CONTENTS

INTRODUCTION

The PowerLogic Reports add-on product is an optional feature of SMS. Available for use with the SMS Professional (SMS PE) and SMS Standard (SMS SE) products, Advanced Reports provides a wizard for creating and editing several types of reports.

Creating Reports

You will use the PowerLogic Reports wizard to create reports. Start by clicking the Create tab.

There are four basic reports: pie, trend, table, and histogram. Click the links below to learn how to create or edit each of them:

Creating and Editing Basic Pie Charts

Creating and Editing Basic Trend Reports

Creating and Editing Basic Tables

Creating and Editing Basic Histograms

There are five advanced reports: energy cost summary, 100 millisecond, seven-day energy usage by shift, multi-device electric usage, and single-device usage. Click the links below to learn how to create or edit each of them:

Creating and Editing Single-Device Reports

Creating and Editing Multi-Device Electrical Usage Reports

Creating and Editing Seven-Day Energy Usage Reports

Creating and Editing Energy Cost Summaries

Creating and Editing 100msec Reports

There is one system report, the SMS Advanced Reports Activity Log, that displays PowerLogic Reports activity, including user log-ins, and report creation and scheduling:

Viewing the Advanced Reports Activity Log

Editing Reports

Use the Edit tab to change report settings. You can change everything except the report name. When editing a report, you use the same Advanced Reports wizard that you used to create the report.

Viewing and Scheduling Reports

After you create a report, you will use the View/Schedule tab to view the report, to schedule report execution, to export the report, and to view report history. To learn more about these options, see See “Using the View/ Schedule Tab” on page 5.

Printing Reports

You can print a report when you’re viewing it, and you can set a report to print when you schedule it. See “Scheduling Execution of a Report” on page 7.

Navigating Through the Advanced Reports Windows

Use the Advanced Reports tabs to navigate through the various Advanced Reports. Do not use the Back button because it will cause the screen to display incorrectly.

USING THE VIEW/SCHEDULE TAB

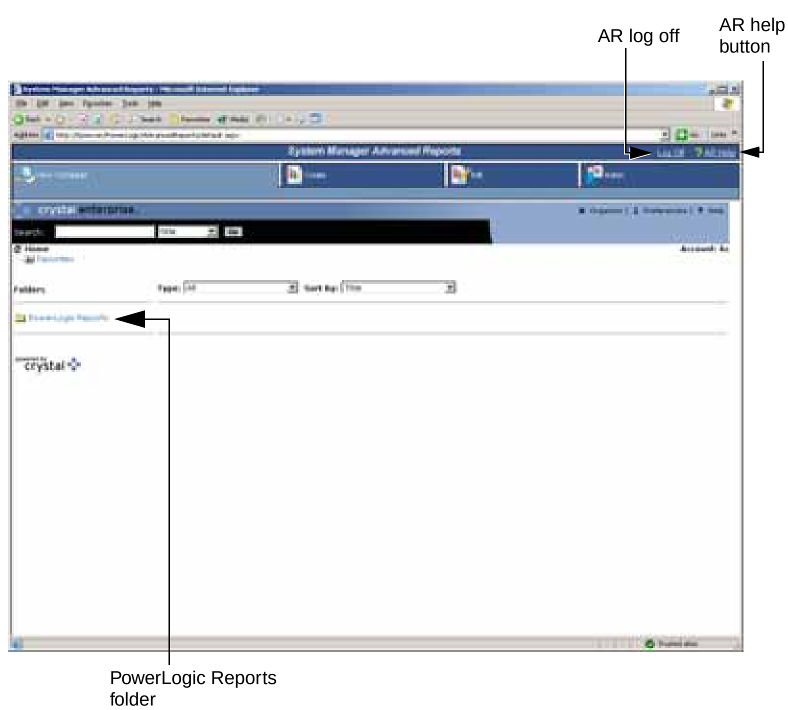
The View/Schedule tab is the first tab that you see when you launch the Advanced Reports product.

In This Section

From this tab, you can access the Crystal Enterprise product and begin to view advanced reports that you have created. The Crystal Enterprise windows have separate help topics; to access them, click the Crystal help button: . You will also use this tab to begin viewing reports that have been created, or to schedule a report for execution. For Advanced Reports help, click in the upper right-hand corner of the screen.

To navigate to other tabs in Advanced Reports, click the tab you want to view. Do not click the Back button because it will cause the Advanced Reports tabs to display incorrectly.

The figure below illustrates the View/Schedule tab:



PowerLogic Reports Folder Structure

The illustration below illustrates the paths to the various PowerLogic reports:

PowerLogic Reports

- **Advanced Reports**: → **Cost Reports:** Energy Cost Summary → **Power Quality Reports:** 100 msec Report → **Usage Reports:** Multi-Device Electrical Usage; Seven-Day Energy Usage by Shift; Single-Device Electrical Usage
- **Basic Reports**: → Histogram; Pie; Table; Trend
- **System Reports**: → **Activity Logs** SMS Advanced Reports Activity Log

Viewing Reports

To view historical report information, left-click the report name, then choose one of two options:

View: Choose this option to cause the report to be updated and the most current information displayed

View Latest Instance: Choose this option to view the most current instance that was successfully executed. This option displays only if the report has been scheduled to execute multiple times, and more than one instance exists.

The report displays in a separate window.

When the Report Does Not Display

If an error displays, telling you that your security settings do not accept the Active X controls installed your computer, you need to add the computer to your Trusted Sites. If you need help with this, contact your local system administrator.

Viewing Multiple-Page Reports

Reports may often contain more than one page of information. However, when you first view a report, the “available pages” indicator shows that there is only page in the report:

To view any additional pages, click the “last page” icon at the top of the screen ( ). Note that the number of available pages changes to reflect the true number of the pages in the report. Click the back and forward buttons ( ) to view all of the pages of the report.

Scheduling Execution of a Report

Before you can schedule a report, you must create it. See *Using the Create Tab* for instructions. To schedule a created report, follow these steps:

1. Establish a user account that has access to the printer:
   a. Stop the Crystal Management Server (Start > Programs > Crystal Enterprise 10 > Crystal Configuration Manager; then right-click Crystal Management Server and choose Stop).
   b. Right-click Crystal Management Server again, and choose Properties.
   c. In the “Logon as” box in the Properties tab, uncheck System Account. Change the user account and password to a user that has access to the printer.
   d. Restart the Crystal Management Server (right-click, then choose Start).
   e. Close the Crystal Configuration Manager.
2. Click PowerLogic Reports and the type of report. Left-click the report name, then select Schedule.

   The Schedule screen displays.
3. In the “Customize your option:” box, accept the default “Schedule.”
4. From the “Run report:” dropdown box, select the schedule you want to use. See the following table for schedule options:

   NOTE: For Internet Explorer 6, Service Pack 2: If the calendar feature does not display correctly when you are choosing a date range, certain Javascript settings are not enabled. To continue choosing a schedule, you should type the date rather than selecting it from the calendar.

Schedule Type	Additional Information
Now (default)	Begins to execute as soon as you click “Schedule.”
Once	Executes one time, beginning on the start date/time.
Hourly	Executes once every hour, for the entire time range specified.
Daily	Executes once every N days (user determined) for the entire time range specified.
Weekly	Executes every day that you check (Monday - Sunday), for the entire time range specified.
Monthly	Executes once every N months (1-12) for the entire time period specified.
Nth Day of Month	Executes on the specified date of month (1-31) for every month included in the specified time period.
1st Day of Month	Executes on the first of the month for every month included in the specified time period.
Last Day of Month	Executes on the last day of the month for every month included in the specified time period.
X Day of Nth Week of the Month	Executes on every day that you check (Monday - Sunday) in the specified weeks (1-5) for every month included in the specified time period.

5. Click the Schedule link (

) at the upper right corner of the page.

   The report begins to execute according to the schedule you selected. See *Viewing Report History* for instructions on viewing the status of each report’s schedule.

Exporting Reports

You can export a report to any of several file formats (Crystal Reports, Microsoft Excel, Microsoft Excel-Data Only, Microsoft Word, Rich Text Format, or Adobe Acrobat). To export, click  at the upper left of the window. Choose the number of pages to export, the file format, and the name of the new file.

NOTE: To be able to export a basic table or an energy cost summary, you must have installed Crystal Enterprise SU2. This service update is on the Crystal Enterprise installation disk.

Printing Reports

There are two options for printing reports:

- When viewing the report, click in the upper left of the window. From the Print screen, choose the printer, number of copies, and pages.
- When scheduling the report, you can also schedule printing. From the View/Schedule tab, left-click the report name and choose Schedule. Then, follow these steps:
  1. When the Schedule screen displays, choose Print Settings from the pull-down menu.
  2. Choose the printer you want to use, the number of copies, and the page range.
  3. Click the Schedule link at the upper right corner of the page to execute the schedule.

Viewing Report History

You can view a History page that shows the current status of any scheduled report. From this page, you can also delete a schedule, or pause/resume execution of a schedule. To view this screen (illustrated below), left-click the report name, and choose History from the list.

NOTE: This screen does not automatically update. To display the current status of all instances, you must refresh this screen: either press F5 to refresh the browser, or click the Refresh button on the History screen.

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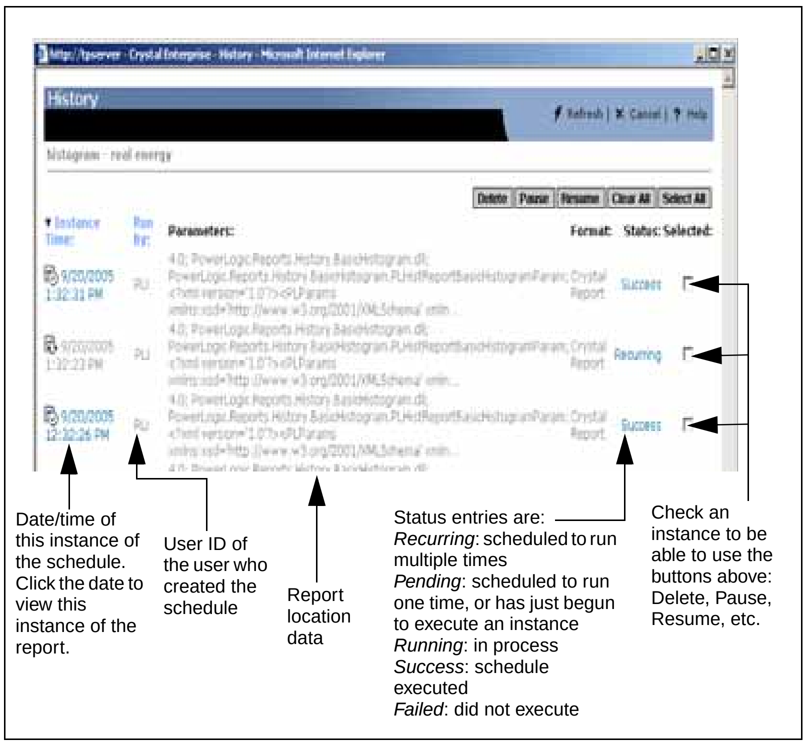


Use the fields of the History screen in the following ways:

View the instance: Click the date/time link for the instance that has been successfully executed. This instance of the report displays in a separate window.

Get details about the status: Click the Status link to view such details as:

- the printer at which it was printed
- creation time/start time/end time
- if status is Pending, the type of recurrence
- if status is Failed, an error message that describes the reason for failure

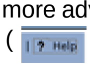
Edit the list of instances: Check the “Selected” box to enable the buttons at the top left of the page: delete, pause, resume, clear all, select all.

Viewing the Advanced Reports Activity Log

The Advanced Reports Activity Log shows all PowerLogic Reports activity, including user log-ins, and report creation and scheduling. You can also schedule the activity log to execute like any other Advanced Report. To view this activity log, open the View/Schedule tab. Then select PowerLogic Reports > System Reports > Activity Logs > SMS Advanced Reports Activity Log.

When the log displays, you can view additional detail for any line item: Highlight the line and double-click it. A new window displays, listing the server name where the request was made, and user name, and user ID of the person who logged on or created/modified the report.

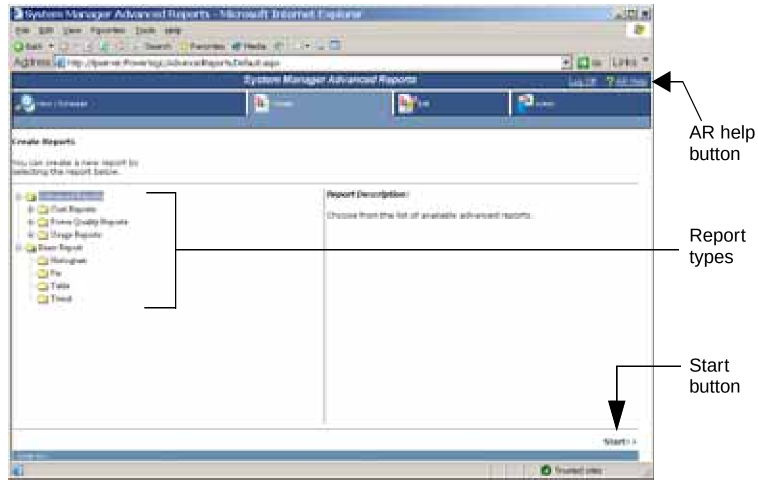
Crystal Enterprise Help

If you need more advanced help on working with schedules, click the Crystal help button (

) to view the Crystal Enterprise help file.

USING THE CREATE TAB

Use the Create tab (see figure below) to begin creating a report.



In This Section

PowerLogic Reports Folder Structure

Creating Reports

Deleting Reports

PowerLogic Reports Folder Structure

The illustration below illustrates the paths to the various PowerLogic reports:

PowerLogic Reports

- **Advanced Reports**: → **Cost Reports:** Energy Cost Summary → **Power Quality Reports:** 100 msec Report → **Usage Reports:** Multi-Device Electrical Usage, Seven-Day Energy Usage by Shift, Single-Device Electrical Usage
- **Basic Reports**: → Histogram, Pie, Table, Trend
- **System Reports**: → **Activity Logs**: SMS Advanced Reports Activity Log

Creating Reports

1. Locate and click the report type that you want to create; a sample report displays in the right-hand pane. Click Start.

   The report creation wizard displays. In the left-hand column is a list of screens that you will use to create the report.

2. For help in using the wizard to create your report, click  in the upper right-hand corner of the screen.

NOTE: If an error displays telling you that the event log is full, the report has not been created. To remedy this problem, you must set the Windows Event Log to FIFO. To do this, open Control Panel > Administrative Tools > Event Viewer. Then right-click Application and choose Properties. In the Properties *window, change the maximum log size to 2048, and click the “Overwrite events as needed” radio button. Click OK to save the changes and close the Event Viewer and Administrative Tools screens.*

Deleting Reports

You can delete advanced reports only if your user ID has a high enough security level. For instructions on deleting reports, see the help topic for *The Crystal Enterprise Admin Tab*.

CREATING AND EDITING BASIC TABLES

Basic tables can include historical data for multiple devices and multiple quantities. Before you can view data in a table, you must have first logged the data in the SMS Setup Utility. For help, see the SMS online help file.

NOTE: If a table becomes too wide to print on an 8-1/2 by 11 printer, the information will be "tiled": it will display with column breaks in it. These breaks indicate where the page breaks will occur in printing.

Creating a Basic Table

After you pick "Table" as the report type and click Start (on the Create tab), the Select Devices and Quantities screen displays.

1. At the bottom of the screen are two radio buttons: Sort By Devices and Sort By Quantities. Check a button to choose the order in which you will select devices and quantities for this table.
2. Select the devices/quantities to be included in the table. You can include multiple devices and quantities.

   NOTE: There is a time delay between the Setup Utility and Advanced Reports. If you have just added a new device in the SMS Setup Utility, it may not show up here for several minutes.
3. Click Next.

   The Report Data and Time screen displays.
4. Choose the times and dates to be included in this report. Options are described in the table below. Some options require that you enter additional information.

   NOTE: If the calendar feature does not display correctly, type in the date.

Date/Time Option	Description
Current Month	The report includes all data logged in this month, up to the time that you run the report.
Previous xx Months ending last complete month	Choose the number of months (1-12) to be included. Includes only completed months, not the current month.
Previous xx Days ending midnight last night	Choose the number of days (1-365) to be included. Includes only completed days, not the current day.
Previous xx Hours ending last complete hour	Choose the number of hours (1-48) to be included. Includes only completed hours, not the current hour.
Shift	Choose the begin/end times (hh:mm:am/pm) for the shift to be included. Minutes must be in increments of 15 (15, 30, 45).
Custom Range 1	First, choose the beginning day of the week and time (hh:mm:am/pm). Then choose the ending day of week and time.
Custom Range 2	First choose the beginning month, date, and time (hh:mm:am/pm). Then choose the ending month, day, and time.
Fixed Data Range	Choose the begin/end dates and times (hh:mm:am/pm). Note: This report is not likely to be scheduled: the fixed date range will always produce the same output.

5. Click Next.

   The Confirm Save screen displays.
6. Type a unique Report Name. If you do not enter a name, the report will be called "My Report." Type a description (optional); the description displays in the View/Schedule tab when you roll over the report name. Click Next.

   The Save Report screen displays.
7. Click Finish.

The report is created and saved. The View/Schedule tab displays with the new table listed. You can view the report, schedule the report for later execution, or see history for the report. For information on using these options, click  in the upper right-hand corner of the View/Schedule tab (click the tabs to navigate between screens; do not click the Back button).

Editing a Basic Table

After you pick the report name and click Edit (on the Edit tab), the *Select Devices and Topics* screen displays. Follow steps 1 through 7 above to make changes to the report.

CREATING AND EDITING BASIC PIE CHARTS

Pie charts are basic reports that display data for a single device with multiple quantities or multiple devices with a single quantity. Before you can view data in a pie chart, you must have first logged the data in the SMS Setup Utility. For help with historical logging, see the SMS online help file.

Creating a Basic Pie Chart

After you pick “Pie” as the report type and click Start (on the Create tab), the Select Devices and Quantities screen displays.

1. At the bottom of the screen are two radio buttons: Sort By Devices and Sort By Quantities. Check a button to choose the order in which you will select devices and quantities for this table.
2. Choose the device/quantity combination that you want to include in the pie chart. You can include one device with multiple quantities or multiple devices with a single quantity.

   NOTE: There is a time delay between the Setup Utility and Advanced Reports. If you have just added a new device in the SMS Setup Utility, it may not show up here for several minutes.
3. Click Next.

   The Report Data and Time screen displays.
4. Choose the times and dates to be included in this report. Options are described in the table below. Some options require that you enter additional information.

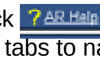
   NOTE: If the calendar feature does not display correctly, type in the date.

Date/Time Option	Description
Current Month	The report includes all data logged in this month, up to the time that you run the report
Previous xx Months ending last complete month	Choose the number of months (1-12) to be included. Includes only completed months, not the current month.
Previous xx Days ending midnight last night	Choose the number of days (1-365) to be included. Includes only completed days, not the current day.
Previous xx Hours ending last complete hour	Choose the number of hours (1-48) to be included. Includes only completed hours, not the current hour.
Shift	Choose the begin/end times (hh:mm:am/pm) for the shift to be included. Minutes must be in increments of 15 (15, 30, 45).
Custom Range 1	First, choose the beginning day of the week and time (hh:mm:am/pm). Then choose the ending day of week and time.
Custom Range 2	First choose the beginning month, date, and time (hh:mm:am/pm). Then choose the ending month, day, and time.
Fixed Data Range	Choose the begin/end dates and times (hh:mm:am/pm). Note: This report is not likely to be scheduled: the fixed date range will always produce the same output.

5. Click Next.

   The Confirm Save screen displays.
6. Type a unique Report Name. If you do not enter a name, the report will be called “My Report.” Type a description (optional); the description displays in the View/Schedule tab when you roll over the report name. Click Next.

   The Save Report screen displays.
7. Click Finish.

The report is created and saved in the The View/Schedule tab displays with the new pie chart listed. You can choose to view, schedule, or see history for the report. For information on using these options, click 

in the upper right-hand corner of the View/Schedule tab (click the tabs to navigate between screens; do not click the Back button).

Editing a Basic Pie Chart

After you pick the report name and click Edit (on the Edit tab), the Select Devices and Topics screen displays. Follow steps 1 through 7 above to make changes to the report.

CREATING AND EDITING BASIC TREND REPORTS

Basic trends can include historical data for up to 14 device/quantity combinations. You can create a trend that has one device and 14 quantities, 14 devices and one quantity, two devices and seven quantities, and so on. Before you can view data in a table, you must have first logged the data in the SMS Setup Utility. For help, see the SMS online help file.

Creating a Basic Trend

After you pick “Trend” as the report type and click Start (on the Create tab), the Select Devices and Quantities screen displays.

1. At the bottom of the screen are two radio buttons: Sort By Devices and Sort By Quantities. Check a button to choose the order in which you will select devices and quantities for this table.

   Choose the device/quantity combinations that you want to include in the trend. You can include up to 14 device/quantity combinations. There is a time delay between the Setup Utility and Advanced Reports. If you have just added a new device in the SMS Setup Utility, it may not show up here for several minutes.

   NOTE: You cannot include both power factor quantities and non-power factor quantities in a single trend.

2. Click Next.

   The Select Threshold Values screen displays.

3. (optional) Use this screen to set up threshold lines that will display in the trend. These colored lines can be set so that they indicate levels at which entries in the trend fall out of normal operating ranges. Click Next after you enter the threshold levels.

   NOTE: If you are not sure what levels to enter, you could run a real-time trend in the SMS browser view (Start > Programs > PowerLogic > System Manager Software > Real Time Trend tab). The levels that are plotted in the real-time trend will give you an idea of normal ranges. Then you can set the Highest, High, Low, and Lowest numbers to give indication of out-of-range readings.

   The Report Data and Time screen displays.

4. Choose the times and dates to be included in this report. Options are described in the table below. Some options require that you enter additional information.

   NOTE: If the calendar feature does not display correctly, type in the date.

Date/Time Option	Description
Current Month	The report includes all data logged in this month, up to the time that you run the report
Previous xx Months ending last complete month	Choose the number of months (1-12) to be included. Includes only completed months, not the current month.
Previous xx Days ending midnight last night	Choose the number of days (1-365) to be included. Includes only completed days, not the current day.
Previous xx Hours ending last complete hour	Choose the number of hours (1-48) to be included. Includes only completed hours, not the current hour.
Shift	Choose the begin/end times (hh:mm:am/pm) for the shift to be included. Minutes must be in increments of 15 (15, 30, 45).
Custom Range 1	First, choose the beginning day of the week and time (hh:mm:am/pm). Then choose the ending day of week and time.
Custom Range 2	First choose the beginning month, date, and time (hh:mm:am/pm). Then choose the ending month, day, and time.

Date/Time Option	Description
Fixed Data Range	Choose the begin/end dates and times (hh:mm:am/pm). Note: This report is not likely to be scheduled: the fixed date range will always produce the same output.

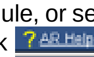
5. Click Next.

   The Confirm Save screen displays.

6. Type a unique Report Name. If you do not enter a name, the report will be called “My Report.” Type a description (optional); the description displays in the View/Schedule tab when you roll over the report name. Click Next.

   The Save Report screen displays.

7. Click Finish.

The report is created and saved in the The View/Schedule tab displays with the new trend listed. You can choose to view, schedule, or see history for the report. For information on using these options, click 

in the upper right-hand corner of the View/Schedule tab (click the tabs to navigate between screens; do not click the Back button).

Editing a Basic Trend

After you pick the report name and click Edit (on the Edit tab), the Select Devices and Topics screen displays. Follow steps 1 through 8 above to make changes to the report.

CREATING AND EDITING BASIC HISTOGRAMS

A histogram shows how often the various readings for a specific quantity occur in a given time period. Histograms display data for a single device with a single quantity. The histogram displays two charts:

- a bar chart that shows the number of samples taken for each range of the quantity
- a trend chart that show the cumulative percentage of these samples

Before you can view data in a histogram, you must have first logged the data in the SMS Setup Utility. For help, see the SMS online help file.

Creating a Basic Histogram

After you pick “Histogram” as the report type and click Start (on the Create tab), the Select Devices and Quantities screen displays.

1. At the bottom of the screen are two radio buttons: Sort By Devices and Sort By Quantities. Check a button to choose the order in which you will select devices and quantities for this table.
2. Choose the device and quantity that you want to include in the histogram.

   NOTE: There is a time delay between the Setup Utility and Advanced Reports. If you have just added a new device in the SMS Setup Utility, it may not show up here for several minutes.
3. Click Next.

   The Report Data and Time screen displays.
4. Choose the times and dates to be included in this report. Options are described in the table below. Some options require that you enter additional information.

   NOTE: If the calendar feature does not display correctly, type in the date.

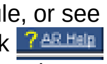
Date/Time Option	Description
Current Month	The report includes all data logged in this month, up to the time that you run the report
Previous xx Months ending last complete month	Choose the number of months (1-12) to be included. Includes only completed months, not the current month.
Previous xx Days ending midnight last night	Choose the number of days (1-365) to be included. Includes only completed days, not the current day.
Previous xx Hours ending last complete hour	Choose the number of hours (1-48) to be included. Includes only completed hours, not the current hour.
Shift	Choose the begin/end times (hh:mm:am/pm) for the shift to be included. Minutes must be in increments of 15 (15, 30, 45).
Custom Range 1	First, choose the beginning day of the week and time (hh:mm:am/pm). Then choose the ending day of week and time.
Custom Range 2	First choose the beginning month, date, and time (hh:mm:am/pm). Then choose the ending month, day, and time.
Fixed Data Range	Choose the begin/end dates and times (hh:mm:am/pm). Note: This report is not likely to be scheduled: the fixed date range will always produce the same output.

5. Click Next.

   The Confirm Save screen displays.
6. Type a unique Report Name. If you do not enter a name, the report will be called “My Report.” Type a description (optional); the description displays in the View/Schedule tab when you roll over the report name. Click Next.

   The Save Report screen displays.

7. Click Finish.

The report is created and saved in the The View/Schedule tab displays with the new histogram listed. You can choose to view, schedule, or see history for the report. For information on using these options, click  in the upper right-hand corner of the View/Schedule tab (click the tabs to navigate between screens; do not click the Back button).

Editing a Basic Histogram

After you pick the report name and click Edit (on the Edit tab), the Select Devices and Topics screen displays. Follow steps 1 through 7 above to make changes to the report.

CREATING AND EDITING ENERGY COST SUMMARIES

An energy cost summary lets you use your own facility's utility rates to estimate energy and demand costs. This report will contain data only if you have first used SMS to log quantities to your PC. The energy cost summary report can include data for multiple devices (maximum 20) and multiple quantities.

Estimating Missing Data

If you choose a date range for which a device and quantity do not contain data, then data for that time period is interpolated or extrapolated (estimated) from the other available data. If no data is found for any selected device and quantity in the time period, the report will indicate that there is no data.

Missing data for a single device a is estimated in this manner:

Two data points are chosen that bracket the missing data point(s): one point just before and one point just after the missing period. If there are no points in one direction, then two points will be used in the direction that points exists. In other words, if there are no data points before the missing time period, then the report uses the two nearest points after the missing time period. These points will be used to estimate the missing point for the desired time period.

The report will report the estimated data points on a line between the two known points.

If you suspect that data is missing from a report, you can run a Basic Report (table) for the same device(s) and time period. Where data is missing, the cells in the table will say "Missing value."

Creating an Energy Cost Summary

After you pick Energy Cost Summary (on the Create tab, click Powerlogic Reports > Advanced Reports > Cost Reports > Energy Cost Summary), the Select Report Type screen displays.

1. Check the radio button for the report type: water, air, gas, electricity (default), or steam. Click Next.

   NOTE: You must have logged report data for this report type in SMS. For help with logging, see the SMS Setup Utility online help file.

2. From the Select Quantities screen, select up to six consumption and/or demand quantities to be included in the report. For electricity reports, quantities that belong to the Consumption and Demand information types and Click Next.
3. From the Select Devices screen, check the devices you want to include. (The list only includes devices that have data logged for the quantities you selected.) Click Next.

   NOTE: There is a time delay between the Setup Utility and Advanced Reports. If you have just added a new device in the SMS Setup Utility, it may not show up here for several minutes.

   The Select Main and Demand Option screen displays.

4. If you want to report data using one of the devices as a main, select that device from the list. Otherwise, accept the default of "None."

   If you included demand quantities in step 2, the "Demand Calculation" field becomes live.

5. From the Demand Calculation list, choose the method you want used to determine the peak demand date/time, then click Next. Methods are:

   Coincident (with a Main Device)
   You have selected a main, and you want the peak demand date/time of

the main device to be used for all sub-devices in this report. If a TOU schedule is selected, peak demand is determined by comparing the demand intervals in the TOU period (on-peak, off-peak, etc.). If there are multiple peaks, only the last peak is reported.

Example: TOU1 is defined as 6:00-10:00 and 16:00-18:00 (4-6pm). The peak demand for the Main is determined during TOU1; the associated date/time is applied to the sub-devices which provides *demand coincident with the main*. This process is repeated for all defined TOU periods.

Coincident (without a Main Device)

You have not selected a main; peak demand date/time is calculated by finding the demand interval with the highest demand sum for all of the devices selected for the report. This sum becomes the peak demand value. The date/time of the peak demand is applied to all devices in the report. If a TOU schedule is selected, peak demand is determined by comparing the demand intervals in the TOU period (on-peak, off-peak, etc.). If there are multiple peaks, only the last peak is reported.

Independent

You want the peak demand value and time to be determined for each individual device.

Peak = the Max of the Absolute value of each sample.

The peak Demand for a given TOU period (on-peak, off-peak, etc.) is obtained from its time band in the TOU period. If there are multiple peaks, this report uses the last peak.

The Select Time of Use screen displays.

6. Click the radio button for type of calculation you want to use: Flat Rate or TOU. If you choose TOU, the Schedule and Version fields become live: choose the schedule and version (sub-schedule) that you want to use.

   Depending on the type of calculation you chose, a Define Changes screen displays with a table of information. You must enter the appropriate rate information.

7. To edit the information for a charge, click “Edit” in the left-hand column; after you make the change(s) for that charge, click OK. Click Next after you enter the data for all of the charges.

   If you chose Electric is step 1, and TOU in step 6, the table has these fields:

Table Item	Description
Charge Name	A user-defined name (1-32 characters); you can edit this field.
Quantity	The quantities chosen on the Select Quantities screen (step 2)
Units	The units associated with this quantity (such as kWh)
Base Rate	One of two amounts: 1-The only rate used over the entire period of the report 2-An additional charge used if you enter amounts into the TOU columns (example: If base rate = $0.01 per kWh, and On Peak = $0.05 per kWh, the total rate used for On Peak is $0.06 per kWh)
TOU Columns	There will be a column for each TOU period that is defined in the selected TOU schedule (On Peak, Off Peak, etc). For each charge, you must enter a rate for each TOU period. The currency used is defined in the regional settings of the server PC.

If you chose Water, Air, Gas, or Steam in step 1, or if you chose Electric in step 1 and Flat Rate in step 6, the table has these fields:

Table Item	Description
Charge Name	A user-defined name (1-32 characters); you can edit this field.
Quantity	The quantities chosen on the Select Quantities screen (step 2)
Units	The units associated with this quantity (such as kWh)
Rate	The actual rate for each charge. The rate currency used is defined in the regional settings of the server PC.

The Define Charges (Miscellaneous) screen displays.

8. Enter any additional charges (1-32 characters), such as taxes or service charges, and their rates. You can enter up to six charges. The rate currency is defined in the regional settings of the server PC.

   The Report Date/Time screen displays.

9. Choose the date range for the data to be included in this report. Options are described in the table below. Some options require that you enter additional information.

   NOTE: If the calendar feature does not display correctly, type in the date.

Date/Time Option	Description
Current Month	The report includes all data logged in this month, up to the time that you run the report
Previous xx Months ending last complete month	Choose the number of months (1-12) to be included. Includes only completed months, not the current month.
Previous xx Days ending midnight last night	Choose the number of days (1-365) to be included. Includes only completed days, not the current day.
Previous xx Hours ending last complete hour	Choose the number of hours (1-48) to be included. Includes only completed hours, not the current hour.
Custom Range 1	First, choose the beginning day of the week and time (hh:mm:am/pm). Then choose the ending day of week and time.
Custom Range 2	First choose the beginning month, date, and time (hh:mm:am/pm). Then choose the ending month, day, and time.
Fixed Data Range	Choose the begin/end dates and times (hh:mm:am/pm). This report is not likely to be scheduled: the fixed date range will always produce the same output.

10. Click Next.

    The Confirm Save screen displays.

11. Type a unique Report Name. If you do not enter a name, the report will be called “My Report.” Type a description (optional); the description displays in the View/Schedule tab when you roll over the report name. Click Next.

    The Save Report screen displays.

12. Click Finish.

    The report is created and saved in the The View/Schedule tab displays with the new pie report listed. You can choose to view, schedule, or see history for the report.

    If you chose TOU for type of calculation and the report includes 6 months or more of data, you need to schedule the report rather than view it. You can schedule it to execute “now,” but it may not display if you choose the View option.

For information on using these options, click 

in the upper right-hand corner of the View/Schedule tab (click the tabs to navigate between screens; do not click the Back button).

Editing an Energy Cost Summary

After you pick the report name and click Edit (on the Edit tab), the Select Report Type screen displays. Follow steps 1 through 12 above to make changes to the report.

CREATING AND EDITING 100MSEC REPORTS

You will use 100msec reports to view historical data for devices that can log millisecond values. The 100msec report can include data for a single device and multiple quantities.

You must use on-board logging in order to be able to view data in this report. If you use data from PC-based logging, the report header will display, but there will be no data.

In This Section

Setting Up the 100ms Report

Before you can create the report, you need to set up the 100msec RMS log to record data for the report. Follow these steps for each device that you want to be able to include in 100msec reporting:

1. In the SMS Setup Utility (Start > Programs > PowerLogic > SMS Setup), open a device for configuration (Setup > Devices/Routing). Pick the specific device and click Configure.
2. On the OnBoard Alarms/Events tab, set up the related alarm (for example, you might set up an overcurrent or phase unbalance alarm). Be sure to click the 100ms RMS button on the lower right part of the setup window.

   On this same tab, set the Priority to something greater than zero. This causes the circuit monitor to force an entry into the 100ms RMS data log file when the alarm becomes active.
3. On the OnBoard Files tab, enable the 100ms RMS Recorder file. Enter the maximum number of entries that you want to be stored in the log file (1-3,200).
4. Save the configuration settings and close the setup window.
5. Set up a scheduled task to upload 100ms data to the PC (Setup > Scheduled Task): create an Onboard Data Log/Waveform task, and select the 100ms RMS file. Make sure you add a reference time to make the upload effective.
6. Allow sufficient time to log enough data for the report.

Creating a 100msec Report

After you pick “100msec” as the report type and click Start (on the Create tab), the Select Devices and Quantities screen displays.

1. At the bottom of the screen are two radio buttons: Sort By Devices and Sort By Quantities. Check a button to choose the order in which you will select devices and quantities for this table.
2. Choose the device/quantity combination that you want to include in the pie chart. You can include a single device, but multiple quantities.

   NOTE: There is a time delay between the Setup Utility and Advanced Reports. If you have just added a new device in the SMS Setup Utility, it may not show up here for several minutes.
3. Click Next.

   The Report Data and Time screen displays.

4. The only option is Fixed Data Range: Choose begin and end dates and times to be included in this report.

   NOTE: If the calendar feature does not display correctly, type in the date.

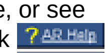
5. Click Next.

   The Confirm Save screen displays.

6. Type a unique Report Name. If you do not enter a name, the report will be called “My Report.” Type a description (optional); the description displays in the View/Schedule tab when you roll over the report name. Click Next.

   The Save Report screen displays.

7. Click Finish.

The report is created and saved in the The View/Schedule tab displays with the new 100msec report listed. You can choose to view, schedule, or see history for the report. For information on using these options, click 

in the upper right-hand corner of the View/Schedule tab (click the tabs to navigate between screens; do not click the Back button).

Editing a 100msec Report

After you pick the report name and click Edit (on the Edit tab), the Select Devices and Topics screen displays. Follow steps 1 through 7 above to make changes to the report.

CREATING AND EDITING SEVEN-DAY ENERGY USAGE REPORTS

The seven-day energy usage report displays total energy usage (kWh) for multiple devices. Information is displayed for a seven day period, and can include one, two, or three shifts. You can include CM4000, CM3000, and PM800 devices.

Estimating Missing Data

If you choose a date range for which a device and quantity do not contain data, then data for that time period is interpolated or extrapolated (estimated) from the other available data. If no data is found for any selected device and quantity in the time period, the report will indicate that there is no data.

Missing data for a single device a is estimated in this manner:

Two data points are chosen that bracket the missing data point(s): one point just before and one point just after the missing period. If there are no points in one direction, then two points will be used in the direction that points exists. In other words, if there are no data points before the missing time period, then the report uses the two nearest points after the missing time period. These points will be used to estimate the missing point for the desired time period.

The report will report the estimated data points on a line between the two known points.

If you suspect that data is missing from a report, you can run a Basic Report (table) for the same device(s) and time period. Where data is missing, the cells in the table will say “Missing value.”

Creating a Seven-Day Energy Usage Report

After you pick “Seven Day Energy Usage By Shift” as the report type and click Start (on the Create tab), the Select Devices screen displays.

1. Choose the devices to be included in the shift energy usage report. You can include up to 20 devices.

   NOTE: There is a time delay between the Setup Utility and Advanced Reports. If you have just added a new device in the SMS Setup Utility, it may not show up here for several minutes.

2. Click Next.

   The Select Shifts screen displays.

3. Check the Enable box for each shift that you want to include in the report. Click Next.

4. Define the shift times, then click Next. For each shift that you include, a default time span displays. You can edit the times to match your shift schedule. Shift times cannot overlap, and they must be in 15-minute increments (for example, 7:00, 7:15, 7:30, or 7:45).

5. If you enable shift 3, this message displays: “Report shift 3 usage on day shift.” Shift 3 often spans midnight; thus, energy data is accumulated across two days. You must decide whether you want shift 3 energy reported in the first day (before midnight) or the second day (after midnight).
   - Click **Begins** to record the energy from shift 3 on the first day.
   - Click **Ends** to record the energy from shift 3 on second day.

   The Shift Data Range screen displays.

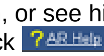
6. The default “Previous 7 days” includes data for the most recent seven days, ending at midnight. Or, click “Specific 7 day period starting on” if you want to use the calendar to choose the starting date. Click Next.

The Confirm Save screen displays.

7. Type a unique Report Name. If you do not enter a name, the report will be called “My Report.” Type a description (optional); the description displays in the View/Schedule tab when you roll over the report name. Click Next.

   The Save Report screen displays.

8. Click Finish.

The report is created and saved. The View/Schedule tab displays with the new shift energy report listed. You can view the report, schedule the report for later execution, or see history for the report. For information on using these options, click 

in the upper right-hand corner of the View/ Schedule tab (click the tabs to navigate between screens; do not click the Back button).

Editing a Seven-Day Energy Usage Report

After you pick the report name and click Edit (on the Edit tab), the *Select Devices and Topics* screen displays. Follow steps 1 through 8 above to make changes to the report.

CREATING AND EDITING MULTI-DEVICE ELECTRICAL USAGE REPORTS

Multi-device electrical usage reports display real energy usage (kWh) for up to 14 devices. You can choose to view data for one period, or you can view data for two periods, showing the differences between the two periods. The report displays energy usage for each device as well as total energy usage.

The report displays in two parts:

- a pie chart, illustrating the percentage of energy used by each device
- a table, illustrating the energy used by each device in each period, and the delta between them

Estimating Missing Data

If you choose a date range for which a device and quantity do not contain data, then data for that time period is interpolated or extrapolated (estimated) from the other available data. If no data is found for any selected device and quantity in the time period, the report will indicate that there is no data.

Missing data for a single device a is estimated in this manner:

Two data points are chosen that bracket the missing data point(s): one point just before and one point just after the missing period. If there are no points in one direction, then two points will be used in the direction that points exists. In other words, if there are no data points before the missing time period, then the report uses the two nearest points after the missing time period. These points will be used to estimate the missing point for the desired time period.

The report will report the estimated data points on a line between the two known points.

If you suspect that data is missing from a report, you can run a Basic Report (table) for the same device(s) and time period. Where data is missing, the cells in the table will say “Missing value.”

Creating a Multi-Device Electrical Usage Report

After you pick “Multi-Device Electrical Usage” as the report type and click Start (on the Create tab), the Select Devices screen displays.

1. Choose up to 14 devices to include in the usage report. Click Next.

   NOTE: There is a time delay between the Setup Utility and Advanced Reports. If you have just added a new device in the SMS Setup Utility, it may not show up here for several minutes.

   The Select Interval and Comparison Period screen displays.
2. Select the interval to display in the report: Day or Month.

   If you choose Day, the report displays data for each date (January 1, January 2, etc.) included in the comparison period (past month, current month, etc.). For example, if you choose “Day” and “This Month and Last,” data displays for every day in the current and previous month.

   If you choose Month, the report displays data for each month (January, February, etc.) included in the comparison period (Last Year, This Year, etc.). For example, if you choose “Month” and “This Year,” data displays for every month in the current year.
3. Click Next.

   The Confirm Save screen displays.
4. Type a unique Report Name. If you do not enter a name, the report will be called “My Report.” Type a description (optional); the description displays in the View/Schedule tab when you roll over the report name. Click Next.

The Save Report screen displays.

5. Click Finish.

The report is created and saved in the The View/Schedule tab displays with the new multiple-device energy report listed. You can choose to view, schedule, or see history for the report. For information on using these options, click  in the upper right-hand corner of the View/Schedule tab (click the tabs to navigate between screens; do not click the Back button).

Editing a Multi-Device Electrical Usage Report

After you pick the report name and click Edit (on the Edit tab), the Select Devices and Topics screen displays. Follow steps 1 through 5 above to make changes to the report.

CREATING AND EDITING SINGLE-DEVICE REPORTS

Single-device electrical usage reports display real energy usage (kWh) for one device. You can choose to view data for one period, or you can view data for two periods, showing the differences between the two periods. The report displays energy usage for each device as well as total energy usage.

The report displays in two parts:

- a trend illustrating the energy used by the device
- a table, illustrating the energy used by the device in each period, and the delta between them

Estimating Missing Data

If you choose a date range for which a device and quantity do not contain data, then data for that time period is interpolated or extrapolated (estimated) from the other available data. If no data is found for any selected device and quantity in the time period, the report will indicate that there is no data.

Missing data for a single device a is estimated in this manner:

Two data points are chosen that bracket the missing data point(s): one point just before and one point just after the missing period. If there are no points in one direction, then two points will be used in the direction that points exists. In other words, if there are no data points before the missing time period, then the report uses the two nearest points after the missing time period. These points will be used to estimate the missing point for the desired time period.

The report will report the estimated data points on a line between the two known points.

If you suspect that data is missing from a report, you can run a Basic Report (table) for the same device(s) and time period. Where data is missing, the cells in the table will say “Missing value.”

Creating a Single-Device Electrical Usage Report

After you pick “Single-Device Electrical Usage” as the report type and click Start (on the Create tab), the Select Devices screen displays.

1. Choose the device to include in the usage report. Click Next.

   NOTE: There is a time delay between the Setup Utility and Advanced Reports. If you have just added a new device in the SMS Setup Utility, it may not show up here for several minutes.

   The Select Interval and Comparison Period screen displays.
2. Select the interval to display in the report: Day or Month.

   If you choose Day, the report displays data for each date (January 1, January 2, etc.) included in the comparison period (past month, current month, etc.). For example, if you choose “Day” and “This Month and Last,” data displays for every day in the current and previous month.

   If you choose Month, the report displays data for each month (January, February, etc.) included in the comparison period (Last Year, This Year, etc.). For example, if you choose “Month” and “This Year,” data displays for every month in the current year.
3. Click Next.

   The Confirm Save screen displays.
4. Type a unique Report Name. If you do not enter a name, the report will be called “My Report.” Type a description (optional); the description displays in the View/Schedule tab when you roll over the report name. Click Next.

The Save Report screen displays.

5. Click Finish.

The report is created and saved in the The View/Schedule tab displays with the new single-device energy report listed. You can choose to view, schedule, or see history for the report. For information on using these options, click  in the upper right-hand corner of the View/Schedule tab (click the tabs to navigate between screens; do not click the Back button).

Editing a Single-Device Electrical Usage Report

After you pick the report name and click Edit (on the Edit tab), the Select Devices and Topics screen displays. Follow steps 1 through 5 above to make changes to the report.

USING THE EDIT TAB

Use the Edit tab to begin making changes to select a report that you want to edit.

PowerLogic Reports Folder Structure

The illustration below illustrates the paths to the various PowerLogic reports:

PowerLogic Reports

- **Advanced Reports**: → **Cost Reports:** → **Power Quality Reports:** → **Usage Reports:**
  - Cost Reports: Energy Cost Summary
  - Power Quality Reports: 100 msec Report
  - Usage Reports: Multi-Device Electrical Usage, Seven-Day Energy Usage by Shift, Single-Device Electrical Usage
- **Basic Reports**: → Histogram, Pie, Table, Trend
- **System Reports**: → **Activity Logs**
  - SMS Advanced Reports Activity Log

You will only be able to edit a report from the Edit tab if it is located in the default reports directory in Crystal Enterprise. Moving reports out of the default directory can only be done from within Crystal Enterprise, not from SMS. If you move a report out of the default folder, it will no longer have the same security that it has in the default folder

Follow these steps to begin editing a report:

1. Click PowerLogic Reports, then locate and click the report type.

   All of the reports of that report type display on the screen.
2. Click the radio button next to the report you want to edit.

   A button called Edit displays below the reports.
3. Click Edit to launch the wizard for that report. For help in using the wizard to edit your report, click  in the upper right-hand corner of the screen.

If you have already scheduled the report for execution, you do not need to re-schedule it.

THE CRYSTAL ENTERPRISE ADMIN TAB

The Admin tab is used primarily to begin entering Crystal Enterprise information. Except for the View/Schedule, Create, and Edit tabs, any link that you click will take you to a Crystal Enterprise screen.

NOTE: In Advanced Reports, click the tabs to navigate between screens; do not click the Back button.

Unless you understand how to use Crystal Enterprise to make administrative settings, you should not use this screen.

Deleting Reports

You can delete advanced reports only if your user ID has a high enough security level. Follow these steps:

1. Click the Crystal Management Console tab link.
2. On the Console tab, in the Organize box, click Objects.
   A list of all objects (reports) displays.
3. Check the “Selected” box to the right of each report that you want to delete. Click OK.
   A prompt displays asking if you want to delete the selected item(s).
4. Click OK.
   The selected reports are deleted.

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