EMERSON ProAct Demand Response User Guide

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ProAct Demand Response Service Specification

Service Definition and Standard Features
ProAct Demand Response is a hosted web service providing customers and/or third party CSP's the ability to schedule, manage, and monitor Demand Response load shedding events across their enterprise stores.

Standard features:

- Fully web browser-based 24x7x365 hosted service.
- Supports TCP/IP connected E2, Site Supervisor, and E3 controllers.
- Integrates with E2, Site Supervisor, and E3's Demand Control Application allowing the shedding of HVAC, Lighting,
  Refrigeration, and other loads (single shed level only).
- Shed event scheduling and management at Directory and Site levels.
- Near real-time shed event monitoring.
- 3rd Party (for example, CSP) XML kWh pulse data feed.
- Supported EMS Systems: E2 2.72F01 and later.
  Additional systems may be available. Contact Product Management for more information.

Service Activation

Service activation requires customer completion of the following steps:

- Completion of ProAct Services Site Activation form and Shed Schedule form.
- Pre-configured and confirmation of EMS TCP/IP/VPN communications connectivity (Note: Customer Domain Name and Time Server(s) IP or Names is required).
- Completion of Services Agreement Contract.

Service Level Deliverables

Web Hosted Service

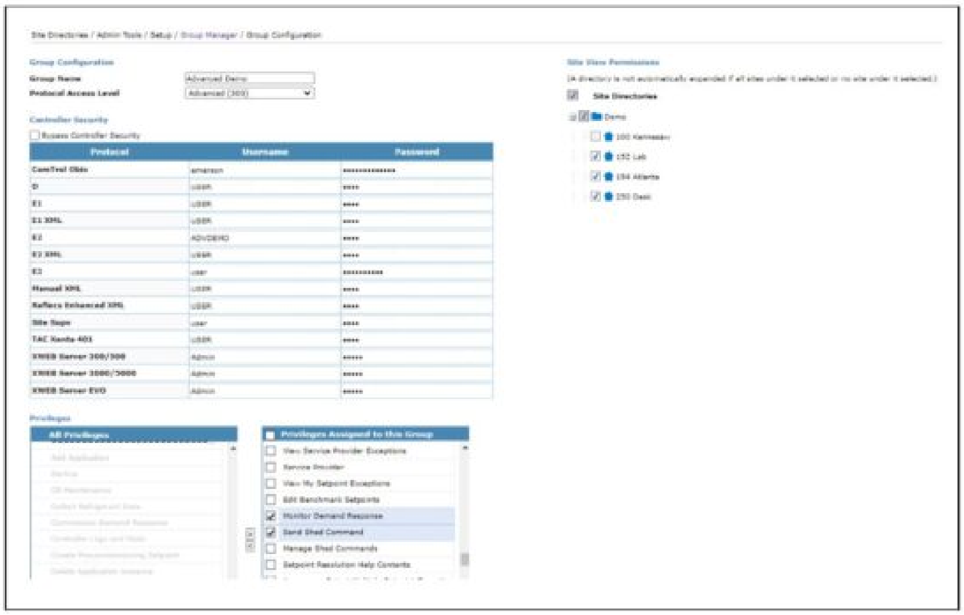
This service includes the following deliverables:

- Web based 24x7x365 service hosted service (see Services Agreement for more SLA's).
- Service activation includes: Users and User Group configuration, Site setup and initial communications confirmation,
  E2, Site Supervisor, and E3 service activation, E2, Site Supervisor, and E3 applications configuration for shedding per
  supplied Shed Schedule form (Note that service activation while technician is at site must be prearranged).
- Server database daily backups and monthly E2, Site Supervisor, and E3 setpoint file backups.
- Energy data available for 3 years.
- Technical Support.

Note: Services do not include any required controllers, communication hardware, installation, or commissioning of hardware.
Disclaimer: Emerson is not responsible for any product loss, harm to people, or property. Due to unreliable nature of modem communications, there is no guarantee that product is always safe. These services are intended as added security only. Information subject to change without notice. Emerson standard Terms and Condition applies.

Set Demand Response User Group Privileges

Within the ProAct Demand Response web application, if user groups have not been previously configured, add the new group from the Admin Tools > Group Manager menu and set Demand Response user group privileges as shown below and click Save.

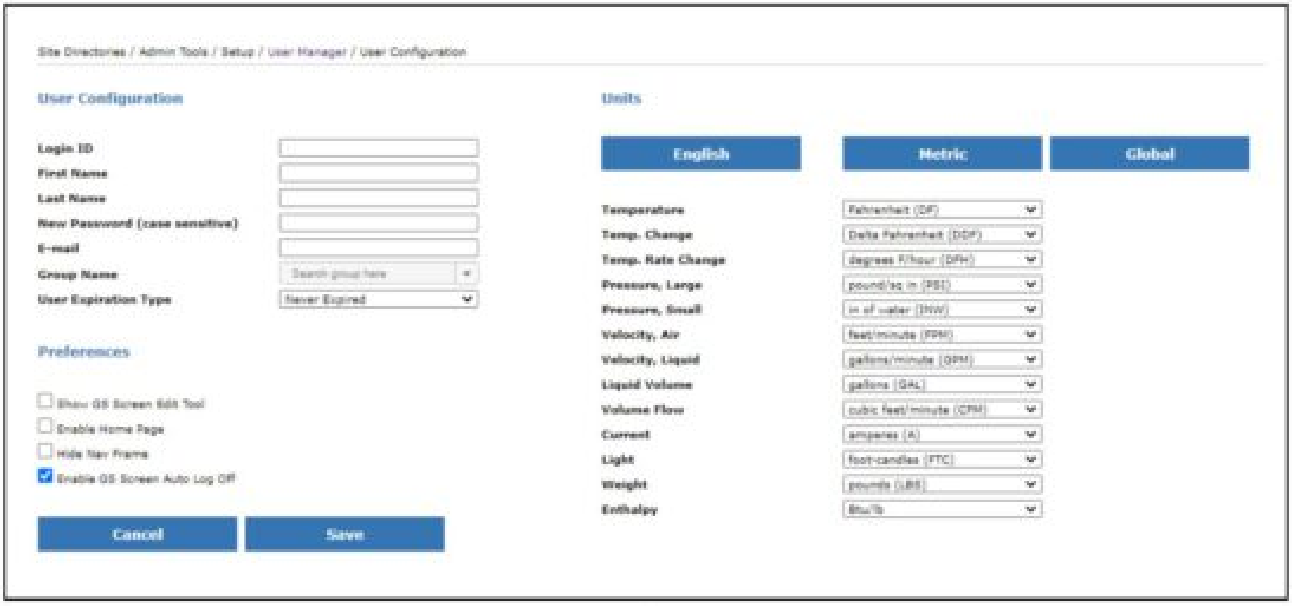


Add New Users

If users have not been previously configured, select User Manager from the Admin Tools > User Manager and then Add New. Obtain the user name and email from the Admin Named User field located in the ProAct Services Activation form. Configure user as follows, unless directed otherwise:

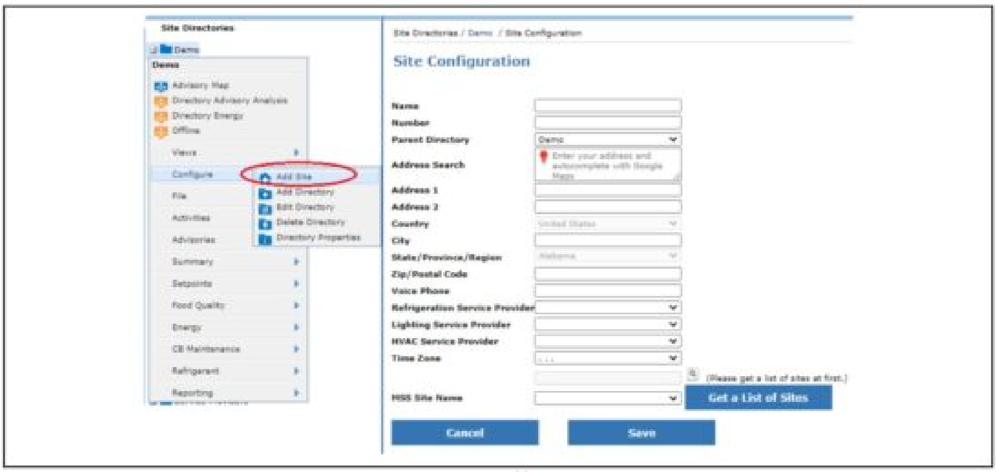
Login ID	First character of user's first name then last name
New Password	Same as Login ID

Insert first and last name, email address, and assign user to the appropriate user group and click **Save**.



Add New Sites

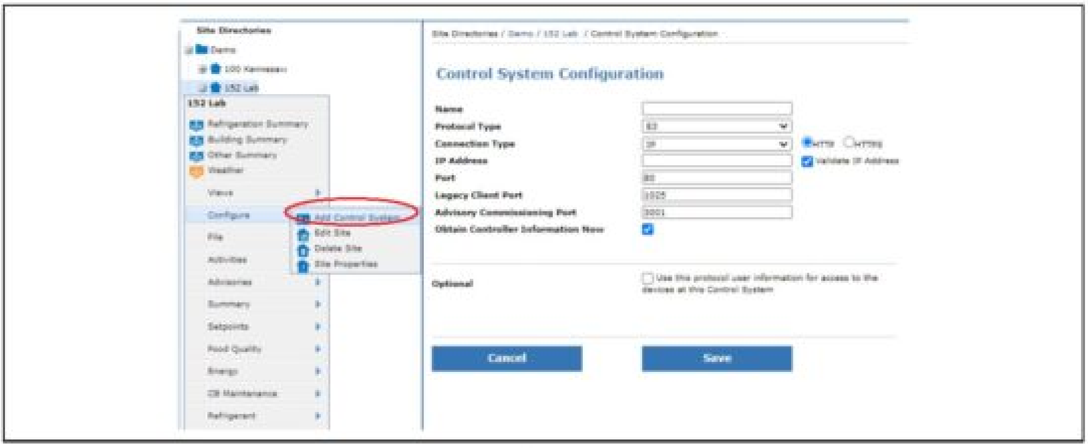
If the site is a new site, from the ProAct DR application (Note: Contact manager for the web site address), right-click on the tree and select Configure > Add Site at the directory tree level where the new site to be activated for ProAct DR service should reside (Note: Customer name is the default level, unless otherwise specified by customer request). Next, complete the site configuration information as provided in the activation form, including Name, Parent Directory, Country, City, State, and Time-zone.



Add Control System (CS)

Right-click on the new site and select Configure > Add Control System. Select the Protocol type (E2, E3 or Site Supv), then

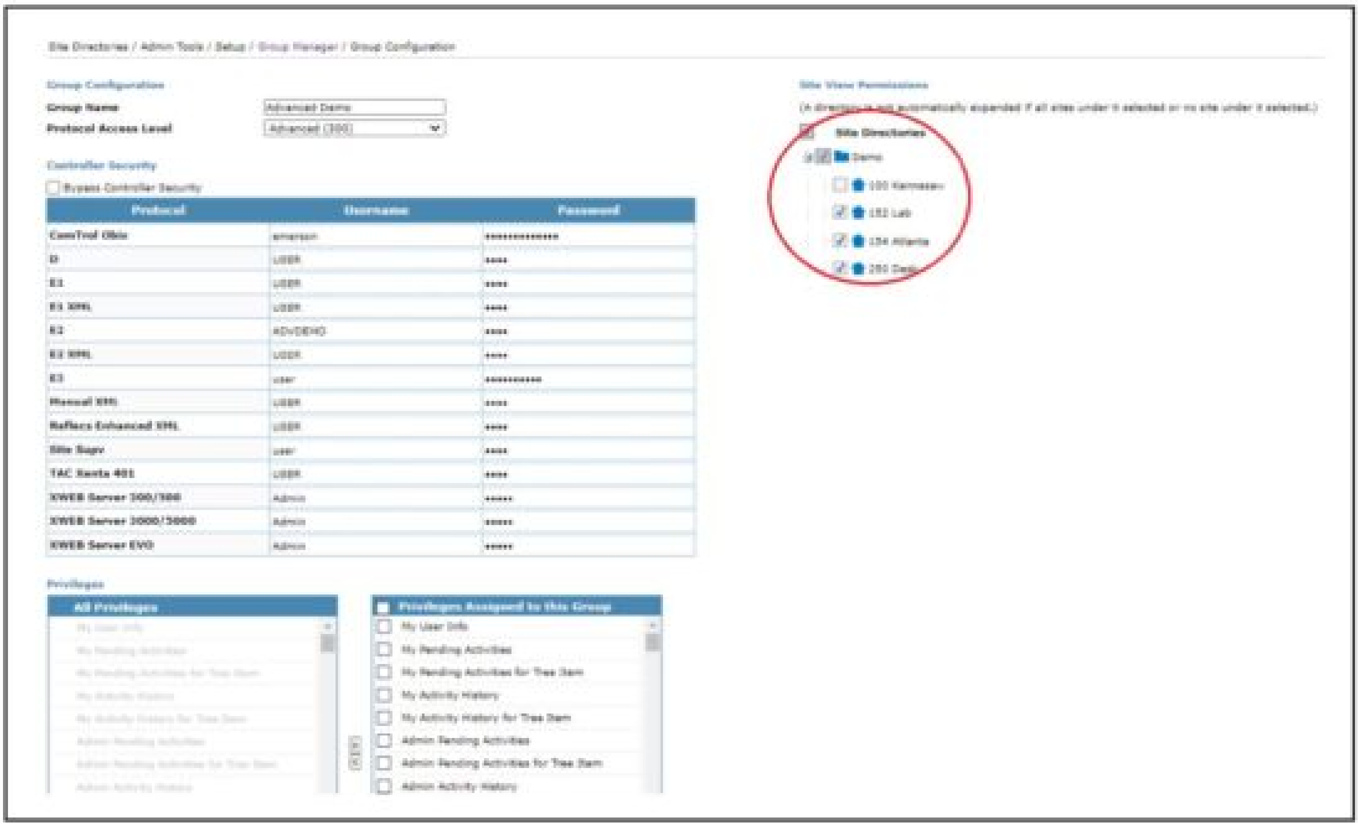
input the Name (typically the controller model for example, E3 for E3's), IP Address of the gateway controller or device and Port address (80 for E3 and Site Supv,1025 for E2). Once completed, click Save and right-click on CS and select Refresh Units.



Set User Group Site View Permission

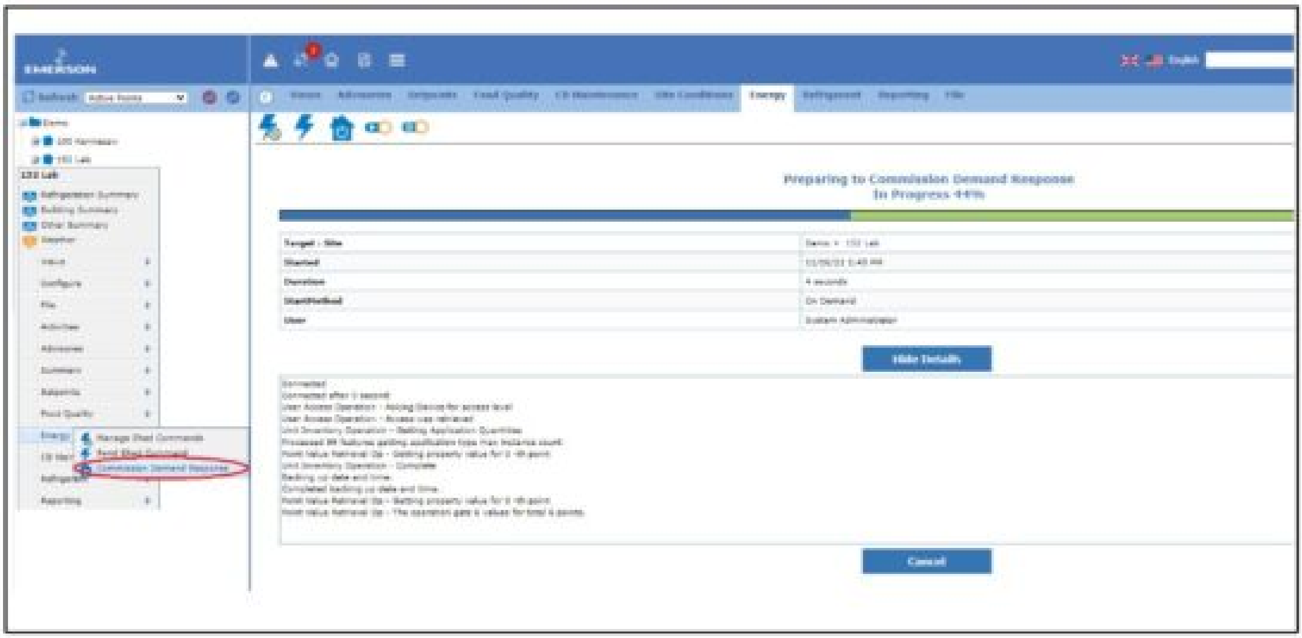
Once the site has been added, set the site view permission by selecting the **Group Manager** menu located under **Admin Tools > Group Manager.**

Select the group name to edit and then select the new site or directory to allow the user group access as shown below.
NOTE: This step must be done after any new sites are added in order for user group to have access to the sites.



Commission Demand Response

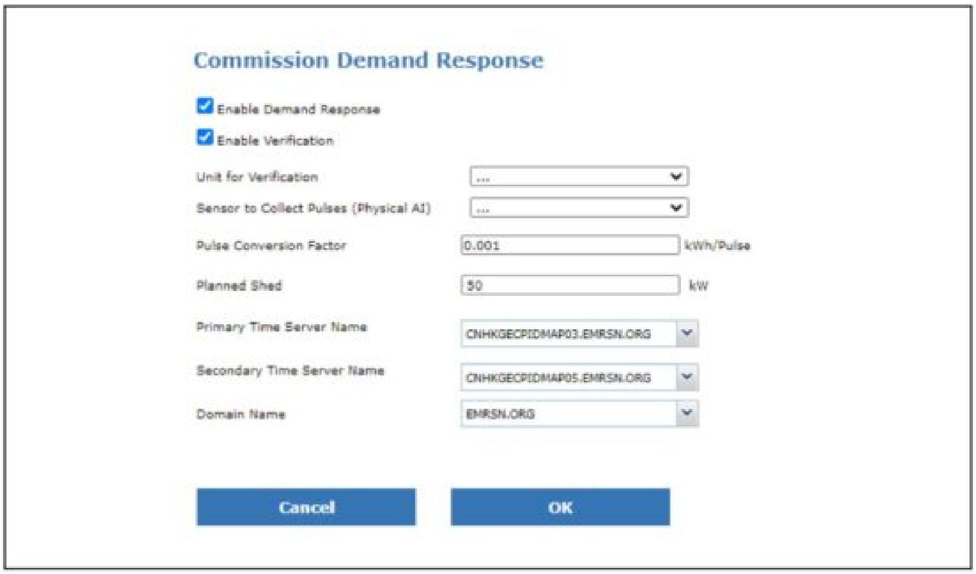
Once all the pre-configuration is completed, you can start with your Demand Response actions. Right-click on site and select Energy > Commission Demand Response, you will see an activity details screen for preparing to commission demand response. When you see this screen, the software is now attempting to communicate with controllers at the site to collect information about the current programming of the controllers as it relates to commissioning. This process may take several minutes.



If the commissioning activity fails, note the details in the activity window and investigate the issue with your manager.
Common failure causes and resolution steps are listed below:

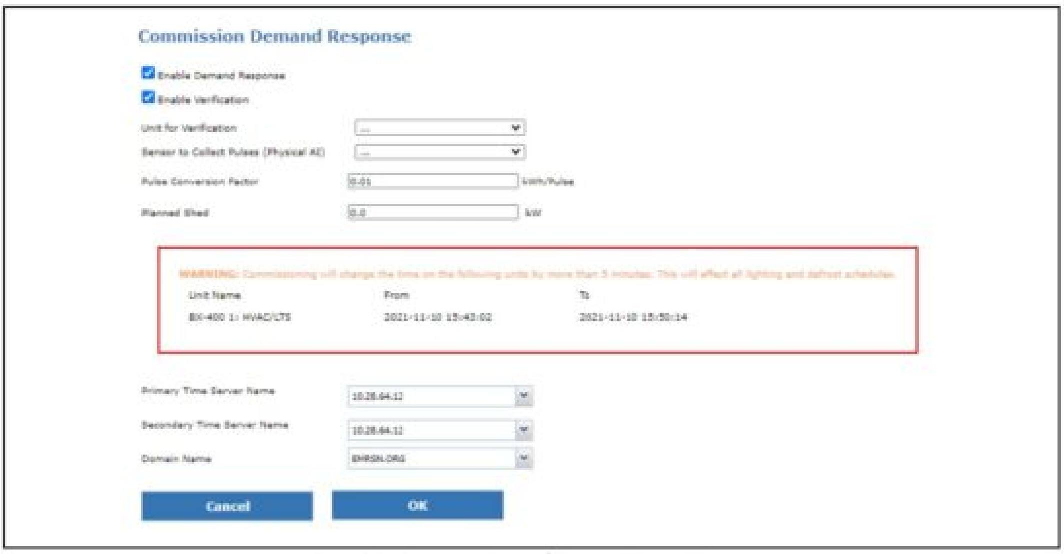
- Failure to connect to IP
  - Confirm IP address and port settings.
  - Confirm with IT that VPN is configured and up for customer's sites.
  - Contact manager for additional support.
- Unsupported controller protocol type or firmware
  - Confirm the supported protocol type is E2, E3, and Site Supv.
  - Consult manager prior to performing controller firmware upgrade to the supported version.

Next, if the commissioning was successful, the following dialog box will display:



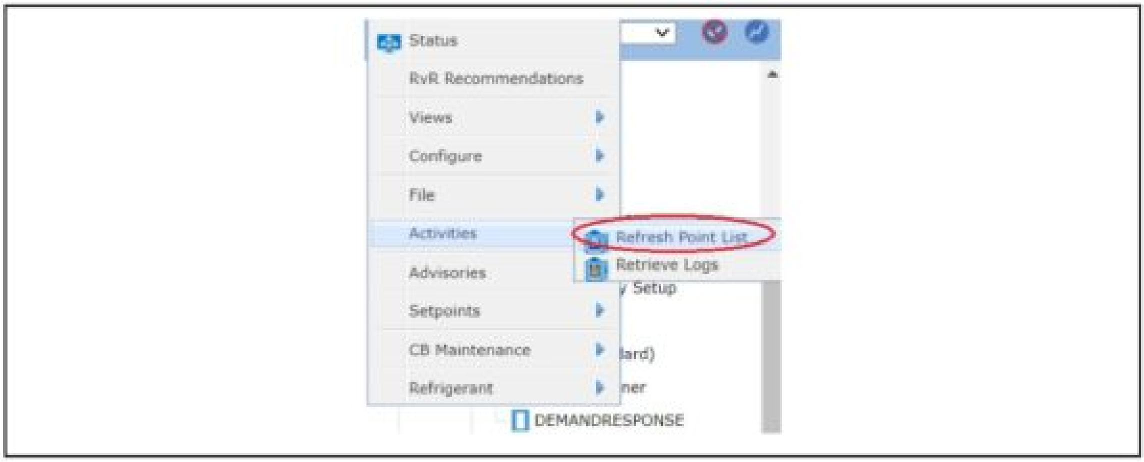
Select the Enable Demand Response to enable the service.

- The commissioning wizard automates the task of configuring the NTP client in controller. Correct configuration of the NTP client in controller is essential because if the NTP client in controller is not configured correctly, the time in controller may drift and this will cause demand response to malfunction. In the commissioning screen you must enter primary and secondary time server names as shown above.
- Connect+ will pre-populate the drop-down lists for the primary and secondary domain servers as a convenience to you. You may however choose to type in free text.
- If you are inside a corporate network, the drop-down list will include your primary and secondary domain controllers. If you have entered a value that has worked in the past for another site, the software will remember this value and include it in the list.
- If commissioning is going to result in changing the local time of the controller by more than 5 minutes, you will receive a warning message. You may or may not wish to proceed at this point. Changing the local time in the controller can affect lighting and defrost schedules. You may decide that you need to adjust lighting and/or defrost schedules before proceeding. If commissioning is going to result in changing the local time of the controller by more than 5 minutes, below is an example of the warning that you will receive.



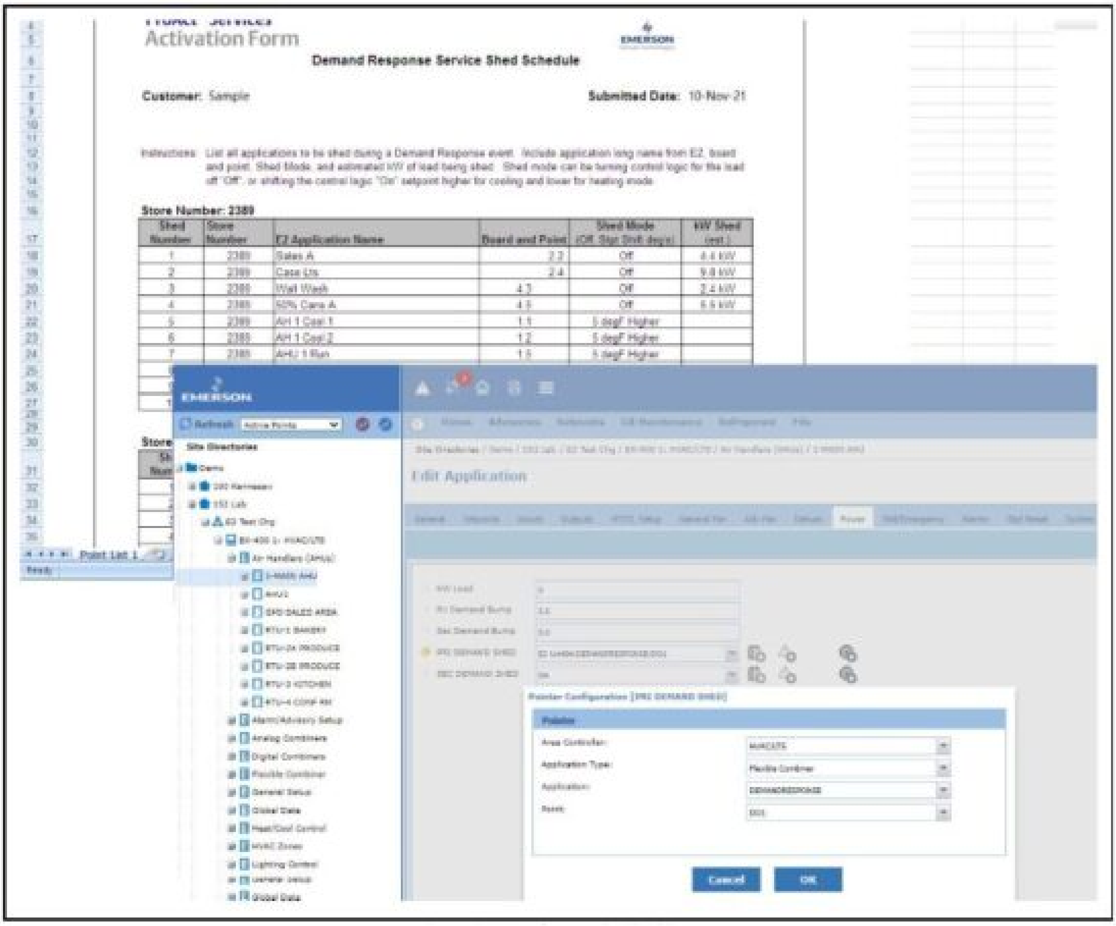
If the site is designated to have shed event monitoring (only E2 supports this function), select the Enable

Verification and the unit and AI sensor/pulse meter to be used for verifying the shed events from the drop-down boxes. The Pulse Conversion Factor should be set to 0.001 kWh/pulse. If a sensor for the main meter pulses is not listed or defined, one will need to be created by the technician responsible for the programming of the E2. (Contact technical support for any questions).
After entering all required information, click the OK button. The system will start the activity to configure the controller and web application. This may take several minutes. During this process if the controller had never been commissioned for DR, new Flexible Combiners named with DEMANDRESPONSE will be added to each controller. Right-click on Demand Response, then select Activities > Refresh Point List to obtain the point information.



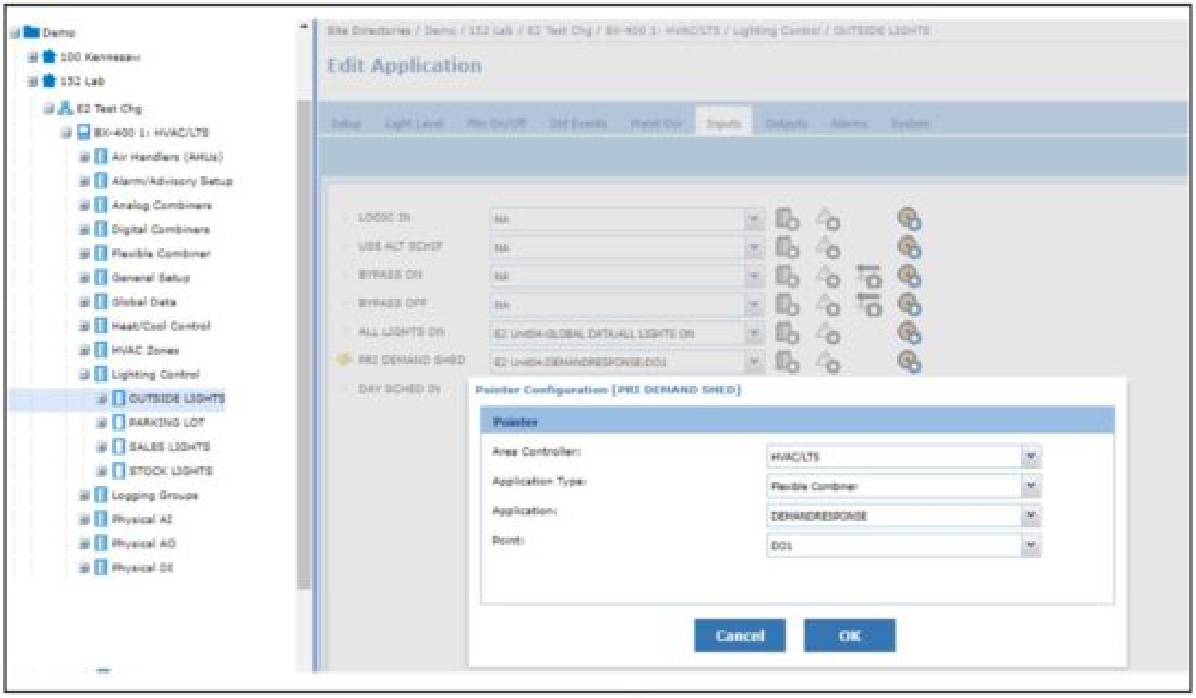
Configure Applications for Shedding

Applications are configured for shedding by mapping the Demand Response Flexible Combiner Digital Output 1 to the Primary Demand Shed property within the controller applications. A customer supplied Shed Schedule form (see screenshot below) list the applications to be configured for shedding. Configuration of shed applications can be completed through use of either the controller front panel, UltraSite, or Terminal Mode/Edit Application from Connect+. The ProAct DR web application method is demonstrated below.
Select **Edit Application** for the application to be configured for shedding.



For AHU shedding, as in this example, select the Power tab, then select the Pointer Setup for the Pri Demand Shed and select the controller being configured, and then the application named Flexible Combiner, Demand Response and the output DO1. Next, set the Pri Demand Bump property to the specified number of degrees (5.00 in the screen above), as provided in the Shed Schedule form. Click OK to save the settings for both the Pointer Setup and Edit Configuration dialog boxes.

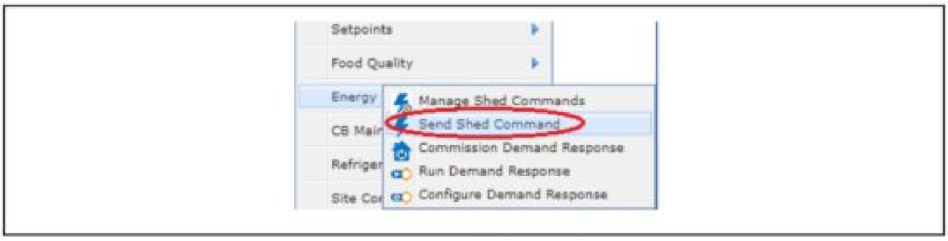
Repeat the same process when configuring a Lighting application as shown below; however, select the Input tab. No bump
setpoint is required for lighting applications.



Once all applications have been configured, users can schedule a shed event to verify all loads shed accordingly. If any failures occur during the scheduling of a shed event, consult your PSC manager. Several applications including Lighting, Suction Groups, Condensers, and Air Handler applications have demand shed inputs that implement built-in demand shed behaviors. Consult a controller for the exact behavior of these.

Send Shed Command

Once the Commission Demand Response is completed, you can send the shed command to controller. Right-click the site and select Send Shed Command.



Select a start and end date and time, then click **Send Shed Command**.

If there are not any existing shed commands ahead of the command you sent that are already in the controller, you will see an activity details screen that displays the status of sending the shed command to the controller as depicted below:

When the activity is completed, you will see the message of the next step link. Click each link to go to the next step page.

If there are existing shed commands and the current shed time has overlapped with the command you already sent, you will see a setup wizard and can choose the action you want.

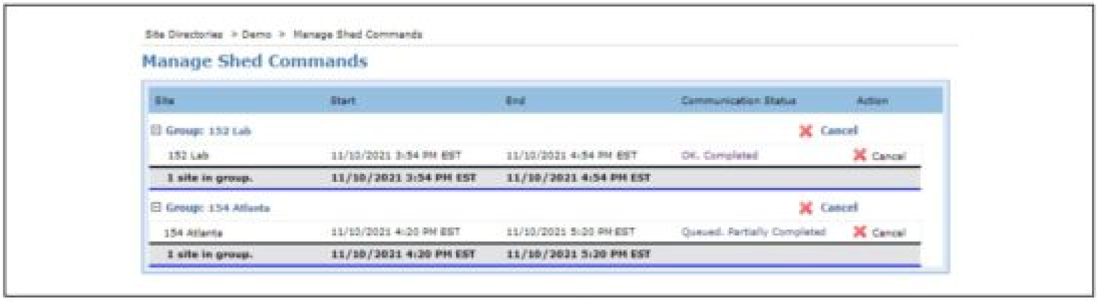
- **Merge:** Merge the overlapping shed times
- **Overwrite:** Cancel the existing shed time and use the time that just entered.
- **Keep:** Ignore the time that just entered and keep the existing shed time.

Hover your mouse on the button for a preview of tips.

Manage Demand Response

After sending a shed command, you can right-click on the directory or site level, select Energy > Manage Shed Commands to view the shed command management.

You can utilize this to quickly view the site shed time and find sites that failed to communicate and did not receive the command.



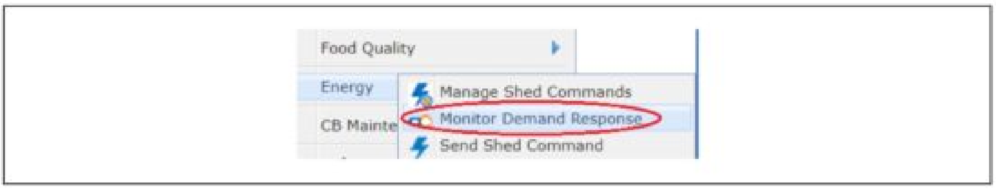
If Connect+ fails to communicate with a site to send a shed command, Connect+ will continue to retry the command to failed sites for the life of the event. The software implements this retry cycle on a 5-minute interval. The Manage Shed page will update if the communication status of a site changes as a result of this retry mechanism.You can also cancel the events in this page by clicking the Cancel icon for each event or group. After canceling, Connect+ will communicate with the controller and clear the command in the controller. This is a useful feature because if the power company ends the event early, you can resume normal operations, or if a particular store manager is reporting incidents about the impact of an event, you can cancel the event for this store.

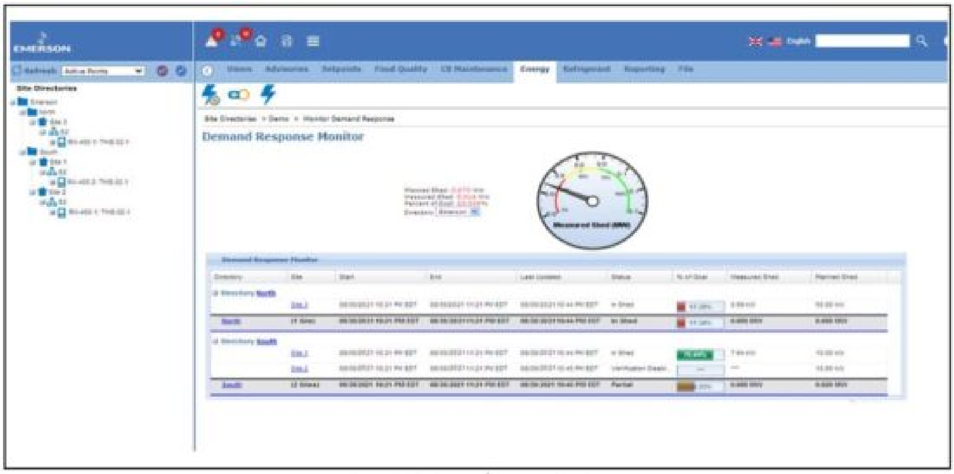
Monitor Demand Response

User could access the Demand Response Monitor data grid via web browser to view:

- Real-time event statuses.
- Past and upcoming shed event schedules.
- Amount of power shed per site.
- Directory summary data.

As mentioned in section 7 – Commission Demand Response, user should enable **Enable Verification** checkbox and configure the properties in Commission Demand Response page, then right-click on directory level and select **Energy > Monitor Demand Response.**

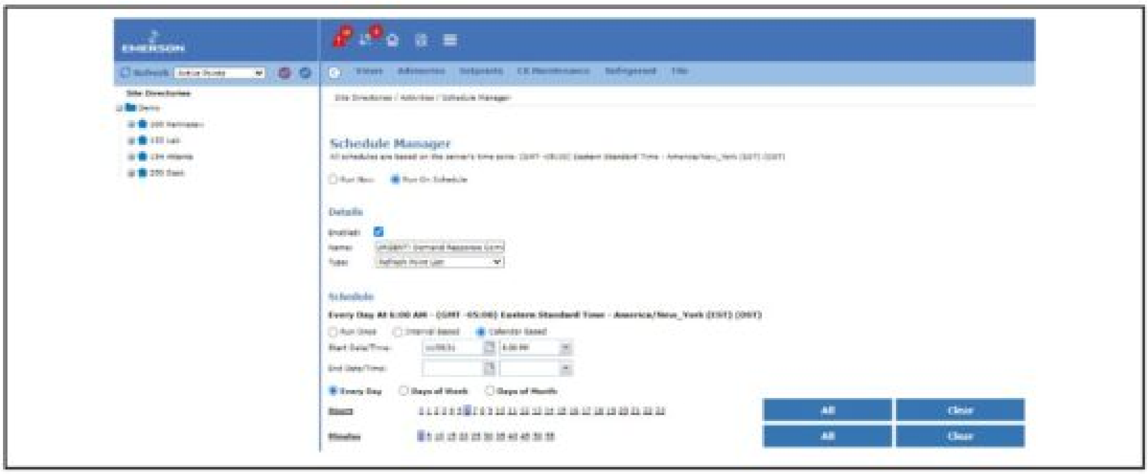




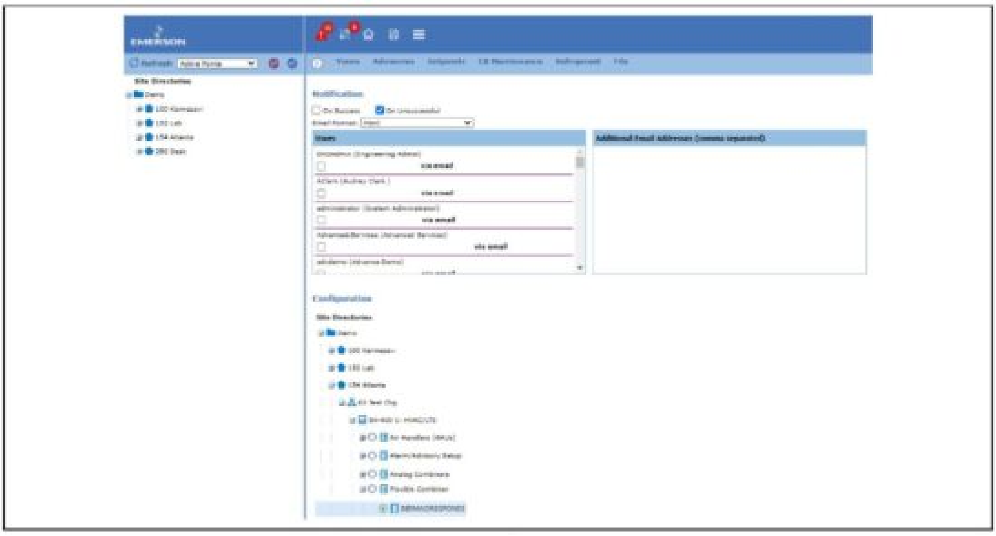
In this page, you could see a total Planned Shed, Measured Shed, Percent of Goal of the selected directory. A dial that also gives you an intuitive view of Percent of Goal. If the percent of goal is less than 33%, the dial pointer will display in red area, if the percent of goal is between 33% and 66%, it will show in yellow area, and the pointer will display in green if the goal is more than 66%. The table will show Planned Shed, Measured Shed, and Percent of Goal of each site under the directory. The color that displays for the (percent) % **of Goal** has the same meaning as the dial. Currently, Monitor Demand Response is only available for E2.

Communications Test Scheduling

To ensure communications between the Connect+ and controller, you can configure a nightly communications test schedule
within the Schedule Manager for all activated sites using the Refresh Point List schedule type.
NOTE: Contact your IT Department and Manager to confirm no schedule conflicts with any server nightly maintenance tasks. Name schedule for each site as follows:
URGENT! Demand Response Comm. Test Failed

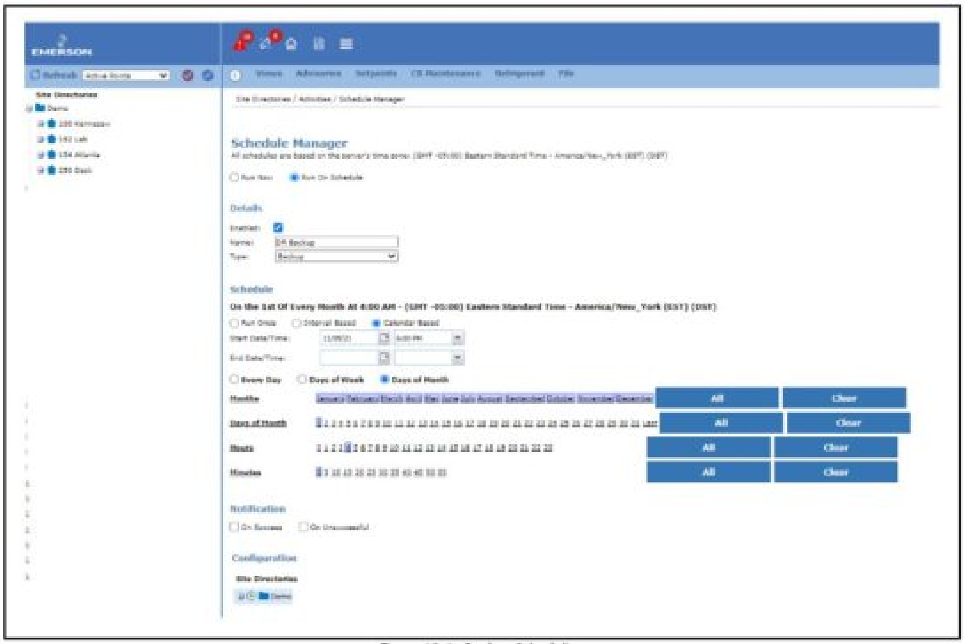


Select site directory as one of the site's E2 Demand Response Flexible Combiners, as shown below. Assign **On Unsuccessful** notifications to all named users and PSC responsible.



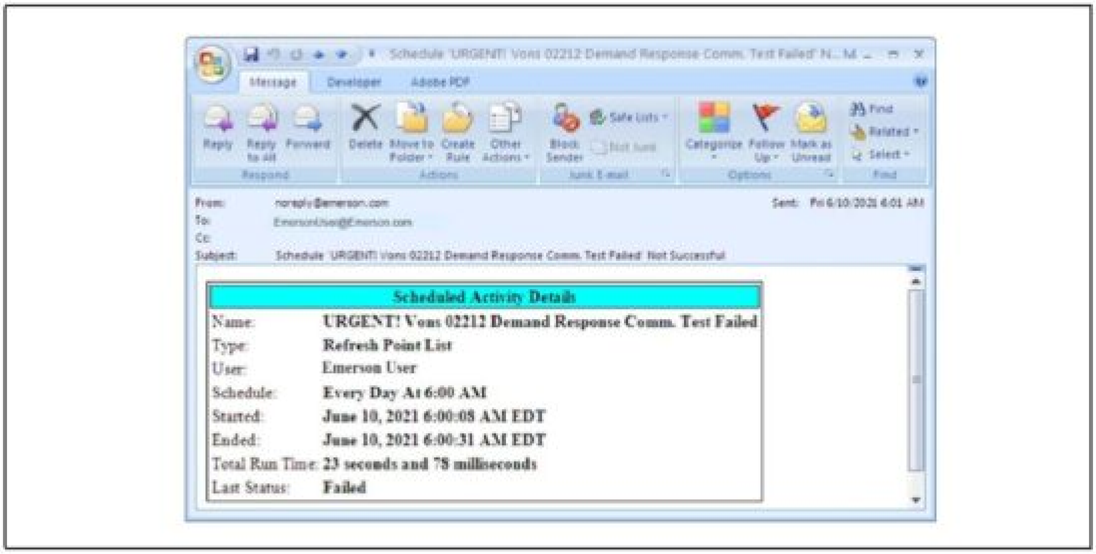
Backup Scheduling

Configure a Backup schedule within Schedule Manager for all activated sites by reselecting the directory or site(s). Select email notification on unsuccessful attempts, as shown below.
NOTE: Contact your IT Department or manager to confirm no schedule conflicts with any server nightly maintenance tasks.



Communication Failure Investigation

Upon receipt of a DR communication test fail email as shown in the sample below, the following steps should be taken to
determine if the problem is on Emerson's network side or the customers.

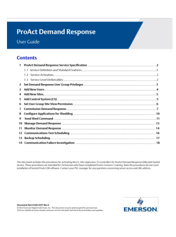


Communication Failure Investigation Procedures

1. Attempt a Refresh Units job on the failed site in the DR web application.
2. If the job shows Completed, notify all recipients on failure notice email of resolution.
3. If the job fails, perform Refresh Units on another site to test VPN.
4. If the other site is successful, notify all recipients on the failure notice email that the Emerson side VPN test was successful, and the problem may be on the customer's network side or with a component at the store.
5. If the other site is unsuccessful, notify all recipients on the failure notice email that the problem may be on the Emerson network side and the problem is currently being addressed. Provide a status update email within the next hour.
    1. Escalate problem to Emerson Solutions IT Help Desk as Emergency.

Visit our website at www.climate.emerson.com for the latest technical documentation and updates. Join Emerson Technical Support on Facebook. http://on.fb.me/WUQRnt For Technical Support call 833-409-7505 or email ColdChain.TechnicalServices@Emerson.com

Documents / Resources

	EMERSON ProAct Demand Response [pdf] User Guide ProAct Demand Response

References

- Emerson Retail Solutions Tech Support \| Facebook
- Climate Technologies Worldwide \| Emerson US