Extron Quantum 305 Ultra Series Videowall Processors User Guide

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Extron Quantum 305 Ultra Series Videowall Processors

Quantum Ultra® Series Videowall Processors • Setup Guide

The Extron Quantum Ultra Series, consisting of the Quantum Ultra 610 and 305, the Quantum Ultra II 610 and 305, and the Quantum Ultra Connect 128 and 84 Videowall Processors, are modular 4K video processors that support ultra-high resolutions up to 2560×1600 and 4096×2160 (4K) @ 60 Hz on inputs and outputs. All models provide customizable output resolutions, input and output image rotation, and mullion compensation. USB, RS-232, and Ethernet interfaces also provide direct connections for control systems.

- The Quantum Ultra 610 has a 6U, 10-slot card frame, or chassis, while the Quantum Ultra 305 has a 3U chassis with five card slots. These models support multiple videowalls with mixed resolutions and screen orientations. They also support edge blend compensation, window border styles, and a variety of source types including picture, RSS, Text, Clock, and VNC. The optional IN SMD 100 input card decodes and displays multiple simultaneous MPEG2, Motion JPEG, and H.264 video streams at up to 60 frames per second. Each input card contains four HDMI or two LAN connectors. The output cards contain either four HDMI or four DTP connectors. Both chassis support any combination of input and output cards. Additional inputs and outputs can be added to a system with use of one or more additional chassis.
- The Quantum Ultra II 610 and Quantum Ultra II 305 have the same features as their respective Quantum Ultra 610
  and Quantum Ultra 305 counterparts, described above. In addition, these models support the IN4HDMI 4K PLUS input and OUT4HDMI 4K PLUS output cards, which provide 4K @ 60 Hz capability on each of the four HDMI connectors.
- The Quantum Ultra Connect 128 and 84 have fixed configurations. The Quantum Ultra Connect 84 has two HDMI input cards and one HDMI output card, while the Quantum Ultra Connect 128 has three HDMI input cards and two HDMI output cards. These card configurations cannot be modified by the user.

The Expansion In and Expansion Out cards provide another option for the Quantum Ultra 610 and Quantum Ultra 305
(Quantum Ultra II and Quantum Ultra Connect models do not support expansion cards). These input and output cards enable up to five Quantum Ultra chassis to be connected together and managed from one primary chassis (see Expansion Cards on page 4). Using the expansion cards, a Quantum Ultra system can be expanded to up to 42 input and output cards.
Control methods for all models include Extron Videowall Configuration Software (VCS), available on the Extron

website, which provides a means of configuring videowall displays and saving window presets. Control is also available via Simple Instruction Set™ (SIS™) or the Express Mobile Software (EMS) for Quantum Ultra on an iOS®, Android®, or Microsoft® tablet device.
This setup guide provides step-by-step instructions for an experienced user to set up and configure a Quantum Ultra Series device. In this guide, the terms “Quantum Ultra Series,” “Quantum Ultra Series device,” “unit,” and “processor” are used interchangeably to refer to all models in the series.

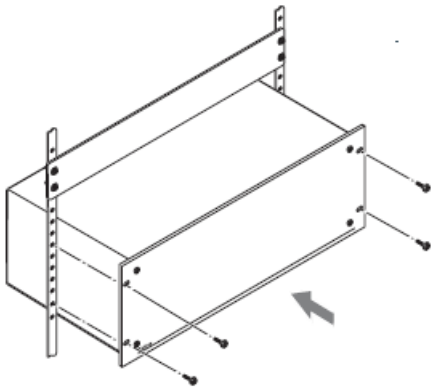
Installation Steps

WARNING: To avoid electric shock or product damage due to condensation, always let the Quantum Ultra become acclimated to ambient temperature and humidity for at least 30 minutes before switching it on. This is very important when you are moving the unit from a cold to a warm location.

ATTENTION:

- All structural steps and electrical installation must be performed by qualified personnel in accordance with local and national building codes and electrical codes.

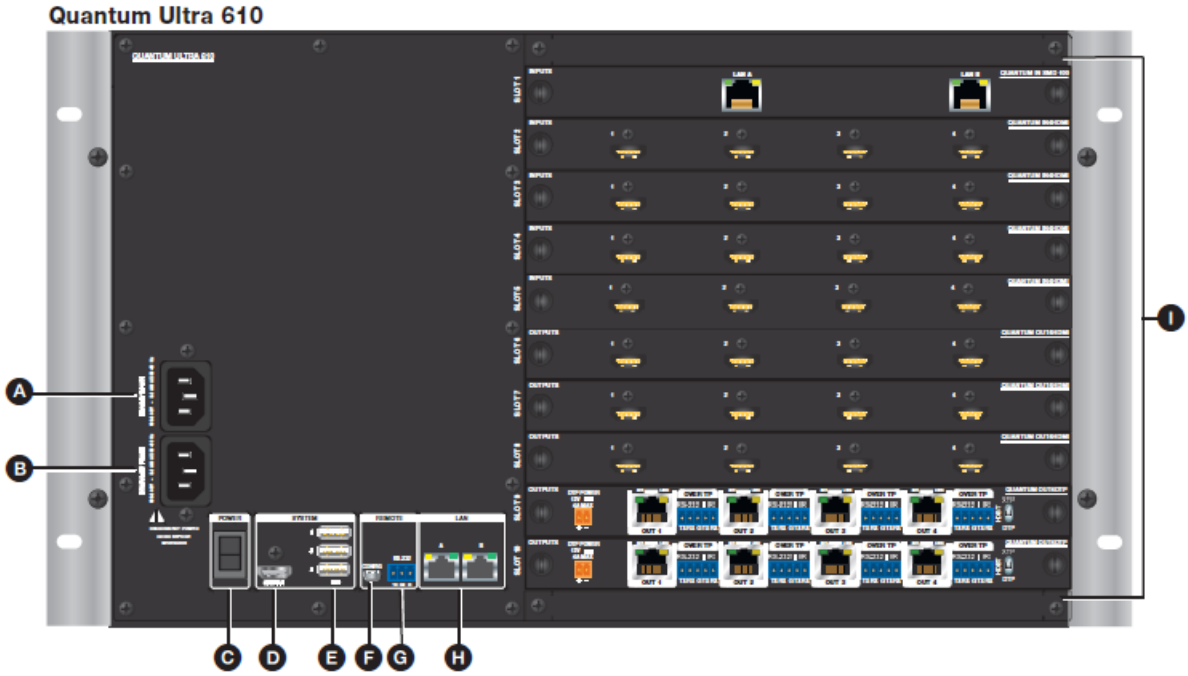
1. Disconnect power from all equipment.
2. (Optional) Mount the unit to a rack using the supplied screws (see the image at right).



3. Connect the video inputs and outputs. Connect HDMI sources to connectors on the installed HDMI input cards. If IN SMD 100 input cards are installed (Quantum Ultra and Quantum Ultra II only), connect the LAN connectors on the cards to a network for streaming sources. Connect DTP receivers (Quantum Ultra and Quantum Ultra II only) or HDMI displays to connectors on the output cards. Secure each HDMI device cable to the connector with a provided LockIt® HDMI Cable Lacing Bracket.
4. Connect a control device — For remote control, connect a control device or a computer to:
    - The RJ-45 LAN A to enable configuration of the Quantum Ultra Series device via SIS commands, VCS, or EMS
    - (Optional) The USB mini B Config connector to enable configuration and control via SIS commands or VCS
    - (Optional) The 3-pole captive screw RS-232 connector to enable serial control via SIS commands
5. Connect power to the Quantum Ultra or Ultra II primary and redundant (optional) IEC connectors.
6. Power on the unit and all connected devices.
7. Download and install VCS on your computer.
8. Configure sources, displays, EDID, and presets for your videowall using VCS (see Configuring the Videowall Using VCS on page 5).

Rear Panel Features and Connections

NOTE: Figure 1 shows the rear panel of a Quantum Ultra 610. The Quantum Ultra II 610 rear panel is identical except for IEC C20 AC connectors and the product name in the upper-left corner. The Quantum Ultra and Ultra II 305, Ultra Connect 84, and Ultra Connect 128 have similar rear panels except they are 3U high, have five card slots, and have no redundant power connector.

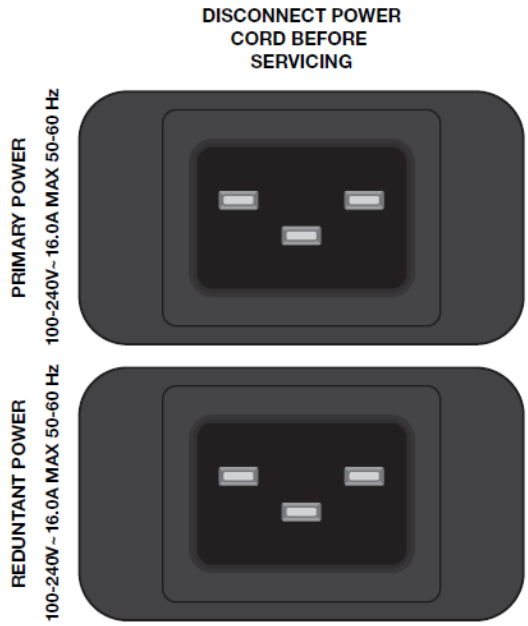


A Primary AC power connector
B Redundant power connector (Quantum Ultra and Ultra II 610 only)
C Power switch
D HDMI Out system output connector
E USB system connectors
F USB Config control connector
G RS-232 control connector
H LAN connectors A and B
I Input and output card slots

Figure 1. Quantum Ultra 610 Rear Panel

A Primary AC power connector — Connect AC power to this IEC connector for the primary power supply.

B Redundant power connector (Quantum Ultra 610 and Ultra II 610 only) — (Optional) Connect a second AC power source to this IEC connector for the secondary power supply to provide uninterrupted operation in the event of failure of the primary supply.



NOTE: The Quantum Ultra II 610 has IEC C20 power connectors (shown at right), while the Quantum Ultra and Quantum Ultra II 305 models have standard US IEC connectors. The Quantum Ultra II requires an IEC C19 power cord to connect AC power.

For Quantum Ultra II 610 only:

- North America — Connect the equipment to a 100-240 VAC, 50-60 Hz, 20 A protected power source using a power supply cord with a C19 coupler and either a NEMA 5-20 plug (125 V) or NEMA 6-20 plug (250 V).
- Other regions — Connect the equipment to a 200-240 VAC, 50-60 Hz power source using a power supply cord with a C19 coupler and a plug configuration of 7 A minimum.

C Power switch — Press this momentary rocker switch to power the unit off and on.

- If the unit is off, momentarily pressing this switch powers it on.
- If the unit is on, pressing and holding this switch for approximately 5 seconds powers it down.
- If the unit is logged into the Quantum Ultra Series device operating system, a momentary press of this switch powers off the device.

D HDMI Out system output connector — (Optional) Connect an HDMI monitor to this female HDMI connector to viewactivity and interactions with the embedded operating system.

E USB system connectors — (Optional) Connect a flash drive or human interface devices (HIDs) such as a keyboard or mouse to one or more of these three USB A connectors to enable interaction with the embedded operating system.
F USB Config control connector — Connect a computer to this USB connector to enable control of the Quantum Ultra Series device via VCS and SIS commands.

G RS-232 control connector — Connect a control system or computer to this 3-pole, 3.5 mm captive screw connector to enable control of the Quantum Ultra Series device via SIS commands. RS-232 protocol for this port is 9600 baud, 1 stop bit, no parity, 8 data bits, and no flow control.

H LAN connectors A and B — Connect one or both of these RJ-45 Ethernet connectors to a network to access:

- A computer with VCS and, optionally, EMS installed, to set up the videowall (see Configuring the Videowall Using VCS on page 5).
- A control device such as an Extron IP Link Pro or IPCP Pro for AV control of the Quantum Ultra Series device.
- A network with Virtual Network Computing (VNC) servers to stream desktops to the Quantum Ultra or Ultra II device.

  NOTE: For expansion systems, the LAN A ports of all chassis in the system must be connected to the same network. If desired, LAN B ports of any of the chassis can be connected to a separate network for VNC or RSS sources.
- **Inputs —** Each HDMI and HDMI 4K PLUS input card has four female HDMI connectors, so that up to four HDMI sources can be connected to it. For the Quantum Ultra and Ultra II 610 and 305, each IN SMD 100 input card has two LAN connectors, each of which can be connected to a network to enable decoding and displaying of multiple streams.
- **Outputs —** Each HDMI and HDMI 4K PLUS output card has either four HDMI connectors or, for Quantum Ultra and Ultra II 610 and 305, four DTP connectors. Up to four HDMI displays or DTP receivers can connect to these cards.
- The Quantum Ultra Connect 84 has two HDMI input cards and one HDMI output card, while the Connect 128 has three HDMI input and two HDMI output cards. These card configurations are fixed and cannot be modified by the user.
- Each expansion input and output card has three 12-fiber push-on (MPO) connectors to which another chassis in an expansion system can be connected via three MPO cables (Quantum Ultra 610 and 305 only, see Expansion Cards on page 4 for more information).

  NOTE: The recommended cable type for the HDMI input and output connections is single link, high-speed, HDMI video cable with a maximum length of 25 feet (7.6 meters). Dual link signals are not supported. To connect DVI sources or displays to an HDMI connector, use a DVI-to-HDMI adapter.

Card Installation Order

When the Quantum Ultra Series device is assembled at the factory, all the input cards are installed in slots above the output cards in the chassis. If installing cards yourself, do not intersperse input cards with output cards.

NOTE: The expansion output and input cards have special rules for placement in card slots (see Expansion Card Locations in the Chassis on page 4 for more information).

Each card slot can contain either an input or an output card (at least one input and one output card must be installed). However, because all the input cards must be installed together above the output cards in the chassis, slot 1 cannot contain an output card and slot 10 of the 610 models or slot 5 of the 305 models cannot contain an input card.
All input cards of the same type (IN SMD 100, HDMI, and HDMI 4K PLUS) must be installed in adjacent slots, as must all output cards of the same type (HDMI, DTP, and HDMI 4K PLUS). Do not intersperse different card types.

- Install the cards in this order: IN SMD 100, IN4HDMI, IN4HDMI 4K PLUS, OUT4HDMI, OUT4DTP, OUT4HDMI 4K PLUS.
- Do not leave empty slots between cards in the chassis. Empty card slots must be at the bottom of the card stack.

Expansion Cards

The Expansion IN (input) and Expansion OUT (output) cards are used to interconnect up to five chassis in a chain. All chassis in an expansion system are connected to the same network via their LAN A ports. The first (primary) chassis in the signal chain is always a Quantum Ultra 610, and controls the other (secondary) chassis in the chain. The last unit in the chain can be either a Quantum Ultra 305 or 610 (expansion cards are not supported by the Quantum Ultra II or Quantum Ultra Connect models).

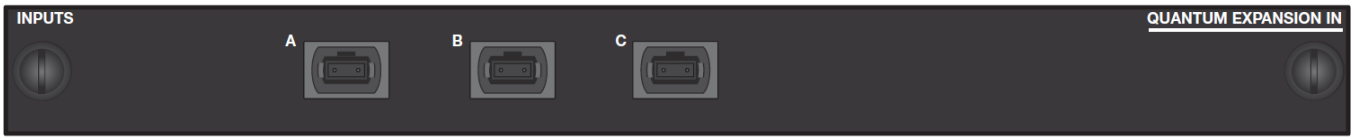


Figure 2. Expansion In Card

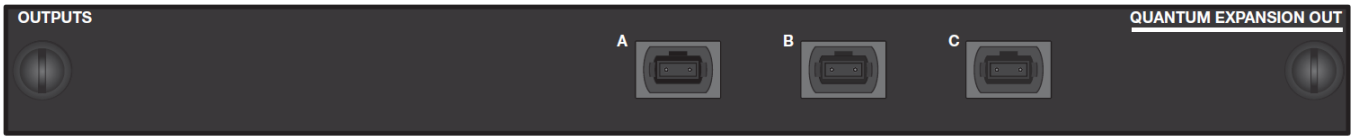


Figure 3. Expansion Out Card

Each input and output expansion card contains three MPO connectors,labeled A, B, and C. The chassis in the system are linked to each other through these connectors. Two lengths of MPO M-M cables are available: 1 meter (3.3 feet), and 10 meters (32.8 feet). Three cables of the either length are needed for each pair of output-input expansion cards to be connected together.

Expansion Card Locations in the Chassis

In the expansion units, cards are factory-installed in the chassis in the order listed below:

On the primary chassis:

- Non-expansion input and output cards are installed as described under Card Installation Order on page 4 (see 1 in the image at right).
- The Expansion OUT card is installed in the last slot (slot 10) of the primary chassis to enable connection to the secondary chassis (2).

On the secondary chassis:

- The Expansion IN card is installed in the first slot (slot 1) to accept the connection from the Expansion OUT card in the previous chassis (see 1 in the image at right).
- Additional non-expansion input or output cards are installed following the installation order started in the previous chassis.
  In the example at right, non-expansion input cards (2) are installed below the Expansion IN card. Non-expansion output cards (3) follow the input cards. The Expansion OUT card (4) is in the last slot.
  NOTES:
  - The last chassis in the chain does not contain an Expansion OUT card.
  - 4K PLUS input and output cards are currently not supported in expansion systems.
  - So long as the expansion cards do not interrupt an otherwise normal flow of card locations, any expansion system should be valid.

Connecting Expansion Cards

1. Connect three MPO cables between Expansion OUT card connectors A, B, and C of the primary chassis and Expansion IN card connectors A, B, and C of the first secondary chassis in the chain. Always connect output A to input A, output B to input B, and output C to input C (see figure 4 on page 5).
2. Connect the three expansion outputs of each subsequent secondary chassis to the expansion inputs of the

next chassis until all the desired chassis (up to five) are connected (figure 4).

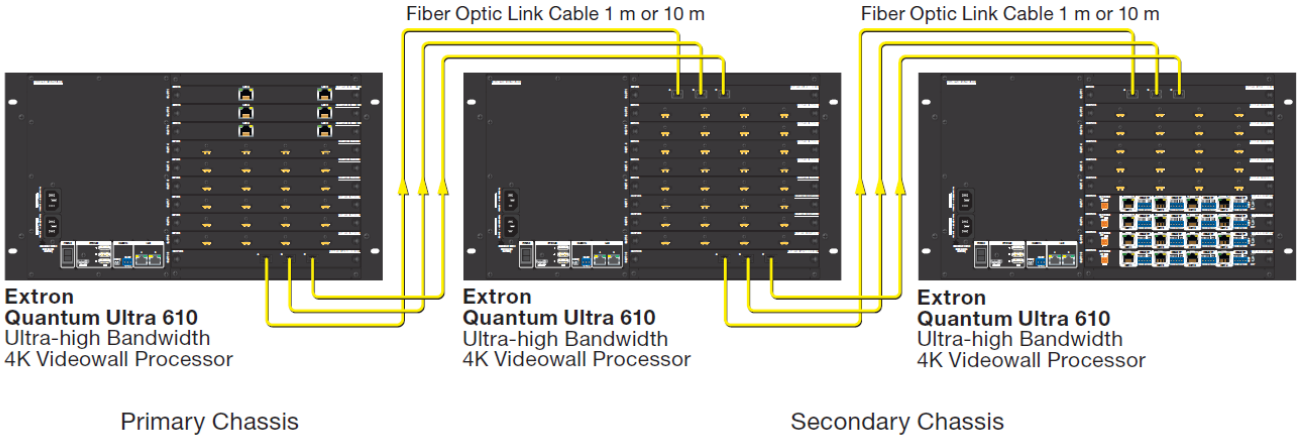


Figure 4. Expansion Card Connection

3. Connect the LAN A port (see figure 1, H, on page 1) of each chassis in the chain to the same network.
4. If desired, connect the LAN B port of all of the chassis to a different network for VNC or RSS sources.
5. Use VCS to configure the videowall for the multi-chassis system (see Starting the VCS Program with Expansion Cards on page 7, and the VCS Help File for more information).

Configuring the Videowall Using VCS

This section describes how to set up the videowall (create a project) using the VCS program to configure and control the Quantum Ultra Series from the computer. For detailed information, see the VCS Help File, accessible from within VCS.

Starting VCS

1. Download VCS from **www.extron.com** (see the Quantum Ultra Series User Guide, also available on the Extron website, for instructions).
2. Open the software program either by double-clicking the VCS icon (shown at right) that is placed on your desktop during installation, or by clicking Start > Extron Electronics > Videowall Configuration Software.
   The Extron VCS program opens with the Start screen, Create New Project tab (see figure 5 on the next page) and a list of devices supported by the current version of VCS.

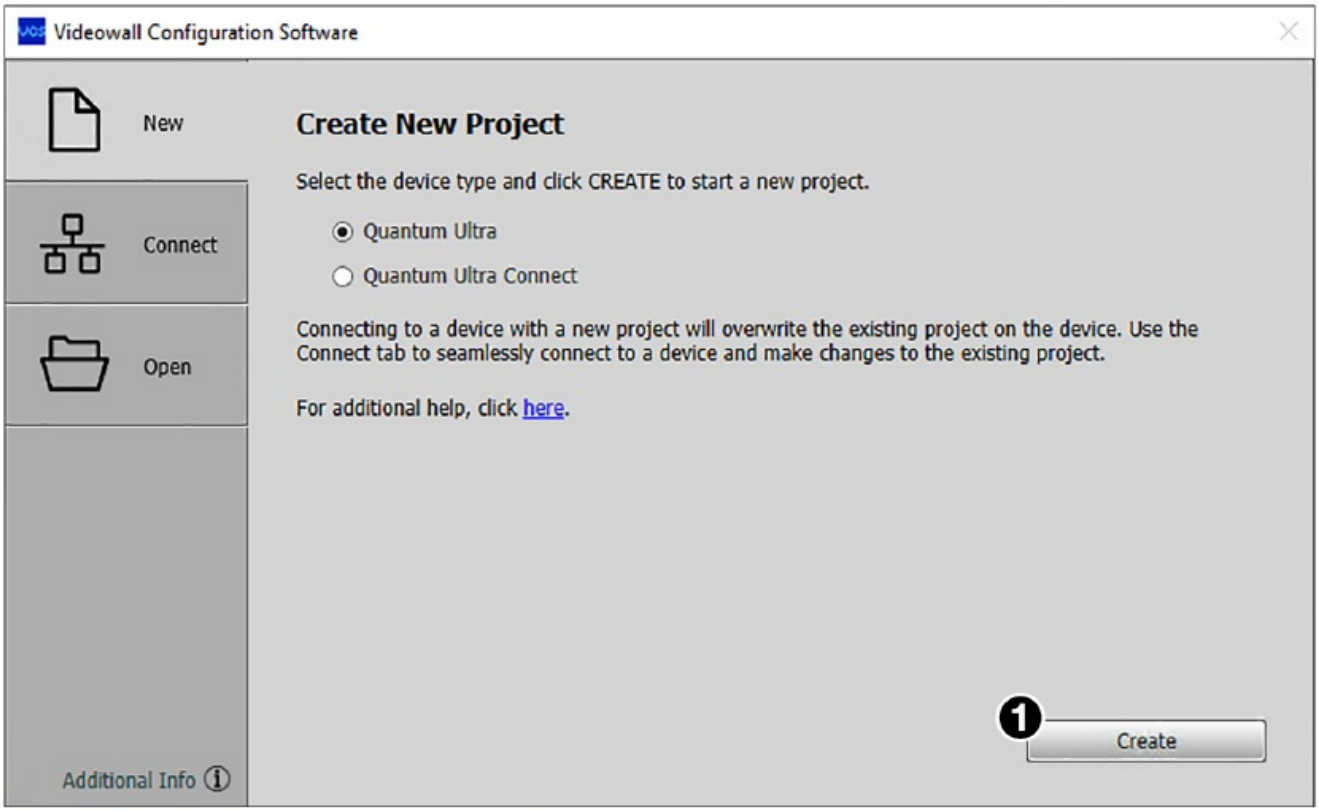


Figure 5. VCS Start Screen, Create New Project Tab

3. Select the radio button for your device and click the Create button (see figure 5, 1). VCS searches for Quantum Ultra Series devices that are on the network. The Connect to Device screen is displayed. The Select Device(s) to Add panel (see figure 6, 1, on the next page) displays all detected devices of the type selected on the Create New Project screen.

   NOTE: A gateway IP address is required on the PC running VCS, in order for the Quantum Ultra Series device to be detected. The gateway address need not be valid or on the same subnet.

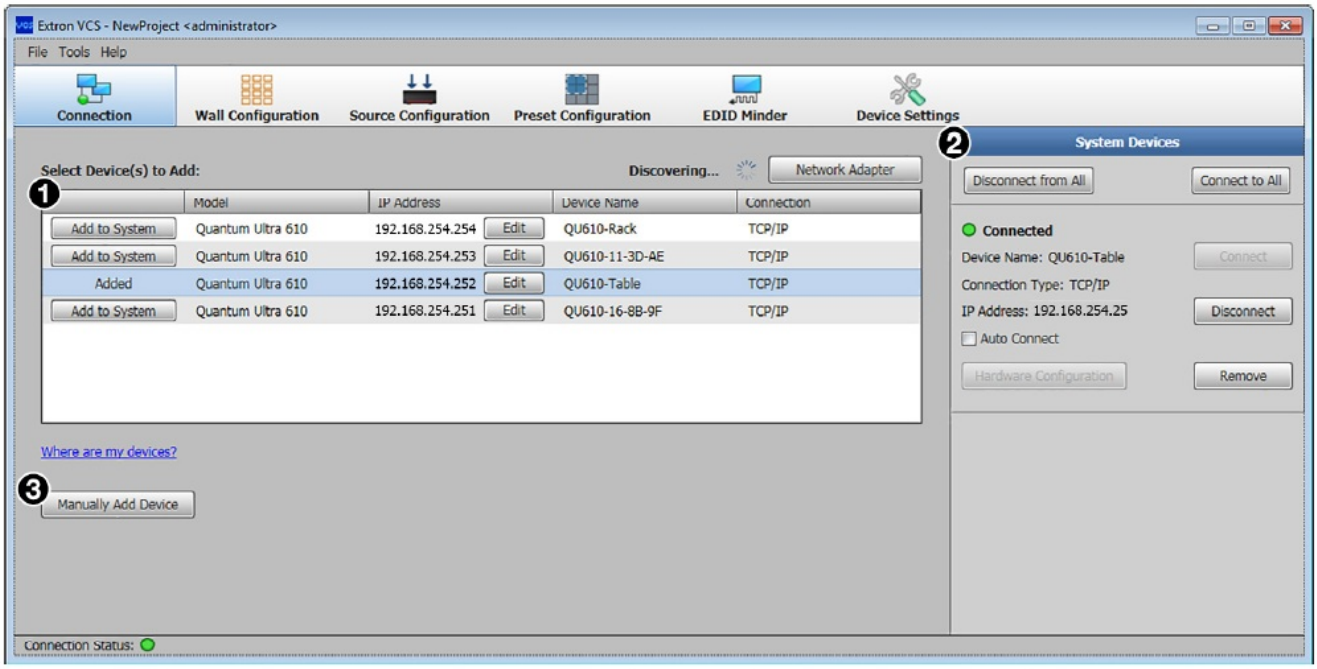


Figure 6. Connection Screen

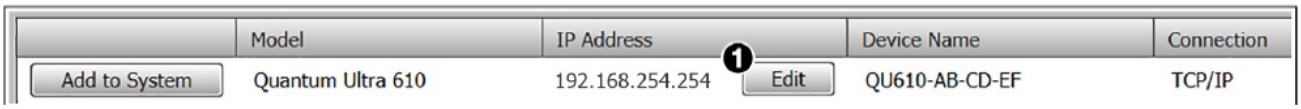
4. Locate your Quantum Ultra Series device on the device list and click the Add to System button at the left of the device name. If a project already exists on the selected device, a prompt opens, asking if you want to apply your new project to the device (deleting the previous project). Click OK to continue creating the project (or Cancel to stop the procedure). Connection information is displayed in the System Devices panel. If the

computer is successfully connected to the device, the word Connected is displayed, preceded by a green dot, in the System Devices panel (see figure 6, 2).

NOTE: Multiple Quantum Ultra and Ultra II 610 and 305 devices can be added to a product. Only one Quantum Ultra Connect device can be added.

5. Edit IP address settings for your device as needed.

   a. In the Select Device(s) to Add panel, click the Edit button (see 1 in the image below).



   b. The Communication Settings dialog box opens. In this window, enter a new IP address and edit other IP settings as desired.

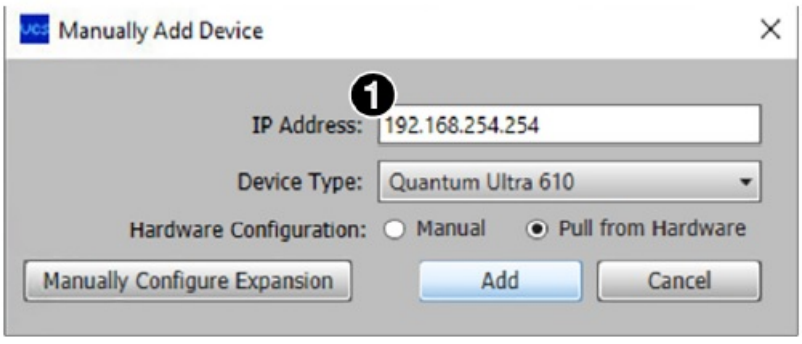
   To enable Dynamic Host Configuration Protocol (DHCP), select the DHCP checkbox. When this box is selected, an available IP address is assigned automatically to the Quantum Ultra Series device when it is connected to a supporting network. (When this checkbox is selected, all other IP settings fields become read-only.)

If you added this device manually, click the Device Settings button (shown at right) on the VCS taskbar. On the Device Details screen, click the Communication Settings button to display the Communication Settings window. If the device cannot be detected or manually added, connect to it using USB or RS-232 and configure the IP address using SIS commands.

Manually adding devices

If you do not see your Quantum Ultra Series device in the Select Device(s) to Add panel (see step 3 starting on the previous page), you can add the device manually:

1. Click the Manually Add Device button (see figure 6, 3 on the previous page). The Manually Add Device window opens (shown at right).
2. In the IP Address field, enter the address of the Quantum Ultra Series device to be connected and select the Pull from Hardware radio button (see 1 in the image at right).



3. Select the device type from the Device Type drop-down list.

   Quantum Ultra or Ultra II devices can be selected if a Quantum Ultraor Ultra II 305 or 610 project was created.

   Quantum Ultra Connect devices can be selected if a Quantum Ultra Connect 84 or 128 project was created.
4. Click Add. The connection information for the device is displayed in the System Devices panel (see figure 6, 2

on the previous page). A unit added by this method is not displayed in the Select Device(s) to Add panel.

Starting the VCS Program with Expansion Cards

There are some differences in the procedure for starting a VCS project for a system containing expansion cards. To set up an expansion project:

1. On the Start screen, select the Quantum Ultra 305/610 radio button.
   NOTE: Expansion cards are not supported on the Quantum Ultra II models.
2. On the New Project screen, each listed device with expansion cards is preceded by a Configure Expansion button (in place of the Add to System button, see figure 7, 1). Click the Configure Expansion button for any one of the expansion devices.(Figure 7 shows an expansion system with two chassis. There can be up to five chassis in an expansion system.)

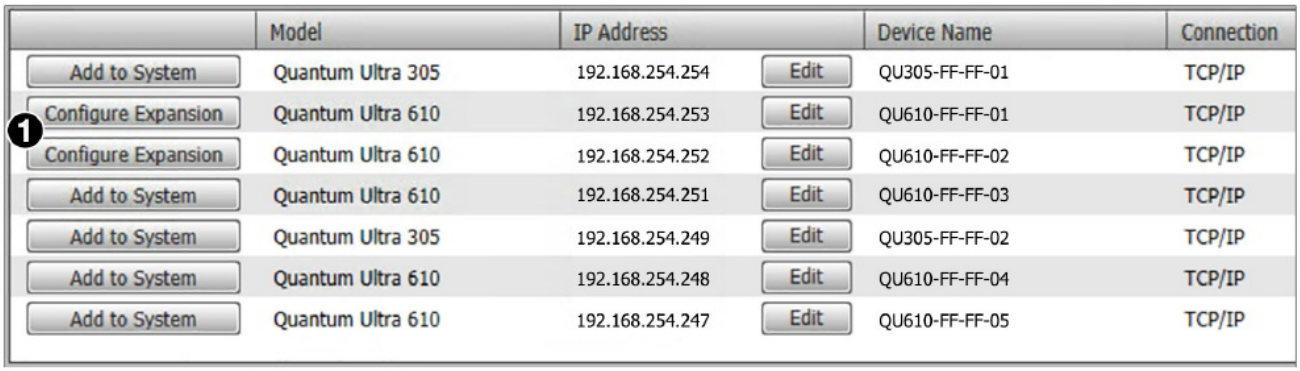
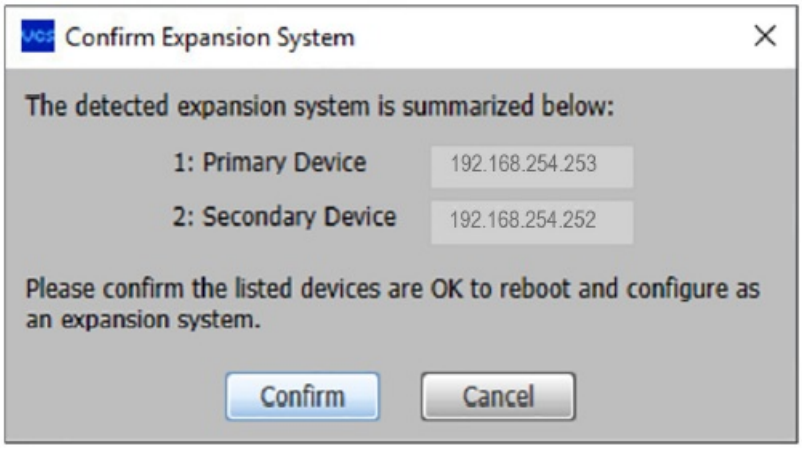


Figure 7. Connection Screen for an Expansion System

3. 3. The Confirm Expansion System window opens, showing the IP addresses of all Quantum Ultra Series devices with expansion cards, listed in their order in the chain, with the primary device at the top. If all the information on this screen is correct, click the Confirm button at the bottom of the screen (see the image at right).
   NOTE: If the IP address of a connected device in the chain is not found, this window indicates which device is missing. Click Cancel to return to the New Project connection screen.



4. A prompt window appears, indicating that the initial configuration is complete and that the system will reboot. Click OK on the prompt to
   close it. The reboot starts automatically and takes a few minutes to complete.
5. When the connection screen is displayed, the device list contains one item, the primary chassis, representing the expansion system, showing Quantum Ultra Expansion in the Model column (see figure 8, 1). The information in the rest of the columns (IP Address, Device Name, and Connection columns) applies to the primary device in the chain.

Click the Add to System button in front of the Quantum Ultra Expansion line (2) to add the expansion chain to the System Devices panel (see figure 6, 2 on page 6).

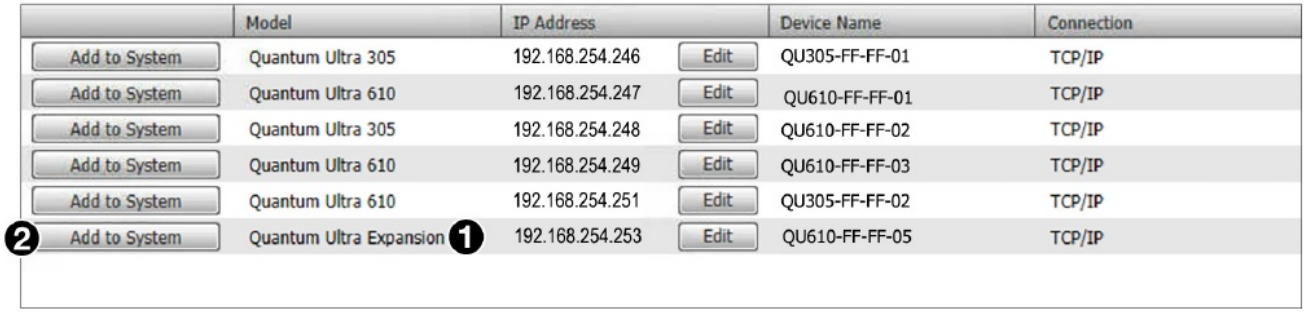
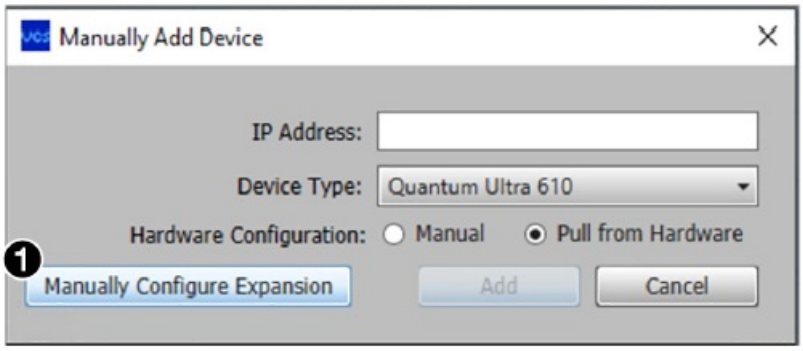


Figure 8. Quantum Ultra Expansion Chain in the Device Discovery Panel

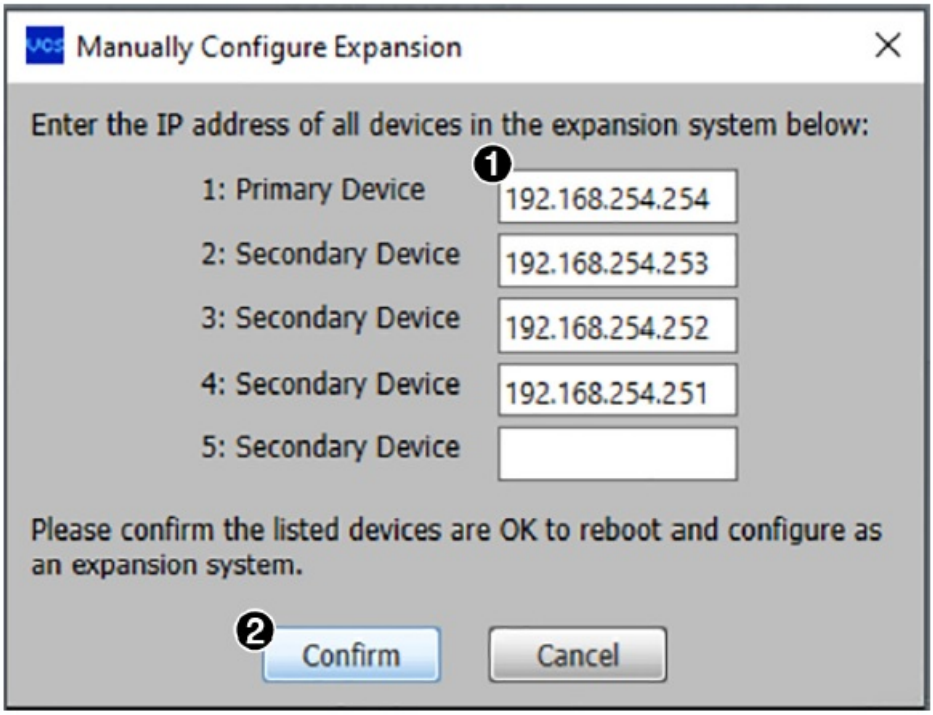
6. Configure the videowall (see Configuring the Videowall Using VCS on page 5).

Adding expansion devices manually

If no expansion device appears on the New Project discovery screen,add the expansion system manually as follows:



1. On the New Project connection screen, click the Manually Add Device button (see figure 6, 3 on page 6).
2. On the Manually Add Device window, click the Manually Add Expansion Device button (see 1 in the image at right). Ignore the other fields.
3. On the Manually Configure Expansion screen, enter the IP addresses of the devices in the expansion. Be sure to enter the addresses in the order the devices are connected in the chain, with the primary device address in the top (first) field (see 1 in the image at right).
4. Click Confirm. The sy stem restarts, then after approximately 2 minutes displays the expansion system a single item on the device list with the mod el name Quantum Ultra Expansion (see figure 8, 1).
5. Go to step 4 of the “Starting the VCS Program with Expansion Cards” procedure, above, and complete the procedure as described.



NOTE: If the Quantum Ultra Expansion line does not appear on the connection screen, add the primary device manually (see Manually adding devices on page 7).

Reconfiguring an expansion system
To redo the configuration or repurpose the chassis into different systems:

1. Connect to the expansion system.
2. From the Tools menu, select Reset Devices.
3. In the Reset Devices window, select Reset Device Settings and Delete All Files (Retains TCP/IP Settings) (the second radio button).
4. Click Reset. The system reboots. After approximately 2 minutes, the expansion devices appear listed separately in the device discovery panel, as shown in figure 7 on page 7.

Setting Up the Videowall

To use the VCS program to configure the videowall, start by setting up a project. In the project, you can define the Quantum Ultra Series processors, create one or more videowalls, set up video sources and outputs, and create presets. At the top of the Quantum Ultra Series screen is a row of task buttons. After connecting to the desired Quantum Ultra Series device (processor or chassis) or devices, click the task buttons to access screens for the setup tasks. For best results, perform the following setup steps in the order shown.

Wall Configuration
Click the Wall Configuration button (shown at right) to configure the outputs and to select the output channels on the Quantum Ultra Series device for the videowall. The Wall Configuration window opens, providing a Canvas to set up the wall (see figure 9).

1. Name the Canvas. By default, the first videowall configuration (Canvas) you define is named Canvas 1 (see figure 9, 1).

   In the Canvas Name field, you can customize the name if desired (2). Each Canvas that is created (a maximum of 10) is assigned an incremented number that appears in the Canvas ID field and is used in SIS commands.

   NOTE: The Quantum Ultra Connect models support only one canvas.
2. Select the number of displays. In the spin boxes labeled Number of Displays (3) select or enter the number of displays for the columns and the rows of the videowall. In the example in figure 99, the wall has five columns by three rows (4).

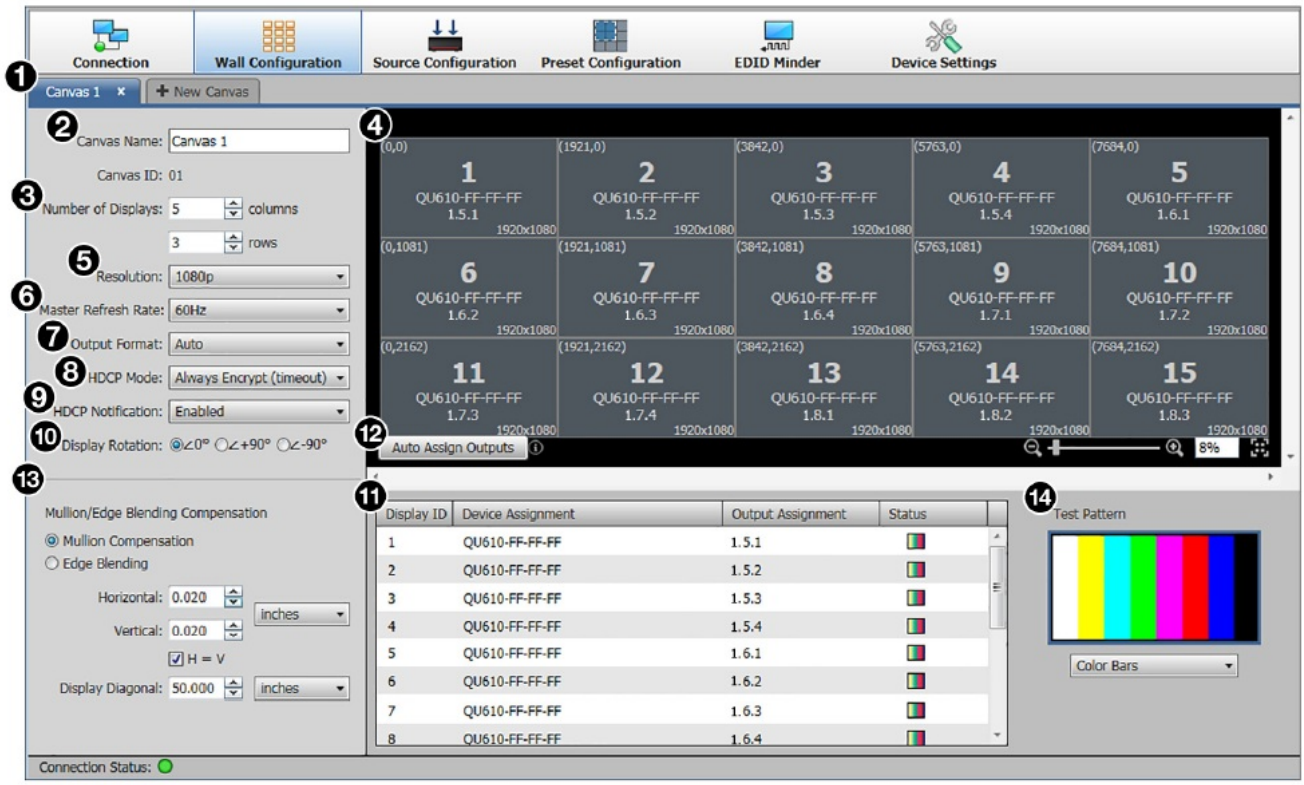
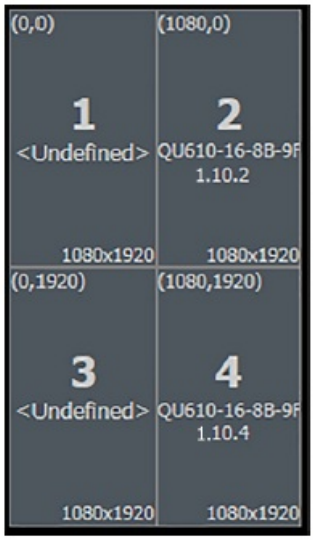


Figure 9. Wall Configuration Window

3. Configure the outputs. The settings on the menus in the output configuration panel apply to all displays in the Canvas:
   - Resolution (see figure 9, 5 — From this drop-down list, select the output resolution for the displays.
   - Master Refresh Rate (6) — From this drop-down list, select the refresh rate for the displays.

     NOTE: Quantum Ultra and Ultra II 610 and 305 only: This rate not only applies to all the displays on the first Canvas, but limits selectable refresh rates on all other Canvases that are added (see the VCS Help File to use multiple Canvases).
   - Output format (see figure 9, 7 on the previous page) — From this drop-down list, select the output format (AUTO, DVI RGB 444 or HDMI RGB 444). The default is Auto.
   - HDCP Mode (8) — From this drop-down list, select how to manage HDCP encryption on the outputs. You can select to always encrypt the output (default), to never encrypt the output, or to attempt to encrypt the output for 1 minute, then revert to an unencrypted state (not allowing display of HDCP encrypted sources if authentication with the sink device fails).
   - HDCP Notification (9) — From this drop-down list, select to enable or disable a green screen notification when the input signal contains HDCP-protected content and the outputs cannot be encrypted.
   - Display Rotation (¢) — In this panel, select the radio button for the angle at which the displays physically rotate: +90° (90 degrees clockwise), -90° (90 degrees counterclockwise) or 0° (no rotation). The example

at right shows a videowall that has four rotated displays.



NOTE: The OUT4HDMI cards support output rotation only on the even-numbered channels and disable the odd numbered channels. The OUT4HDMI 4K PLUS cards support output rotation on all channels.

4. Define the Quantum Ultra Series device and output in the output assignment panel (£) for each display on the videowall, using either of the following methods:

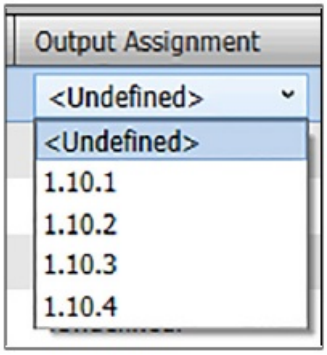
- **Automatic method**

  (Recommended) Click the Auto Assign Outputs button (¤) to automatically assign a device and an output channel to each display in the videowall. Output card slot and connector numbers are assigned to the displays in numerical order. The displays are shown on the Canvas numbered from left to right, starting in the upper-left corner with Display 1.

  The number format for the display locations is n.n.n. The first numeral indicates the chassis number. If there is a single chassis, this number is 1. In an expansion system, this number is the order number of the chassis in the chain. In all systems, the second numeral is the card slot, and the third is the connector (channel) number. For example, 3.9.2 represents chassis 3, card slot 9, connector 2.

- **Manual method**

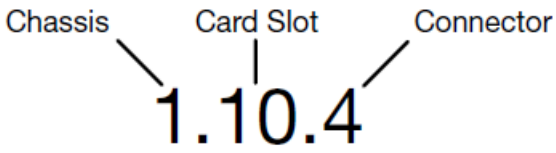
  a. Select a Quantum Ultra Series device for a display on the videowall. Click <Undefined> beside the number of the display to be assigned, and select a device from the drop-down list.



  b. Select a chassis, output card, and slot number for the display. Click <Undefined> in the Output Assignment column, in the row of the display to be assigned. On the output drop-down list, all output connectors are listed in order by chassis number (unless the unit is part of an expansion system, this number is always 1), then card slot number, then connector number.

  In the example at right, number 1.10.4 represents connector 4 on the Chassis output card in slot 10 of

chassis 1.



Repeat these steps for each display on the videowall to which you want to assign a Quantum Ultra Series device and output connector. (This guide assumes you are configuring a videowall with one device. For information on configuring a videowall with multiple processors, see the VCS Help File).

5. In the Mullion/Edge Blending Compensation panel (¥) select either of the following radio buttons (for more detailed information, see the VCS Help File):
   - Mullion Compensation — Displays controls that let you specify the mullion space around the displays in pixels, inches, centimeters, or millimeters. If not using pixel values, you must also enter the diagonal size of the screen.
   - Edge Blending (Quantum Ultra or Ultra II 610 and 305 only) — Displays controls that let you specify the amount in pixels of horizontal and vertical overlap of the videowall outputs.
6. If desired, select a test pattern from the menu in the Test Pattern panel (¦) to aid in optimizing the wall configuration.

Source Configuration

Each source used in a project must have a corresponding source definition in VCS. To configure the sources:

1. On the taskbar, click the Source Configuration button (see figure 10, 1 on the next page) to display the Source Configuration screen.
2. Select a source type. In the Source Configuration Tree (left panel), click a source type to add (2). Depending on the cards installed in your unit, HDMI, IP Source, or both may be listed. Picture, Clock, VNC, Text, and Really Simple Syndication (RSS) source types are always available for configuration.

   NOTES:
   - Source type selection is available only on Quantum Ultra or Ultra II 610 and 305. The Quantum Ultra Connect models support only HDMI sources.
   - The number format for the sources listed in the source tree is n.n.n, same as the outputs on the Wall Configuration screen. The first digit indicates the chassis order number (if it is not an expansion system, this number is always 1). The second digit is the card slot and the third digit is the connector (channel) number. For example, 1.4.1 represents chassis 1, card slot 4, connector 1.

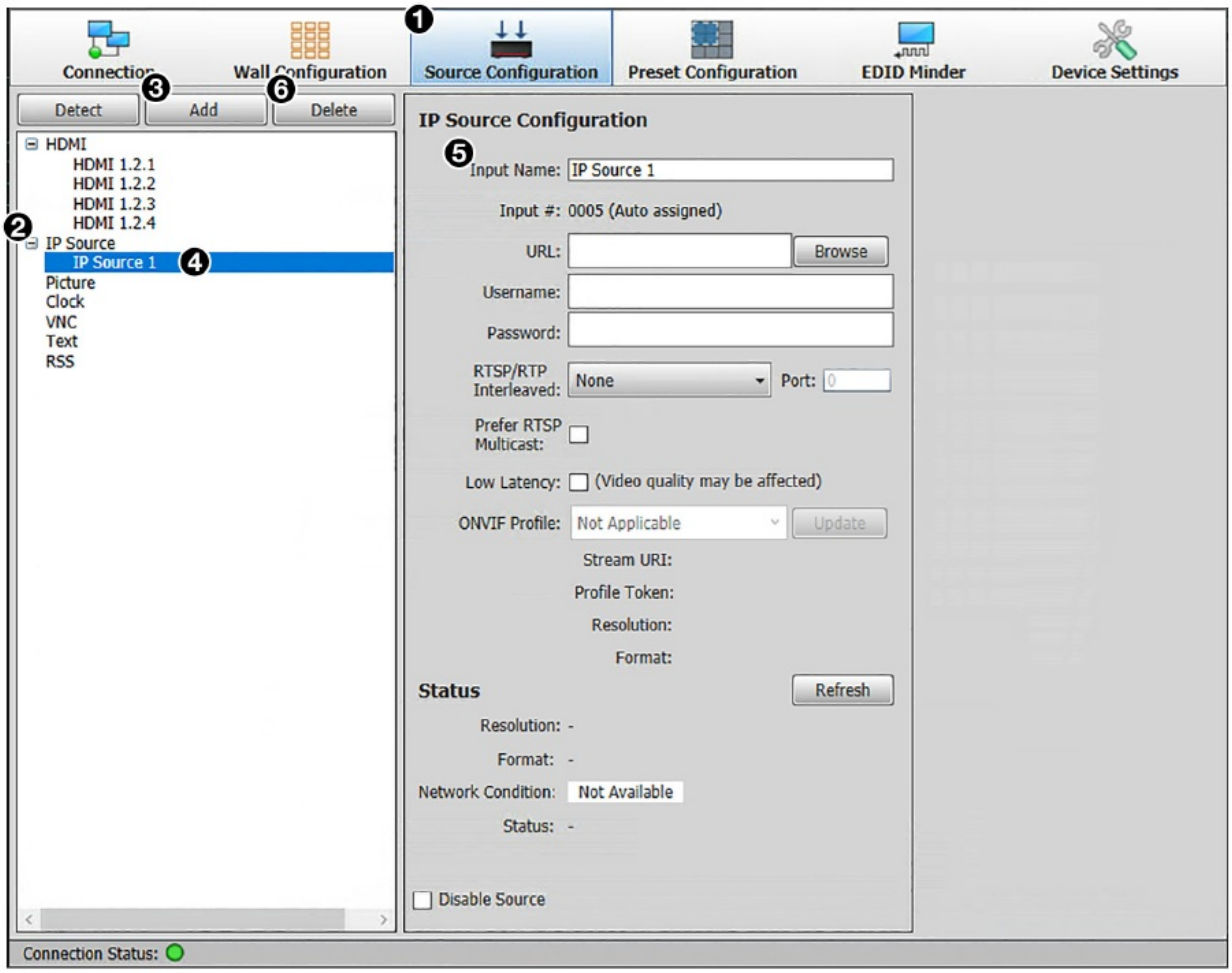


Figure 10. Source Configuration Window (IP Source Example)

3. Add a source. Click Add (see figure 10, 3) to add a source of the selected type, or right-click the source type to add and select Add from the pop-up menu. One or more source names are added in the Source Configuration Tree below the source type (4).

   NOTE: The number of sources added depends on the cards installed in your unit. For example, if one HDMI input card is installed, selecting HDMI displays four source names, as shown in figure 10).

4. Configure the selected source. In the Source Configuration Tree, click the source name to be configured. (It may be necessary to click the + sign to the left of the source type to expand the source list before selecting a source). A configuration window for the selected source opens in the center panel of the screen, with the default name of the source entered in the Input Name field (5). Fill in the information in the source configuration window to set up the source.

   NOTE: Quantum Ultra and Ultra II 610 and 305 only: If adding a picture or an IP source, click the Detect button (6) above the Source Configuration Tree to:

   - Open a window listing the URLs of available streams (IP Source), detected using Session Announcement Protocol (SAP) and Open Network Video Interface Forum (ONVIF) protocols. By default, the IP addresses on the IN SMD 100 cards are set to DHCP On.
   - List the image files available on your Quantum Ultra Series chassis (Picture).

5. Add more sources as desired. Repeat steps 2 through 4 to add and configure additional sources (see the VCS Help File for details on configuring the different sources.

Preset Configuration

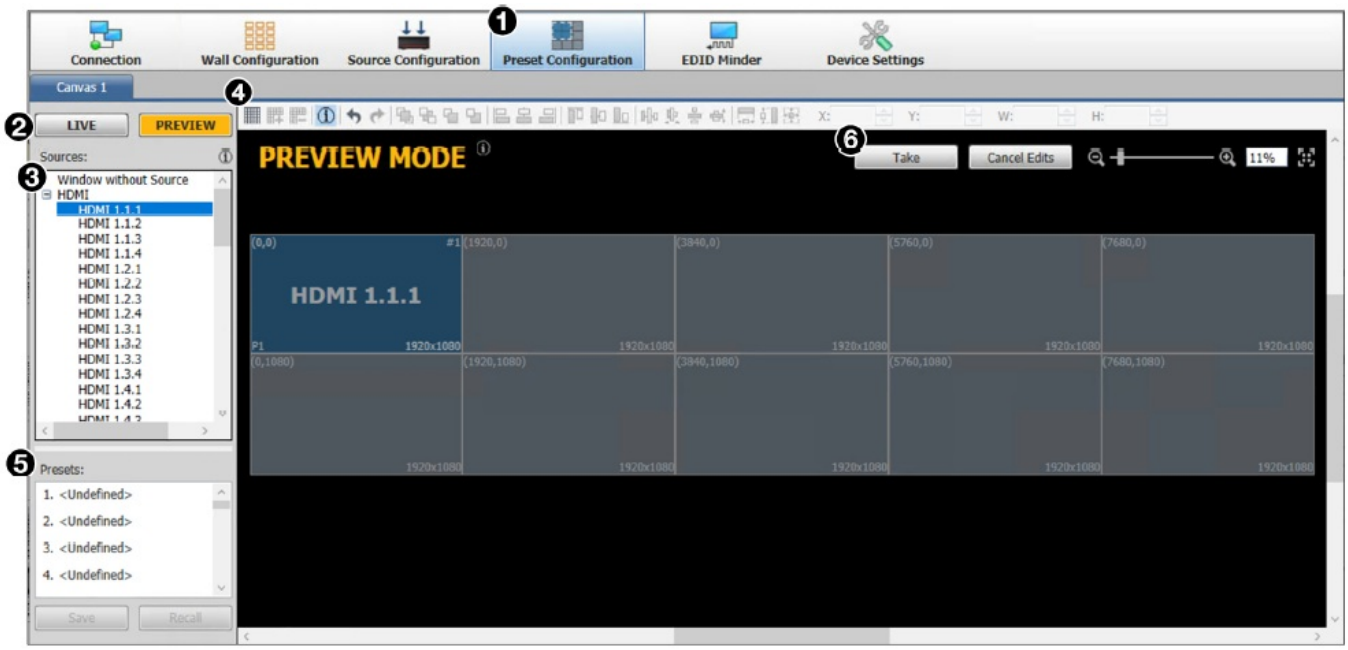


Figure 11. Preset Configuration Window

A window preset, or scene, is a set of one or more windows in which video sources are displayed on a videowall. Window layout parameters, including size, position, and content, are stored in the presets. Presets can be recalled and displayed using VCS or SIS commands (see Recall window preset on page 13).

1. On the taskbar, click the Preset Configuration task button to display the preset configuration workspace (see figure 11, 1). The Canvas in this workspace is a virtual representation of the videowall you set up on the Wall Configuration screen (see Configuring the Videowall Using VCS on page 5).
2. Click the Live or Preview button (2) to select the mode in which you want to configure the preset (see the VCS Help File for more information on configuration modes).
3. Specify the sources to be displayed on the videowall by adding source windows:

   a. Click on a source name (HDMI, IP, Picture, Clock, VNC, Text, or RSS) in the Sources (left) panel (3), and drag it to the desired location on the Canvas. A window containing the source name appears on the Canvas. You can also drag in a Window without Source, for which no input signal is displayed in the window on the Canvas.

   b. Configure the source window by doing the following as needed:

   - Resize it by clicking on it and dragging the resizing handles at the sides and corners.
   - Reposition it by dragging and dropping it at the desired location on the Canvas.
   - Double-click on it to fill the display or displays on which it was placed.
   - Change the source in the window by right-clicking and dragging a different source onto the source

window. Drop the new source when the target window turns red (shown at right).

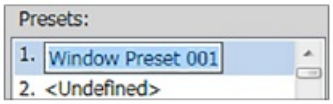
- Right-click on it and select Window Configuration from the menu. In the Window Configuration dialog box, specify parameters for the window border, text on the border, and overlay text (Quantum Ultra and Quantum Ultra II only).

4. If a window completely or partially covers another window, set the priority for each window by selecting the window, then clicking a priority icon on the toolbar above the Canvas (4). The priority number of the window (P1, P2, and so on) is displayed in the lower-left corner of the window on the Canvas (see the image in step 3a, above). You can also use this toolbar to align multiple windows with each other and to set the size of multiple windows on the Canvas.

5. When finished, save the window layout as a preset as follows:

   a. In the Presets list in the lower-left corner of the screen (see figure 11, 5 on the previous page), select a slot for the preset to be saved.

   b. Click Save. The preset slot becomes a text field with the label Window Preset nnn (where nnn is the three-digit preset number that indicates the preset slot number).



   c. Enter a name for the preset (32 characters maximum) or click outside the text field to keep the current name.

6. If configuring in Preview mode, click the Take button (6) if you want to apply the preset to all displays in the system.

Basic SIS Commands

The Quantum Ultra Series can be controlled with SIS commands via a USB, RS-232, or LAN connection. The following table lists some basic commands. For a full list of SIS commands and variables see the Quantum Ultra Series User Guide, available at **www.extron.com**.

Command	ASCII Command (Host to Processor)	Response (Processor to Host)	Additional Description
Input Selection			
Select input	X3*X5*X1!	Grp X3 • Win X5 • In X1 ↵	Select input X1 for window X5 on Canvas X3.
View current input	X3*X5!	X1 ↵	View current input X1 in window X5 on Canvas X3.
Window Presets			
Recall window preset	1*X3*X25.	1Rpr X3*X25 ↵	Recall window preset X25 on Canvas X3.
Recall preset with audio	3*X3*X25.	3 Rpr X3*X25 ↵	Recall window preset X25 to canvas X3 including audio tie.
Window Border Style (These commands apply to Quantum Ultra and Quantum Ultra II only.)			
Set window border style	Esc B X3*X5*X75 WNDW ←	Wndw B X3*X5*X75 ↵	Set the border style of window X5, on Canvas X3, to X75.
View window border style	Esc B X3*X5 WNDW ←	X75 ↵	View border style X75 for window X5 on Canvas X3.
Audio			
Select audio source	X1*X3$	Grp X3 • In X1 • Aud ↵	Select audio from input X1 for canvas X3.
IP Configuration (These commands apply only to the LAN A port. A Commit and Reboot command is required for changes to persist.)			
Set DHCP on and off	Esc X10 DH ←	Idh X10 ↵	Enable or disable DHCP.
View DHCP setting	Esc DH ←	X10 ↵	View DHCP setting X10. Default is 0 (off).
Set IP address	Esc X114 CI ←	Ipi • X114 ↵	Set the IP address for the unit to X114.
View IP address	Esc CI ←	X114 ↵	View IP address X114.
Rebooting the System			
Commit and reboot	Esc 1B00T ←	Boot1 ↵	Commit changes and reboot Quantum Ultra.

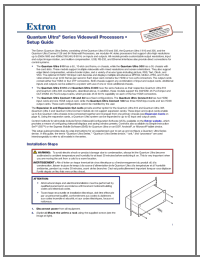
KEY:

- X1 = Input (assigned by VCS): 0001 – 9999. Response is four digits with leading zeros.
  0001 – 0999 = physical video connections on all Quantum chassis in the system.
  1000 – 9999 = Sources defined in the system and not connected to an input card (Picture, RSS, VNC, Text, or Clock).
- X3 = Canvas: 01 – 10. Response is two digits with a leading zero.
- X5 = Window: 001 – 999. Response is three digits with leading zeros.
- X10 = On or off: 0 = off (disabled), 1 = on (enabled).
- X25 = Window preset: 001 – 128. Response is three digits with leading zeros.
- X75 = Window border style preset: 000 – 127. 000 = no border. Response is three digits with leading zeros.
- X114 = IP address in the format *nnn.nnn.nnn.nnn*. Default is 192.168.254.254.

For information on safety guidelines, regulatory compliances, EMI/EMF compatibility, accessibility, and related topics, see the Extron Safety and Regulatory Compliance Guide on the Extron website.

www.extron.com

Documents / Resources



Extron Quantum 305 Ultra Series Videowall Processors [pdf] User Guide
Quantum 305, Ultra Series Videowall Processors, Videowall Processors, Processors, Quantum 305, Ultra Series

References

- Extron - The AV Technology Leader