symptom	Possible problems and solutions
Not seeing Room Location on the Navigators	From a Navigator (on screen or touch screen), ensure that the device is connected to Director. See “ Connecting rooms”. Check the connections: 1. For an on-screen Navigator, see “Testing control and AV connections”. 2. For touch screens, see “ Connecting a device to the network” .

Troubleshooting driver creation

The following table lists troubleshooting problems when creating Control4 drivers.

Symptom	Possible problems and solutions
IR Learning is not working	1. A controller must exist in the project to run IR Learning. Add a controller. 2. The process of capturing IR codes is very sensitive to lights, such as sunlight, fluorescent lights. If it is not working properly, turn off the lights or cover the physical hardware so that the light cannot interrupt the code capture. For a complete list of IR capturing guidelines, see "Guidelines for capturing IR codes."

Troubleshooting dimmers, switches, and keypads

The following table lists troubleshooting problems with Control4 system dimmers, switches, and keypads.

Symptom	Possible problems and solutions
Dimmers, switches, or keypads are not behaving correctly	1. **Reboot**. Try rebooting the device by tapping the **top** button 15 times. On the 6-Button Keypad, this is the top left button. This action reboots the device, but does not clear programming associated with the device. 2. **Reset**. a. Tap the **top** button 5 times. b. Tap the **bottom** button 5 times.c. Tap the **top** button again 5 times. If you are using the 6-Button Keypad, this is the top left and bottom left button. This clears all your network connections. d. Go back into the **Connections** view > **Network** tab, and identify the device again after resetting.

Cannot identify the device to the network

This section provides troubleshooting instructions to identify a Control4 system device on the network.

If you cannot identify a device on the network, follow these steps until the problem is resolved:

1. Make sure the Control4 controller is identified in Composer Pro. In the Connections > Network tab, see the line item for the Control4 controller. Is there a network address for the controller?
2. (Controller only) In System Design, select the controller object to check the Zserver status. Is the Zserver running? If not, click **Enable**.
3. If the controller is identified and Zserver is running, check whether any other devices identify. Do they?
   - If **yes**, a problem exists with the individual device. On switches, dimmers, and keypads, if you tap the top of the button **9** times, the bottom **9** times, and the top **9** times again (pause for a breath in between each 9 count), this will reset the device. Doing the same thing with 7, 4, and 7 will make the device's LED flash the channel it's on (if it's on Channel 14, it will flash 14 times). If the channel doesn't match the one for your system remote control and controller, the channel will need to be changed. Call Control4 Technical Support.

     Note: For Release 1.8 and later, Zigbee Pro devices select one channel. Control4 recommends that you not change the channel; Zserver determines which channel to use automatically based on the available frequency space. Refer to the Composer Pro Software Release Update Instructions - 1.7.4 to 1.8.2 on the Control4 Knowledgebase or on the Dealer Portal for details.

   - If **no**, some other devices in the house may be causing interference. Power down any 2.4 GHz devices, such as microwaves and cordless phones. Continue to the next step.
4. Will the devices identify now?
   - If **yes**, something in the house is causing interference. Replace it, or reset the channel on all of your devices. You cannot reset the channel on wireless dimmers, switches, etc., at this time. Call Control4 Technical Support.
   - If **no**, a problem exists with the controller's radio transmitter. Call Control4 Technical Support.

Troubleshooting the upgrade process

Follow these guidelines if you are experiencing Control4 upgrade or update problems.

Basic troubleshooting guidelines

1. Reset the device's network settings. See "Resetting the Control4 system ."
2. Attempt to have the update successfully downloaded while connected to a different network or by using a USB drive update (see "Information about older releases").
3. Allow the device to retry downloading the update as it automatically restarts and retries it.
4. Is the defect install/update related to an ongoing system operation?
5. Media not available? If it is a USB drive or network file share, make sure it is mounted (use the System Design view). If the media is on USB drive connected to a secondary controller, re-scan the media for that device.
6. Navigator not connected to Director? Reconnect Navigator to Director.
7. Are strange things happening to the devices?
   - Make sure all Zigbee devices are updated to the latest firmware.
   - Make sure Director and Composer Pro are using the same version.
   - Disconnect and identify any problematic devices again.
   - Power cycle all IP devices.
   - **Be patient**. In cases where the Zigbee mesh is moved, it can take up to five minutes for all connections to get re-established.
8. Turn on Diagnostic Logging (in Composer Pro, **Tools** > **System Diagnostics** > **Logging** > **Start**). Use the Logging tool to determine what was happening on the system. Can you duplicate it, and is there a workaround? For details, see " Logging diagnostics information."

> Tip: Report any problems during the update process to:

Control4 Technical Support: http://dealer.control4.com/support **Email**: support@control4.com**Telephone**: 1-888-400-4072

Status message	Description	Resolution
1. Device IP address detected with a different version — update needed.	The Director discovered a device that is a different version than the Director box.	Perform update.
2. Device IP address indicated it needs to be updated.	The device sent a status message to the Director that says it needs to be updated.	Perform update.
3. Finished update attempt.	Current update is completed. A separate message notifies you of how many devices succeeded or failed.	(Status message only) No action is required.
4. Update information was missing or invalid. Reinstall the files for the USB drive, and attempt the update again. If the problem persists, contact Technical Support.	A Director could not find the matching update information for a device retrieved from the USB drive. This would be the case if files were deleted from the USB drive.	Re-install the files for the USB drive, and attempt the update again. If the problem persists, contact Technical Support.
5. Update information was missing or invalid. Contact Technical Support.	The Director could not find the matching update information for a device retrieved from the Web. The database contains invalid data.	Contact Technical Support.
6. Director device is not yet identified. Please identify the Director device and attempt the update again.	The system has not yet discovered the Director device.	Identify the Director device, and perform the update again.
7. Starting update to	An update has started.	(Status message only)

Status message	Description	Resolution
version <targetVersion>. Director version is <version of Director>.		No action is required.
8. Detected USB device containing update information. The USB device will be used for the update.	The system has detected a USB drive.	(Status message only)
9. Device <ipaddress>: <Status data received from the device>	The system received data from the device.	(Status message only) No action is required.
10. Updated: <number of updated devices> Failed: <number of failed devices>	Follows the message “Finished update attempt” (number 3) to provide specific details.	Reconnect, re-identify, and restart the update.
11. Device <ipaddress> failed to update.	Provides the specific IP address of any device that failed to update. Follows the message number 10 when applicable.	Try to identify the device again, and try the update again. If not successful, contact Technical Support.
12. Failed email results to <entered email address>”. Error was: <error number>. Verify that the VPN is correctly setup and functioning on your Director box and that a valid mail address was entered. Contact Technical Support if this problem persists.	This is called if an error is returned when trying to send the summary via email.	Verify that the VPN is correctly set up and functioning on your Director box, and that a valid mail address was entered. Contact Technical Support if this problem persists.
13. Unable to obtain	System has not received	1. Ensure that you can

Status message	Description	Resolution
update version information from the Web interface at URL <url used for getting the version, i.e., http://webdev-1.control4.com/...>. Verify that Internet access is available from Director.	the version information back from the database.	communicate to the Internet to the Website from your computer. Use a prompt box to ping the address. 2. Ensure that you can connect to the Control4 controller through the Local Area Network. 3. Ensure that a firewall is not blocking the update. 4. If you still cannot update, use a USB drive for the installation.
14. Detected devices that still need to be updated. Restarting the update process.	To allow an update to propagate throughout the system, the system waits 5 minutes after the start of the update before checking the status of connected devices. If outdated devices are still detected, this message is sent, and the system restarts the update process.	(Status message only). No action is required.
15. The information on the USB drive is invalid. Reinstall the update on the USB drive and attempt the update again.	The system cannot parse the update-info.html file on the USB drive. The file is not valid xml.	Re-install the update on the USB drive, and attempt the update again.
16. Not enough free space on file system to store	There is not enough free space on the box	Remove the stored media, log files, etc.,

Status message	Description	Resolution
update information. Disk free = <amount of free space> needed = <space needed>. Remove stored media, log files, etc., and attempt the update again.	running Director to store the largest set of packages for a device type.	and attempt the update again.
17. Unable to access the directory for update information. Please contact Technical Support.	System cannot access the /packages directory. Either the disk has a serious problem, or the mounts didn't work right.	1. Ensure that you can communicate to the Internet to the Website from your computer. Use a prompt box to ping the address. 2. Ensure that you can connect to the Control4 controller through the Local Area Network. 3. Ensure that a firewall is not blocking the update. 4. If you still cannot update, use a USB drive for the installation.
18. Out of file space for packages.	Ran out of disk space while downloading the software packages. The update fails, then restarts after 5 minutes, and the "Not enough free space" message (number 16) displays.	Remove the stored media, log files, etc., and attempt the update again.
19. Device <ipaddress> failed because it reported a status of <reported device status>.	The device reported that it failed to update.	Try to identify the device again, and restart the update. If it fails again, contact Technical

Status message	Description	Resolution
		Support.
20. Touch screen device at <IP address> must be docked before upgrading. Please dock the touch screen and restart the update.	A Wireless Touch Screen was not properly seated in its dock when the update started.	Please dock the touch screen, and restart the update.

Diagnosing trouble spots

Use the System Diagnostics tool in Composer Pro to view, monitor, and troubleshoot a Control4 system.

System Diagnostics tool

The Control4 system includes many devices running embedded operating systems communicating over a wired or wireless network. During installation, configuration, and troubleshooting, the ability to look at the overall status of the components becomes very useful.

The System Diagnostics tool lets you gather system information to help you determine if any issues encountered are configuration problems, performance issues, or potential defects.

System Diagnostics uses

Possible uses of the System Diagnostic tool include:

- Viewing controller performance information:
- CPU usage
- CPU usage history
- Memory usage
- Memory usage history
- Processes running
- Viewing controller networking information:
- Network type
- Connection status
- MAC address
- IP address
- Subnet mask
- Gateway
- DHCP status

- DNS server information
- View system information
- Viewing system information:
- Detailed lower-level information about the devices listed
- Viewing logging information:
- When troubleshooting a problem that is reproducible, use the System Diagnostics tool to capture logged information while reproducing the problem to email to Control4 Technical Support.
- When troubleshooting a problem that is not reproducible, connect the controller, enable logging, and allow the logging to continue running for a specified period of time to capture the problem. The logs are then captured and emailed to Control4 Technical Support.

Use the Control4 Composer Pro System Diagnostics tool to view, monitor, and troubleshoot a Control4 system. The diagnostics information is organized into four tabs:

- Controller Performance
- Controller Networking
- System Info
- Logging

To access the System Diagnostics tool:

1. Start Composer Pro and connect to a Director.
2. On the menu bar, click **Tools** menu, then click **System Diagnostics**. The tool is available over a LAN connection using remote access.
3. Use the tool to diagnose problems on your own, or capture and send information to Control4 Technical Support.

System Diagnostics interface

Viewing controller performance information

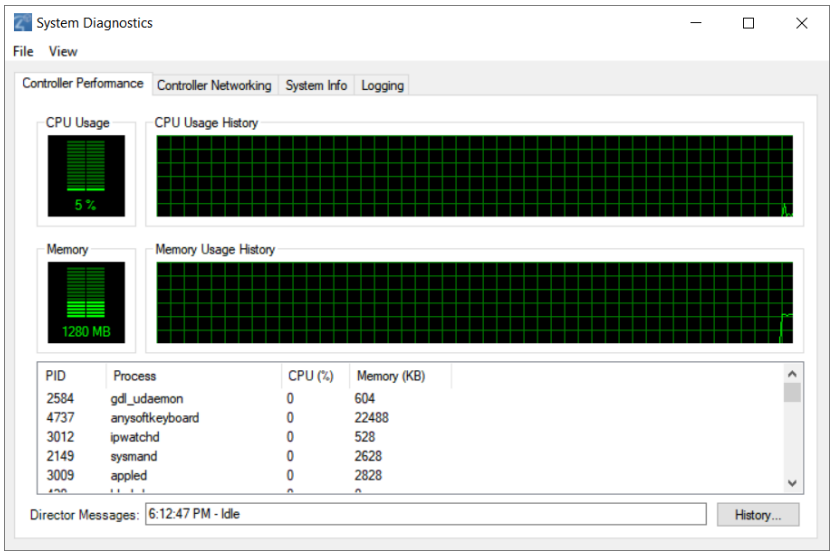
Use the System Diagnostics tool (Tools menu > System Diagnostics) to view controller performance.

The Controller Performance tab contains information regarding CPU and memory utilization for the Primary Controller of the project. Asynchronous messages from the Director regarding its current state are also displayed.

To view controller performance information, including CPU and memory usage:

1. Start Composer Pro and connect to a Director.
2. From the Tools menu, select **System Diagnostics**. The Controller Performance tab is viewable by default.
3. View information displayed on the Controller Performance tab:
   - **CPU Usage**—Shows a graphical form of current CPU usage and CPU usage history for the primary controller, which is the Control4 controller used to control the system if multiple controllers exist on a system.

- **Memory Usage**—Shows in graphical form the current memory usage and memory history for the primary controller.
- **CPU and Memory Usage by Component**—Shows percentages of CPU and memory use per component.



4. Refresh the screen or update the speed. To do this, from the View menu you can:
   - **Refresh Now**—Restart the real-time display of CPU and Memory usage.
   - **Update Speed**—Change the speed to High, Normal, Low, or Paused.
5. View the Directory messages by clicking the **History** button.

Using the controller networking information

Use the System Diagnostics tool (Tools menu > System Diagnostics) to use controller networking information.

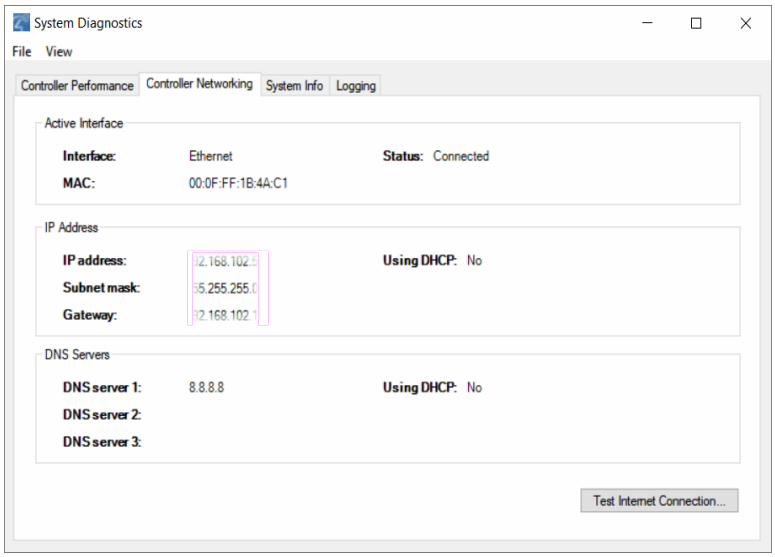
View the information, including:

- Network type
- Connection status
- MAC address
- IP address
- Subnet mask
- Gateway
- DHCP status
- DNS server information

To use controller networking information:

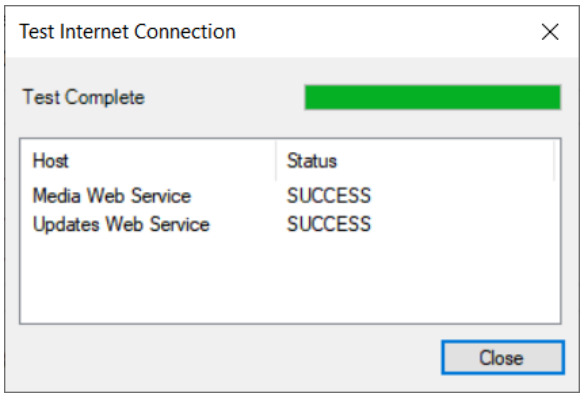
1. Start Composer Pro and connect to a Director.
2. From the Tools menu, select **System Diagnostics**, and then click the **Controller Networking** tab.

3. Ensure that the network information shown is reflective of your network.



4. To test your Internet connection, click the **Test Internet Connection** button. The screen displays the current status of networking services, including the CD & DVD Lookup Service, Media Web Service, and Updates Web Service.

   This screens shows that the example services failed.



5. Click **Close** to exit the dialog box.

Using system information

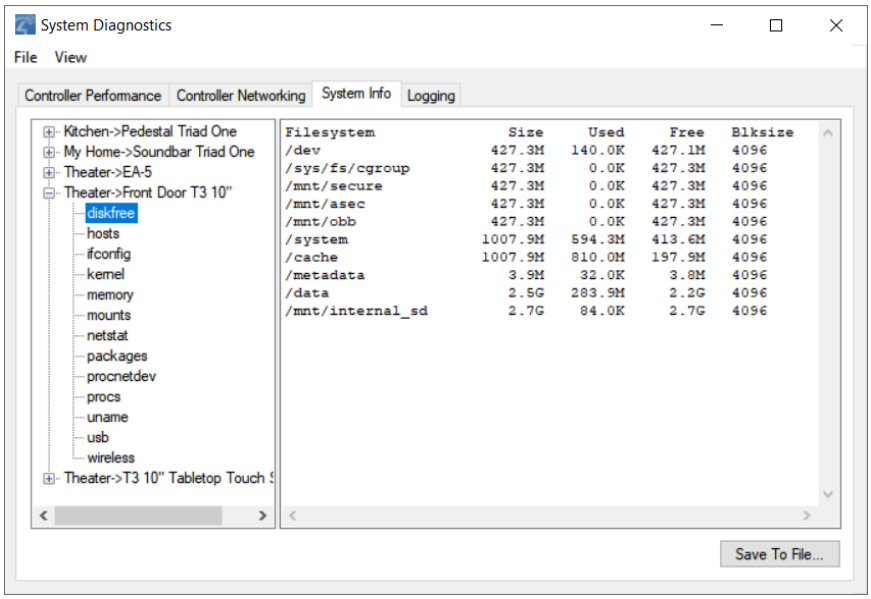
Use the System Diagnostics tool (Tools menu > System Diagnostics) to use system information.

View System Info current configuration settings, state of the primary controller and any other Control4 device in the Control4 system's current project. The information displayed is a summary of several commands.

To use system information:

1. Start Composer Pro and connect to a Director.
2. From the Tools menu, select **System Diagnostics**, and then click the **System Info** tab.

3. Select a **device** or **sub-category** (expanding the list as needed) in the left pane to display the system configuration information in the right pane.



4. To save the displayed information to a file, click **Save to File** and specify the location and name for the file.

Logging diagnostics information

Use the System Diagnostics tool (Tools menu > System Diagnostics) to use the logging feature and log files.

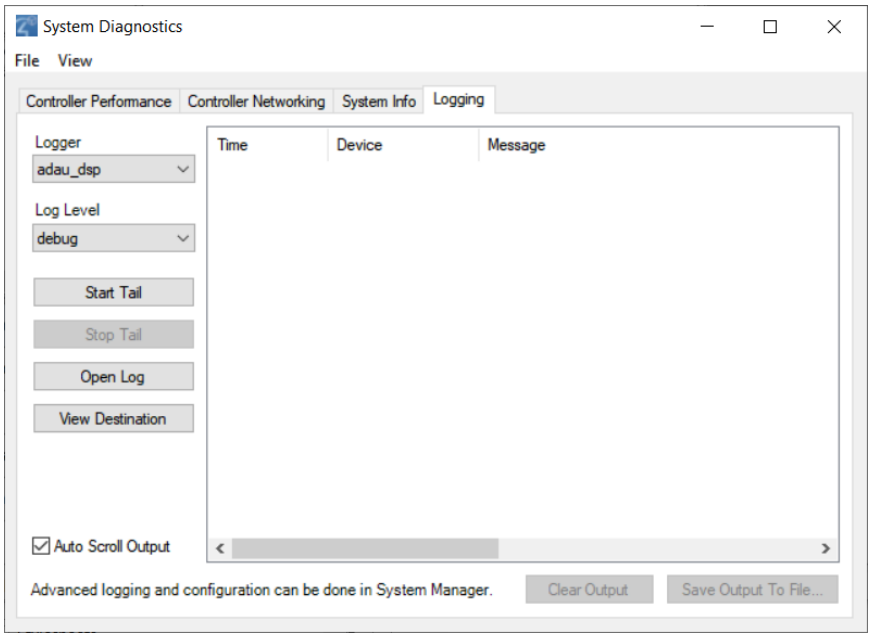
View Logging to configure, start, stop, and schedule diagnostic logging of the Control4 system.

- **Capturing Information While Reproducing a Problem**–When troubleshooting a problem that is reproducible, use the System Diagnostics tool to capture logged information while reproducing the problem to email to Control4 Technical Support.
- **Enabling Logging for Debugging**–When troubleshooting a problem that is not reproducible, connect to the controller, enable logging, and allow the logging to continue running for a specified period of time to capture the problem. The logs are then captured and emailed to Control4 Technical Support.
- Zigbee **and I/O Communications**–These items are available for logging in System Diagnostics.
- **DirectorState.corrupt**–If for any reason Director is unable to load a project file, it is saved to DirectorState.corrupt prior to loading a clean project file (Tools > System Diagnostics > Logging).

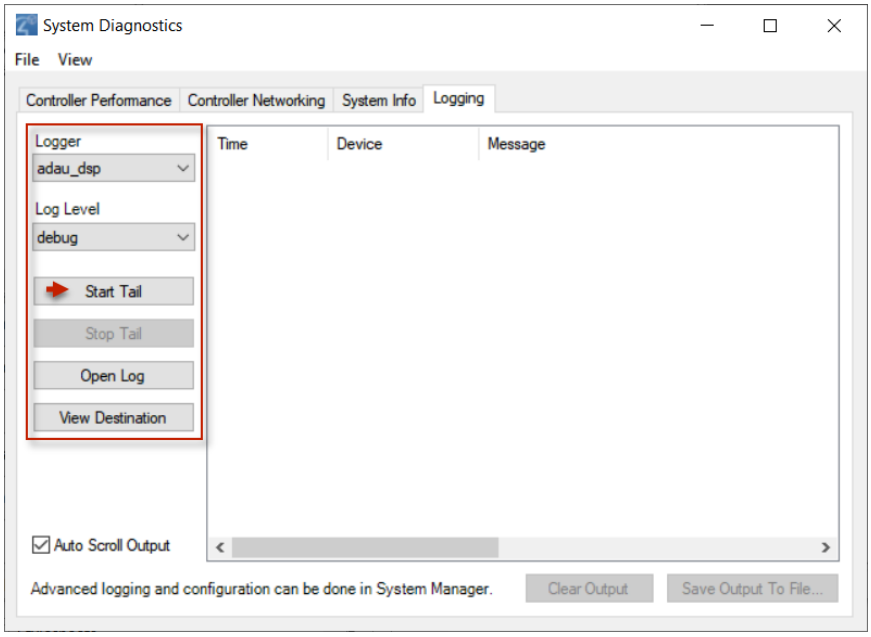
To use system logging:

1. Start Composer Pro and connect to a Director.

2. From the Tools menu, select **System Diagnostics**, and then click the **Logging** tab.



3. To enable logging, select the logging categories and click **Start Tail**
4. The results are displayed.



5. (Optional) To save the log, but continue logging the results, click **Clear Output**. The logging feature remains enabled, but a Save As dialog box lets you specify the location and name of the text version of the log.
6. (Optional) To save the log and disable the logging process, click **Stop Logging**. The logging feature is disabled, but a Save As dialog box lets you specify the location and name of the text version of the log.
7. To view the controller Log, click **Open Controller Log**.

Glossary

4

4Sight: An Internet service that provides a connection to the home automation system any time and from any place worldwide.

A

AAC: Advanced Audio Coding. A successor to the MP3 format. A standard, lossy compression and encoding scheme for digital audio. Touts better sound quality.

action: An activity that occurs when an event prompts it to do so.

agent: In Control4 programming, agents provide the ability to perform complex programming by using functional modules. There are various types of agents; for example, Announcements, Email Notifications, Scheduler, Lighting Scenes, Wakeup, etc.

Anywhere Access: Lets users access and control their Control4 systems remotely using a mobile device or tablet anywhere in the world.

AV: Audio Video

B

Boolean: The computer logic used to determine if a statement is 'True' or 'False.'

button-link binding: The LED colors used based on the device; the Installer can set these colors independently from the device to which the colors are bound.

C

CD: (Compact Disc) - An optical disc that stores digital data. This format is compatible with Control4 products.

client: A software or hardware device that communicates to a server for feedback from the server via an application for the user.

Command: A 'do' statement; actions the Director communicates to a device.

Composer: The Control4 software used to design and define a Control4 home automation system.

Composer Pro: Composer is used to set up and configure Control4 devices to communicate with each other in a home automation system.

conditional: An 'if' statement that asks a true/false questions which are acted upon in Composer programming.

configuration worksheet: Used in Composer software training to design and configure a project in Composer.

connection: Binding or linking devices together in Composer so they can communicate with each other.

contact: Contacts are generally used to monitor the status of something (door, window, water sensor, etc.) and can be hooked up through a security panel or directly using a Control4 controller or Contact/Relay Extender. Contacts connected to a Control4 controller or contact/relay extender can be configured either as NC (normally closed) or NO (normally open).

Control4 App: A Control4 graphical Navigator that runs on mobile devices or a PC or tablet.

Control4 system: A home automation system designed and developed by Control4.

controller: The main device that makes home automation possible. There may be multiple controllers within a Control4 system. The controller that runs Director is referred to as the primary controller.

cover art: An illustration of the cover of a DVD or CD album that displays in the Graphical or on-screen Navigators when playing music or watching videos.

CSV: comma-separated value. Can be used when adding media to a Control4 system.

D

Detective Suite: A set of tools that perform diagnostics tests on the Control4

device: A component that requires a device driver; code that is used to allow the Control4 system to work with that device.

device driver: Every device in the Control4 system needs a corresponding device driver to control the device.

DHCP: DHCP (Dynamic Host Configuration Protocol) - A protocol used between a network client and a DHCP server (usually a router or access point) that dynamically assigns IP addresses from a pre-defined list to clients on a network.

Director: Each Control4 controller (such as a Home Controller HC-500) ships with pre-installed Director software (Linux based) embedded in the device. The Director communicates with Control4 products and third-party products to enable home automation and interaction of individual devices. Director runs the Control4 devices. Composer Pro is the software used to connect to and program a system Director that resides on a controller.

DriverWorks: The DriverWorks SDK is used to create two-way drivers for audio video (AV) and non-AV devices.

DVD: (Digital Versatile Disc) – A media format for video and data storage.

E

end point: The end point is the final point (device) on the defined path over which audio and/or video content is routed to a room. An example of this would be a TV or Receiver.

Ethernet: Uses Ethernet category 5 (CAT5 or CAT5e) wiring to transfer data. Ethernet uses a star network topology that allows multiple points to communicate to a single point. The Speaker Point® and Mini Touch Screens use Ethernet to communicate to the Control4 controller.

event: An action; used to trigger Composer programming when programming Control4 devices.

F

forward-phase dimming (also known as leading edge dimming**):** A type of phase-cut dimming in which the load is dimmed by cutting off the leading edge of each electrical cycle. This type of dimming must be used with magnetic transformers (magnetic low-voltage loads) and works well for many other load types including incandescent and cold cathode. It should not be used with electronic transformers (electronic low-voltage loads) unless the transformer specifications specifically state that Forward Phase dimming is allowed.

file format: A format used by applications to store/read files.

FLAC: Supported by Control4 for software release 1.8, this is a free, open source, lossless audio codec format that supports tagging, cover art and fast seeking. Audio is compressed with no loss in quality.

full duplex: The simultaneous transfer of data in both directions. For example, on a 5” or 7” In-Wall Touch Screen the caller can send out a call and the receiver on the other end of the call can answer via his or her 5” or 7” In-Wall Touch Screen and then respond.

G

gateway: (router)- Provides a means of communicating between two separate networks.

H

home network: A network installed in the customer's home that provides an Ethernet or wireless connection so that Control4 devices can communicate with each other.

home automation system: The Control4 system: a line of home automation products that communicate with each other over Ethernet, Wi-Fi, or Zigbee for a total home automation experience.

I

intercom: A two-way audio and/or video communication among supported Control4 touch screens.

IR: A device controlled using a wireless remote control device. Commands are sent via pulses of infrared light to the device.

K

keypad managed: On a keypad, the LED state is controlled by the buttons on the keypad.

keypad unmanaged: On a keypad, the LED state of the buttons is controlled through programming rather than from the keypad buttons.

L

LCD: (Liquid Crystal Display) - A display used with some Control4 interfaces.

LCD Navigator: An LCD device used to control lighting, music, videos, etc., on an LCD screen.

List Navigator: A system remote control device uses a Navigator that lists the options.

Live Connection: A term used in Composer Pro to indicate an actual connection to the network.

loop: A type of conditional in programming; a 'while' statement; for example, "while the sprinklers are on…"

M

Media Manager: Media information is stored in the Media Manager database, which will permit users to view the media information from the Navigators.

MP3: A music format that makes streaming audio available.

MP4: An audio and video format. Can also store images and subtitles.

N

Navigator: A Control4 Navigator used with the Control4 system to control lights, music, videos, etc. Navigator is software that the customer interacts with using a universal remote control, on-screen Navigator, touch screen, or LCD Screen.

O

on-screen device: Allows you to select the controller (Media Controller or Home Theater Controller) in the room that controls the source for the on-screen display.

P

playlist: A list of songs compiled in a list. The list can be compiled by songwriter, album, song type, or any combination.

Power Over Ethernet (POE): Network cabling that provides Ethernet connectivity and device power over a single cable for Control4 devices.

programming: A machine-readable artificial language used to express computations that can be performed by a device.

project tree: A tree view in Composer where the project is layered by the larger branches (Home, Office, etc.) and then the lower branches (floor, rooms, etc.), and finally to the leaf level (drivers).

R

ramp rate: The rate that a dimmer ramps up its voltage.

relay: An electrical switch that opens and closes. A relay is controlled by another electrical circuit.

remote access: The ability to access a device from a remote location.

Remote Director: Connects you to the home network while working in Composer from a remote location.

retrofit: The ability to set up a home automation system in an existing structure or home. Compare this with new building construction.

reverse-phase dimming (also known as trailing edge dimming**):** A type of phase-cut dimming in which the load is dimmed by cutting off the trailing edge of each electrical cycle. This type of dimming must be used with electronic transformers (electronic low-voltage loads), and works well for many other load types including incandescent; some types of dimmable fluorescent and compact fluorescent; and some LED power supplies. It should never be used with magnetic transformers (magnetic low-voltage loads).

RJ-45 jack: An eight-pin jack used to connect CAT5e network cables to devices through Ethernet signals.

router: See gateway. Functions similar to an AP but with additional functionality for controlling the network; for example, coordinating traffic between different networks.

S

SDDP (Simple Device Discovery Protocol): A protocol developed by Control4 to allow devices to be easily added to a control system. It has the ability to leverage other protocols and work on almost any physical layer. SDDP offers four primary functions:

- Enable devices to use Dynamic Host Configuration Protocol (DHCP) while still being able to identify them uniquely.
- Enable Director to discover devices residing within the Control4 system.
- Enable Director to identify devices residing within the Control4 system.
- Enable automatic installation of drivers for discovered devices.

serial-controlled device: Serial-controlled devices with an RS-232 interface and control protocol often have a higher level of controllability than IR-controlled devices. Examples of serial-controlled devices are projectors, multi-disc DVD changers, etc.

switch: An extension of a router that adds more Ethernet ports to support additional devices or clients on the local network.

system event: An action that causes another action; for example, if a projector turns on, it enables the other devices in the system that work with the projector.

system remote: System remote control

system remote control: A Control4 system remote control is a universal solution that replaces system remote control devices from other manufacturers, and includes programmable buttons. This system remote control can access on-screen (graphical) Navigators.

T

touch screen: A touch screen is a home automation system Navigator that controls the home's lighting, music, videos, and other devices on the home automation system.

U

UI (user interface): The preferred term is *Navigator*. The Control4 interface used with Control4 devices to control home automation, such as touch screens, Control4 apps, or on-screen Navigators.

universal remote: Universal remote control. A third-party remote control that can be programmed to replace other remotes in the home so that only one remote is needed, replacing all others. Control4 system remote control devices are a type of universal remote control.

USB (Universal Serial Bus): A format used with USB sticks that plug in to a USB port on Control4 devices.

V

Virtual Connection: A term used in Composer Pro to indicate a connection outside the network.

Virtual Director: A connection to a virtual controller only (a PC is the Director host rather than the controller). Projects created or edited here are benign until the saved project is loaded onto a controller.

W

WAP: Wireless Access Protocol. The protocol used to enable wireless access of Control4 devices.

Wi-Fi: Uses bi-directional wireless technology to transfer data. Wi-Fi (wireless fidelity) devices “connect” to each other by transmitting and receiving signals on a specific frequency of the radio band using a wireless access point. This technology uses the star network topology. Wi-Fi uses high bandwidth 802.11.

wired network: Uses Ethernet Category 5 (CAT5) wiring to send and receive data between devices connected to a network.

wireless access point: A router extension with an antenna that communicates with Wi-Fi devices and clients in the home. A wireless hub that connects to the wired network, and distributes the wireless signal.

wireless switch: Uses the Zigbee. UL listed dimmer. Single or multi-gang. Has an air gap to cut power.

WLAN: Wireless local area network.

WMA (Windows Media Audio): – Audio data compression technology developed at Microsoft; an audio file format that competes with MP3.

Z

Zigbee: A wireless network that uses bi-directional wireless mesh network technology to transfer messages from one device to another. Unlike a star network topology where devices can only send messages to each other by sending them first to a single central device (which then delivers the message to the recipient device), a mesh network topology allows the devices to forward messages from one device to another, thereby extending the effective range of the network. Uses low bandwidth 802.15.4. 250 devices are allowed per controller but Control4 recommends 125.

Zigbee Pro: The 1.1 version of Zigbee that provides improvements in standardization by: allowing more interoperability with other Control4 devices, support for home automation profiles, and improves the scalability of multiple Zigbee access points.

Zserver: A Zigbee server that contains software which runs on a Control4 HC-class controller.

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