

# **MV-WEB**

User Guide

Version 4.3

## Identification

MV-WEB User Guide  
TDR-0011-003 06/04  
Software Version 4.3

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- Website: support.itron.com
- Fax: 919-876-8980
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The technical support representative may also ask you to provide some or all of the following information:

- Application Version number
- Error message text
- Error message log file
- Screen name
- Function performed prior to the problem

# Revision History

Major revisions and functionality changes are noted with change bars on the outer margin of the affected pages. These revisions—and their history—are noted below with the latest revisions listed first.

<b>Date Document Number</b>	<b>Chapter Description</b>
June 2004 TDR-0011-003	<b>Chapter 1</b> System Requirements changed to reflect Java Plug-in requirements <b>Appendix A</b> Deleted
October 2003 TDR-0011-002	<b>Chapter 2</b> Changed MV-WEB Main screen graphic (Figure 2 on page 7) to reflect the screen's new look <b>Chapter 3</b> A new topic was added called "Saving a Graph as a Bitmap or JPEG File" on page 16 Added a new report called "Load Duration Graph" on page 31
March 2002 TDR-0011-001	<b>Chapter 1</b> Renamed "Product Overview" <b>Chapter 2</b> Renamed "User Interface" Added new topic called "Logging On to MV-WEB" Added new information to the "View Help" topic Added new chapter, Chapter 4 "MV-WEB Options Menu" Added Appendix A, "Java Console"
July 2001 TDR-0011-000	<b>Chapter 1</b> Added section on MV-WEB Options Menu button Added section on Meter Aggregation





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# ***Before You Begin***

This document describes all setup procedures, jobs, and maintenance tasks that are performed within the MV-WEB system. This manual is designed as a reference guide to quickly located information needed to perform data viewing, management, and reporting tasks.

## **Prerequisites**

Before beginning to use this manual, you should have a working knowledge of your operating system and its conventions. You should know how to use a mouse, standard menus, and commands.

## **Related Documents**

- *MV-WEB System Administration Guide*

## **How This Book is Organized**

- “List of Figures” on page vii provides an alphabetical list of all figures, diagrams, illustrations, and examples of application windows in this document.
- “List of Tables” on page ix provides an alphabetical list of all tables in this document.
- “List of Procedures” on page xi provides an alphabetical list of all procedures in this document.
- Chapter 1, “Product Overview” on page 1 provides an introduction to the features and functions in MV-WEB.
- Chapter 2, “User Interface” on page 5 defines system elements and usage. Helps new MV-WEB users quickly become acquainted with menus, screens, and buttons.
- Chapter 3, “Viewing Reports” on page 15 provides the steps necessary to view MV-WEB reports and graphs and explains the data contained within each.
- Chapter 4, “MV-WEB Menu Options” on page 33 explains the features and functions of the MV-WEB Options Menu button.
- “Glossary” on page 45 provides an alphabetical list and definitions of common terminology used in this document.
- “Index” on page 47 provides an alphabetical index of items used in this document.

## Conventions

This document uses the following conventions.

*Table 1: Document Conventions*

Convention	Example
Keypresses are in <b>bold</b> .	Press <b>Enter</b> when complete.
Menu paths are in <b>bold</b> .	From the <b>Start</b> menu, choose <b>File &gt; Save As</b> . (This example instructs the user to choose <b>File</b> from the <b>Start</b> menu; then choose <b>Save As</b> from the <b>File</b> menu.)
Computer commands to be typed by the user are in Courier New font.	At the C: prompt, type <code>cd itron/bin</code>
File names are in Courier New font.	The data is uploaded to the <code>upload.dat</code> file
Hypertext links are blue.	See “Contents” on page v for details regarding previous and recent revisions.
The last line in a table is defined by a thick gray line.	Note the thick gray line below this row. If the table continues on another page, the table number, title, and column headings are repeated on each page.

**Note** This document was designed to be distributed electronically and then printed on a laser printer on an as-needed basis. For this reason, the fonts and layout of this document have been chosen for optimal printing rather than for optimal viewing on-screen. To review this document on-screen, however, simply increase the magnification using the Adobe magnification box.



# ***Chapter 1***

## ***Product Overview***

MV-WEB is an off-the-shelf data access solution that enables energy providers to deliver critical data to their commercial and industrial (C&I) customers as a value-added service. Using the Internet, MV-WEB provides secure and reliable access to interval load data.

In this chapter:

- About MV-WEB
- System Requirements
- Features

## About MV-WEB

MV-WEB works hand in hand with the MV-90 data collection and analysis software and is fully compatible with the MV-90 Open Database Connectivity (ODBC) tables. MV-90 customers can quickly and easily deploy MV-WEB to meet the data access needs of their important commercial and industrial customers at a low incremental cost. MV-WEB can also download data to your computer in a delimited ASCII format for import into spreadsheet programs or other data systems.

With MV-WEB, you can use data to gain a more precise understanding of your energy usage and costs, thereby enabling you to structure your business operations to take advantage of more favorable rates, or to pursue bulk purchasing and aggregation opportunities. You can fine tune equipment operation and startup schedules to reduce or eliminate costly demand peaks.

## System Requirements

To access MV-Web, you need a computer equipped with Internet access, and a web browser that supports the Java Plug-in. Supported browsers include Internet Explorer 4.0 or higher, and Netscape Navigator 4.x or higher. If the Java Plug-in is not installed on the machine, MV-Web will download and install it automatically.



## Features

MV-WEB is a fully web-based data display and analysis product that is closely integrated with Itron's MV-90 system. MV-WEB uses Java™ servlets and applets to query information from the database, pass the query results to the end-user machine, and formats the query results for display. The features of MV-WEB include:

- Reports and Graphs
- Meter Aggregation

### Reports and Graphs

Reports and graphs can be viewed by selecting the report type and desired format from the MV-WEB main screen. Selecting the Meter ID, Channel, Interval Length, and Start/End dates to determine the data to include in the report or graph. MV-WEB has several report and graph options to choose from—Peak Day, 24-Hour Profile, Detail Profile, Daily Peaks, Daily Totals, KVA/Power Factor, Peaks Report, Statistics Report, Comparison Graph, Meter Interrogation Schedule Report, and the Meter Map Report. Report data can be viewed as either a bar graph, line graph, or table by clicking the appropriate button. For more information see Chapter 3, “Viewing Reports” on page 15.

### Meter Aggregation

The Meter Aggregation feature of MV-WEB is used to build virtual aggregate meters for display, print, analysis, and download. This feature is accessed by clicking the **MV-WEB Options Menu** button. With meter aggregation, you can define an aggregate meter ID and select multiple channels of similar data types to calculate the total. Like other meters in MV-WEB, aggregate meters can be viewed as a report or graph. For more information on this feature, see “Meter Aggregation” on page 34 of *Chapter 4 Menu Options*.

### Call Meter

The Call Meter (meter interrogation) function is used to request meter data from MV-90 for a selected date and time. MV-WEB submits a task request to MV-90 to pull data from a selected meter. The meter where that data is retrieved is set by your System Administrator through the MV-WEB Administration Tool. In addition, the system administrator uses the MV-WEB Administration Tool, to set the time range and frequency that data is pulled from the selected meter. For more information on meter interrogation, see “Call Meter” on page 36 of *Chapter 4 Menu Options*.





## ***Chapter 2*** ***User Interface***

This chapter covers the major components of the MV-WEB interface. MV-WEB has an easy to use interface with user-configurable login screens. The MV-WEB interface is composed of toolbars, screens, and buttons.

In this chapter:

- Logging On to MV-WEB
- MV-WEB Main Screen
- Toolbar Buttons

## Logging On to MV-WEB

To access the MV-WEB system, use your web browser to log on to MV-WEB. Your utility company will provide you with the URL. At the MV-WEB Log In screen, enter your **User name** and your **Password**. From the **Language** drop-down list, select a language and click **Login**.

**Note** If you are using Internet Explorer (IE) to log on to MV-WEB for the first time, it may take longer to connect to the application. During the log on process, IE downloads and installs a .cab file which increases the login time.

**Note** The Log In screen may be customized to display the branding of your utility. Please see your System Administrator for further information.

Figure 1: MV-WEB Logon Screen

**Welcome to MVWeb**

**Please log in:**

User name:

Password:

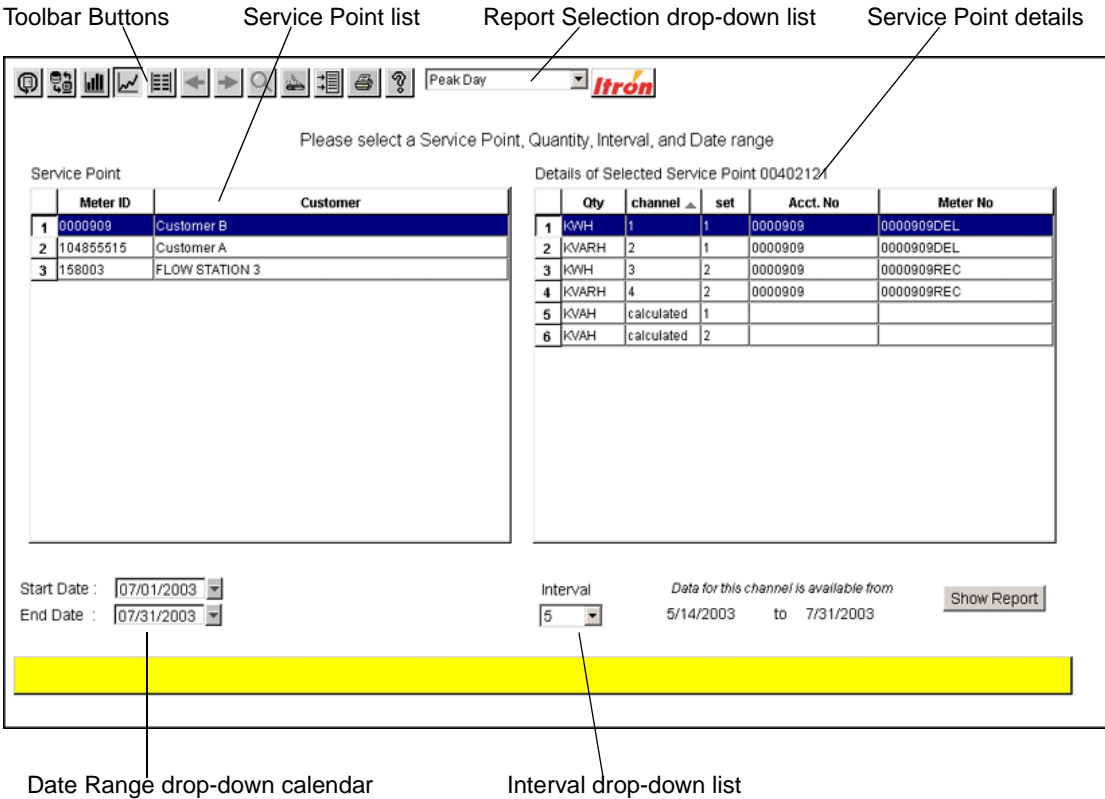
Language:  ▼

Login

# MV-WEB Main Screen

The main screen appears once you've logged on to MV-WEB. It is on the main screen that you can select the type of report you want to view and set the parameters for that report. The figure below depicts a standard MV-WEB main screen and points out the elements of the screen.

Figure 2: MV-WEB Main Screen



**Note** The Meter ID list may be labeled Service Point depending on variables set by the System Administration in the MV-WEB Administration Tool.

## Report Selection Parameters

To view data using MV-WEB, the following parameters must be set on the main screen:

Table 2: Report Selection Parameters

Parameter	Description
Service Point	The <b>Service Point</b> list displays all data IDs to which you have access. The IDs listed include various types of meter configurations, such as metering points, summary data, and aggregate meters. You can sort the list by meter name or description by clicking the appropriate heading.












Table 2: Report Selection Parameters continued ...

Parameter	Description
Details of Selected Service Point	<p>Once a meter is selected from the Service Point list, the channels for that meter appear in this detailed list. This list displays the following:</p> <ul style="list-style-type: none"> <li>Quantity</li> </ul> <p><b>Note</b> Quantity types include kWH, kVARH, kVAH, and I2V2 (for Volts).</p> <ul style="list-style-type: none"> <li>Channel Number</li> <li>Set Number</li> <li>Account Number</li> <li>Meter Number</li> </ul>
Date Range	<p>To set the date range, select the <b>Start Date</b> and <b>End Date</b> by using the drop-down calendar. You can also type the desired date range in the appropriate text boxes. The System Administrator can set the date formats. Date format options are:</p> <ul style="list-style-type: none"> <li>Month/Day/Year</li> <li>Year/Month/Day</li> <li>Day/Month/Year</li> </ul>
Interval	<p>From this drop-down list you can select the interval length to view the recorded data. The system defaults to the length the data was initially recorded. In addition, the interval lengths are multiples of the default length and are also divisors of 60 minutes. For example, if the meter data was recorded in 15-minute intervals, then the <b>Interval</b> list defaults to 15 minutes but you can also choose 30-minute or 60-minute intervals.</p>

## Toolbar Functions

The toolbar displayed on the main screen contains buttons for common MV-WEB tasks. Also, the toolbar remains on screen whenever reports or graphs are generated. By placing your cursor on a button, a tooltip appears to identify the button. The table below identifies and gives a general description of each button. Each button is described in the table below.

Table 3: MV-WEB Toolbar Buttons

Button Name	Icon	Description
Log in as a Different User		Returns to the login screen.
Retrieve New Data from the Database		Displays main screen where you can select meters, quantities, and reports.
View as a Bar Graph		Displays data as a bar graph.
View as a Line Graph		Displays data as a line graph.
View as a Table		Displays data as a table.
View Previous Day/View Next Day		Displays each day within a selected date range.
Zoom Out		Reverses zoom in.
MV-WEB Options Menu		Opens the Select Options dialog box where you can select specific options such as Meter Aggregation and Call Meter.
Save Data as a Local File		Downloads data to be saved in a user-defined delimited ASCII file.
Print		Prints current screen.
View Help		Opens the MV-WEB online help.

## Logging On as a Different User

When you click the **Log in as a Different User** button, the system exits MV-WEB and returns to the Login screen. From that screen you can log in as a different user. See “Logging On to MV-WEB” on page 6 for more information.

## Retrieving New Data

You can return to the main screen to select a different meter (service point), channel, quantity, interval size, or date range by clicking the **Retrieve New Data from the Database** button.

### To Select a New Meter, Quantity, and/or Date Range

1. Click **Retrieve New Data from the Database**. The main screen is displayed.
2. Select a meter (service point), quantity, interval size, and date range.
3. Select a report from the drop-down menu.
4. Click **Show Report**.

## Viewing Data

You have three options to view data within MV-WEB.

- **View as a Bar Graph**
- **View as a Line Graph**
- **View Data as a Table**

The **View as a Bar Graph** and **View as a Line Graph** buttons are functional with all reports *except* the “Peaks Report” and the “Statistics Report”. Those two reports do not contain graphic data and are displayed as a table only. The **View as a Table** button is functional with all reports. Choose any one of the buttons before you click **Show Report** and the data is displayed accordingly. After the report appears, you can switch between table, bar, and line graph at any time. When the report data is displayed as a table, the timestamp for each interval represents the ending time of the selected interval.

**Note** The **View as a Table** button is not available to all users. The System Administrator determines who has access to this button. The button appears dimmed when it is unavailable and an error message appears when you click it. See your System Administrator for further assistance.

## Using Previous/Next Day Functions

The **View Previous Day** and **View Next Day** buttons are functional with the “Peak Day” report, the “24-Hour Profile Graph”, and the “Detail Profile Graph”. Use these buttons to quickly move back and forth between screens showing data for each day within a selected date range.

**Note** While viewing a Peak Day report, clicking either button defaults to the 24-Hour Profile report.

## Using Zoom In/Zoom Out Functions

When viewing a graph, you can enlarge a section of it to view. Using the left mouse button, drag the pointer over the section of the graph you want to enlarge. Release the mouse button and the section you selected is enlarged. To reverse this action, click the **Zoom Out** button.

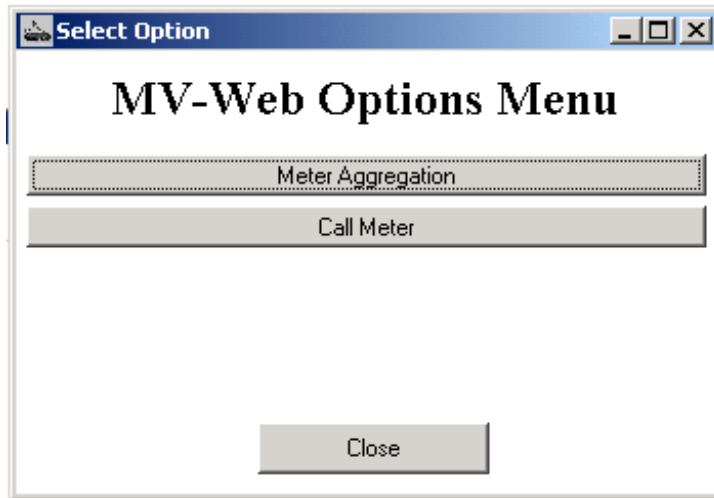
**Note** You can also reverse the Zoom In action by selecting your original report choice from the report selection drop-down list.



## Accessing the MV-WEB Options Menu

You can request meter data from MV-90 and aggregate meters by clicking the **MV-WEB Options Menu** button. From the Select Option dialog box you can choose one of the following options as displayed in below.

Figure 3: Select Options dialog box



- **Meter Aggregation** – Through this option you can define an aggregate meter ID and select multiple channels of similar data types to calculate the total. Once created, you can view aggregate meters as a report or graph.
- **Call Meter** – Also known as meter interrogation. Click this button to request meter data from MV-90 for a designated date and time range.

For more detailed information on the functions of the MV-WEB Options Menu, see Chapter 4, “MV-WEB Menu Options” on page 33.

## Downloading and Saving Data

You can download data and import it into a spreadsheet by clicking the **Save Data as a Local File** button. This function saves all the data related to the meter, channel, and date range selected. You can also choose whether to download usage or demand data.

**Note** Like the **View Data as a Table** button as described in “Viewing Data” on page 10, the **Save Data as a Local File** button is not be available for all users. The System Administrator determines who has access to the function. When disabled, the button is dimmed and an error message appears when clicked. See your System Administrator for further assistance.

### To Download and Save Data

1. Click **Save Data as a Local File**.
2. Select whether to download Usage or Demand data from the dialog box.
 

**Note** The system defaults to Usage.
3. Choose a target directory and enter a filename in the Save As dialog box.

The data is saved in delimited ASCII format. By using the ASCII format, the saved data can be imported into a spreadsheet program (like Excel or Lotus).

## Printing Data

You have several options to print data reports and graphs within MV-WEB. The first option is by clicking the **Print** button displayed on the main toolbar.

### To Print Reports and Graphs

1. Click **Print** to display the Print dialog box.
2. In the Printer area, select the Printer where the report will be sent.
3. Click **Properties** in the Printer area to set the page orientation to Landscape.
 

**Tip** Setting the page orientation to Landscape ensures that the report prints correctly.
4. If the report generates more than one page, select the Print Range to determine which pages to print.
5. In the Copies area, select the number of additional copies to print and click **OK**.

### Printing Data Displayed in a Table

If the report you generated is displayed as a table, the **Print Current View** and **Print Entire Range** buttons appear at the bottom of the screen (as shown below in Figure 4). The **Print Current View** button prints the data displayed within the scroll box. The **Print Entire Range** function prints data within the date range that you selected on the main screen.

**Note** These buttons are not available on the Peaks and Statistics reports.

Figure 4: Peak Day Report (tabular view)

Peak Day					
Mon Feb 11 2002 00:15	48.72	50.40	52.92	50.40	
Mon Feb 11 2002 01:15	51.24	51.24	50.40	49.56	
Mon Feb 11 2002 02:15	52.08	50.40	50.40	50.40	
Mon Feb 11 2002 03:15	49.56	52.08	50.40	48.72	
Mon Feb 11 2002 04:15	51.24	48.72	50.40	48.72	
Mon Feb 11 2002 05:15	48.72	49.56	48.72	50.40	
Mon Feb 11 2002 06:15	47.88	53.76	52.08	49.56	
Mon Feb 11 2002 07:15	50.40	53.76	52.92	51.24	
Mon Feb 11 2002 08:15	52.08	49.56	50.40	47.88	
Mon Feb 11 2002 09:15	47.88	51.24	47.04	53.76	
Mon Feb 11 2002 10:15	47.88	53.76	52.08	52.92	
Mon Feb 11 2002 11:15	50.40	49.56	50.40	48.72	
Mon Feb 11 2002 12:15	48.72	50.40	50.40	48.72	
Mon Feb 11 2002 13:15	52.92	53.76	48.72	50.40	
Mon Feb 11 2002 14:15	50.40	51.24	53.76	48.72	
Mon Feb 11 2002 15:15	51.24	47.88	51.24	53.76	

Print Current View button

Print Entire Range button

## View Help

The **View Help** button is used to display the MV-WEB online Help system. The Help system has a two-paneled view with the main headings and topics in the left pane. The right pane displays the information of the topic selected in the left pane (as shown in Figure 5 below). Use the forward and backward arrows in the right pane to browse topics by sequence.

Figure 5: MV-WEB online Help Screen

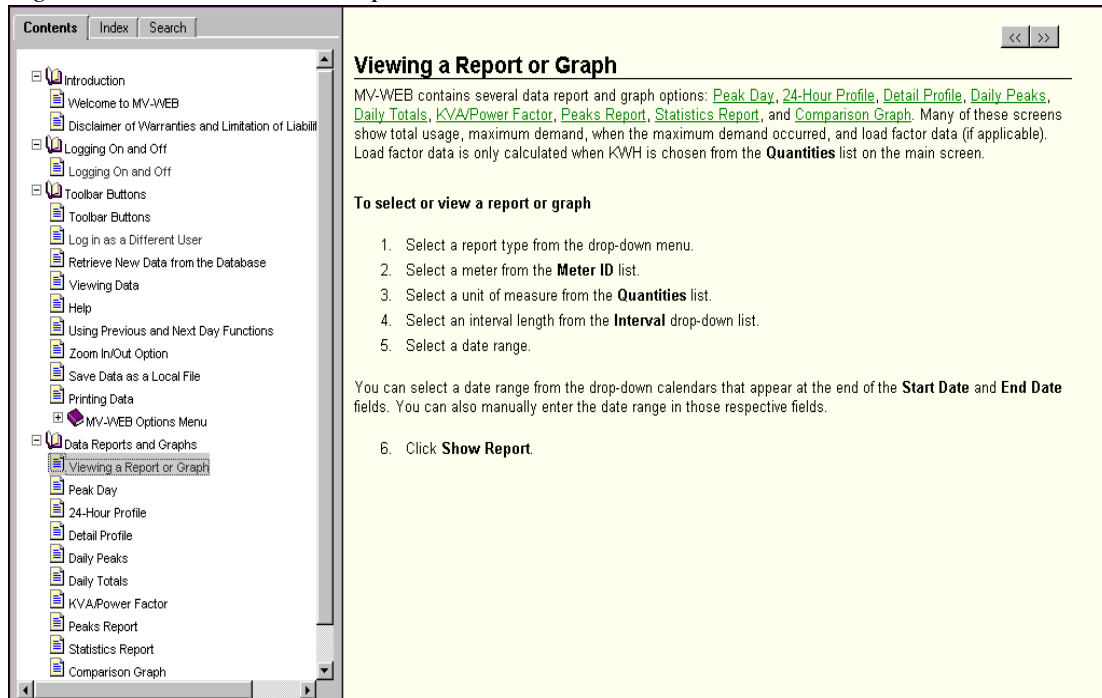


Table 4: Online Help Screen Features

Feature	Description
Contents Tab	Displays the help system’s contents. The books in the MV-WEB online Help correspond to the chapters in the <i>MV-WEB User Guide</i> .
Index Tab	An alphabetized list of subjects discussed in the MV-WEB online Help. You can either type all or part of the word you are searching for and scroll through the list of topics. For example, to find information about “Viewing a Report”, select the Index tab and type “View”. A list of topics that contain all or part of the word “View” are displayed. Select “Viewing a Report” to display instructions.
Search Tab	This tab is used to search for words or phrases contained in the text of Help topics. When performing a search, type a keyword in the field and press <b>Enter</b> . The the results of your search are displayed. Click the preferred topic for display in the right pane.  <b>Note</b> If viewing MV-WEB in Netscape, type the keyword in the field and click the <b>Find</b> button to display your search results. To show a topic in the right pane, select the preferred topic and click <b>Display</b> .





## ***Chapter 3***

### ***Viewing Reports***

This chapter covers the steps necessary to view MV-WEB reports and graphs and explains the data contained within each.

In this chapter:

- Selecting Data for Reports or Graphs
- Understanding Data Reports and Graphs

## Selecting Data for Reports or Graphs

After logging on to MV-WEB, the main screen (Figure 6) appears. From this screen, select the meter ID (service point), quantity, date range, interval, and report type you want to view.

### To Select and View a Report or Graph

1. On the main screen, select a meter ID from the Service Point list.

**Note** Once a meter is selected, the channels for that meter are displayed in the Details of Selected Service Point list.

2. Select a channel from the Details of Selected Service Point list.

**Note** The items in the Quantities list also include the account number or serial number of the service point.

3. Select a date range.

**Tip** You can select a date range from the drop-down calendars that appear at the end of the Start Date and End Date fields. You can also manually enter the date range in those respective fields.

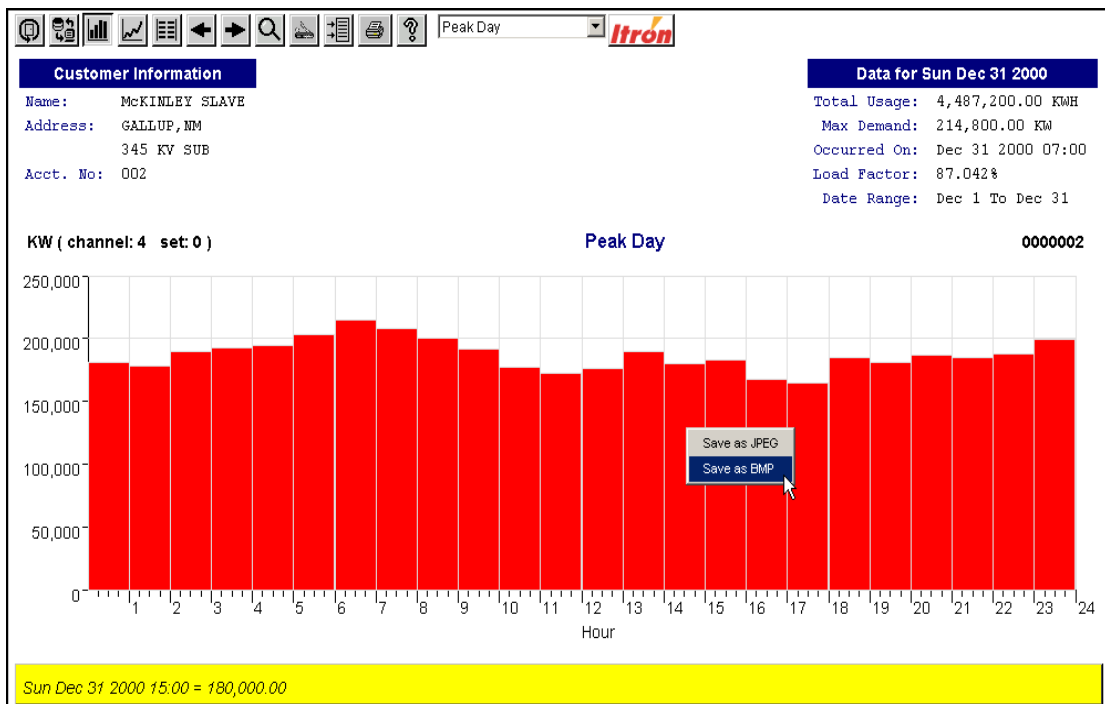
4. Select an interval length from the Interval drop-down list.

5. Click **Show Report**.

### Saving a Graph as a Bitmap or JPEG File

Once a graph is generated you can save it as a bitmap (.bmp) or JPEG (.jpg) file. Right-click the displayed graph and select .jpg or .bmp from the shortcut menu (as displayed in the figure below). A standard windows dialog box appears where you can select the location and enter the filename of the saved graphic.

Figure 6: Peak Day with Shortcut Menu



## Understanding Data Reports and Graphs

MV-WEB contains the following report and graph options:

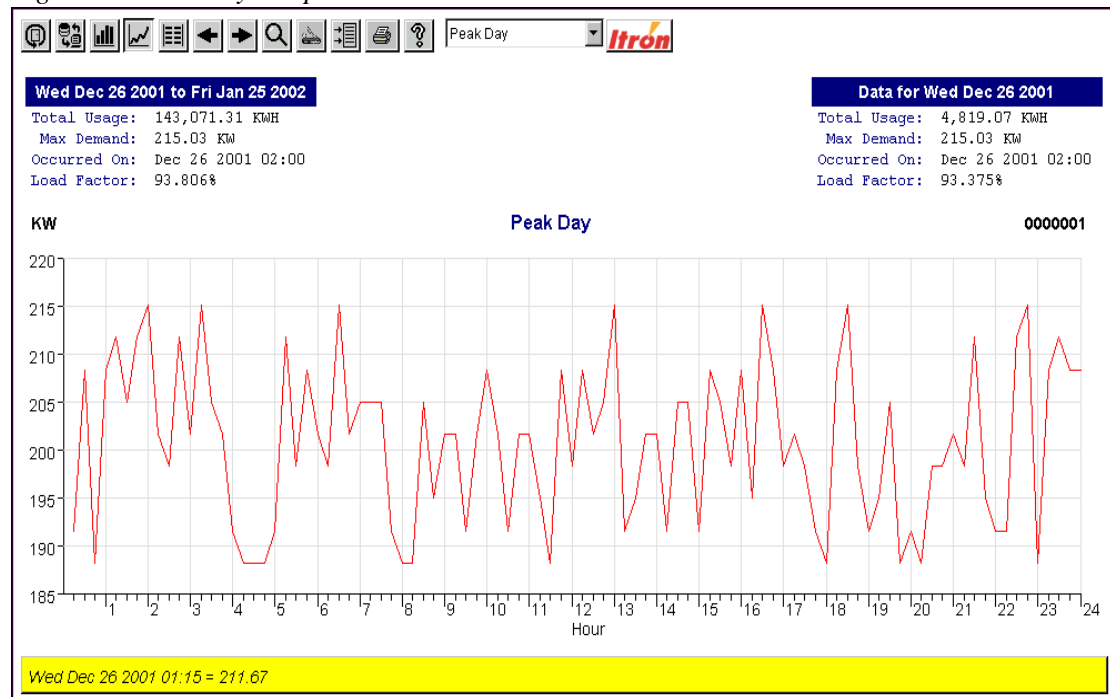
- Peak Day
- 24-Hour Profile
- Detail Profile
- Daily Peaks
- Daily Totals
- KVA/Power Factor
- Peaks Report
- Statistics Report
- Comparison Graph
- Load Duration Graph

Many of these reports and graphs show total usage, maximum demand, when the maximum demand occurred, and load factor data. Load factor data is calculated only when the kWh is selected from the Quantities list on the main screen. The following pages discuss each report/graph and the data contained within each.

### Peak Day

The Peak Day graph, shown below, displays demand values for the day with the highest demand within a selected time period.

Figure 7: Peak Day Graph



The left column displays the customer name, address, account number, and meter number. The right column displays total usage, maximum demand, the date maximum demand occurred, and load factor data (if applicable) for the day within the range that had the highest demand.

**Note** Depending on the parameters set by the System Administrator, the account number and meter number may not appear on the graph.

If you click either the **View Previous Day** or **View Next Day** buttons, the data defaults to the 24-Hour Profile option and you can view data for each day within the date range.

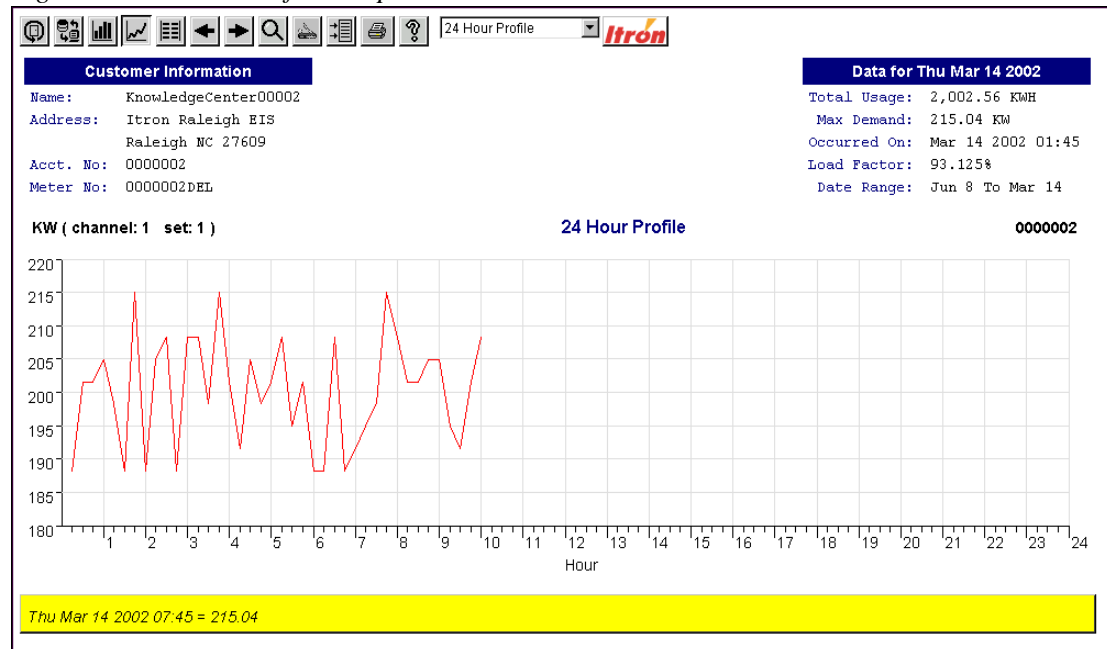
Depending on your selection from the toolbar, a table or graph (line or bar) appears. As you move the cursor over the graph, the exact figures, dates, and times for each point on the graph appear at the bottom left corner of the screen. You can select between the graph and table option buttons at any time.

**Note** The **View Data as a Table** button is not available to all users. The button is dimmed when unavailable and an error message appears when you click it. See your System Administrator for further assistance.

## 24-Hour Profile Graph

This graph displays interval demand values for a selected 24-hour period.

Figure 8: 24-Hour Profile Graph



The left column displays the customer name, address, account number, and meter number. The right column displays total usage, maximum demand, the date maximum demand occurred, and load factor data for the end date of the date range you selected. You can view data for any day within the date range by clicking either the **View Previous Day** or **View Next Day** arrows on the toolbar. When you click either button, the data in the graph will change as well as the data displayed in the right column above the graph.

**Note** Depending on the parameters set by the System Administrator, the account number and meter number may not appear on the graph.

Depending on your selection, a table or graph (line or bar) appears. As you move the cursor over the graph, the exact figures, dates, and times for each point on the graph appear at the bottom left corner of the screen. You can select between the graph and table option buttons at any time.

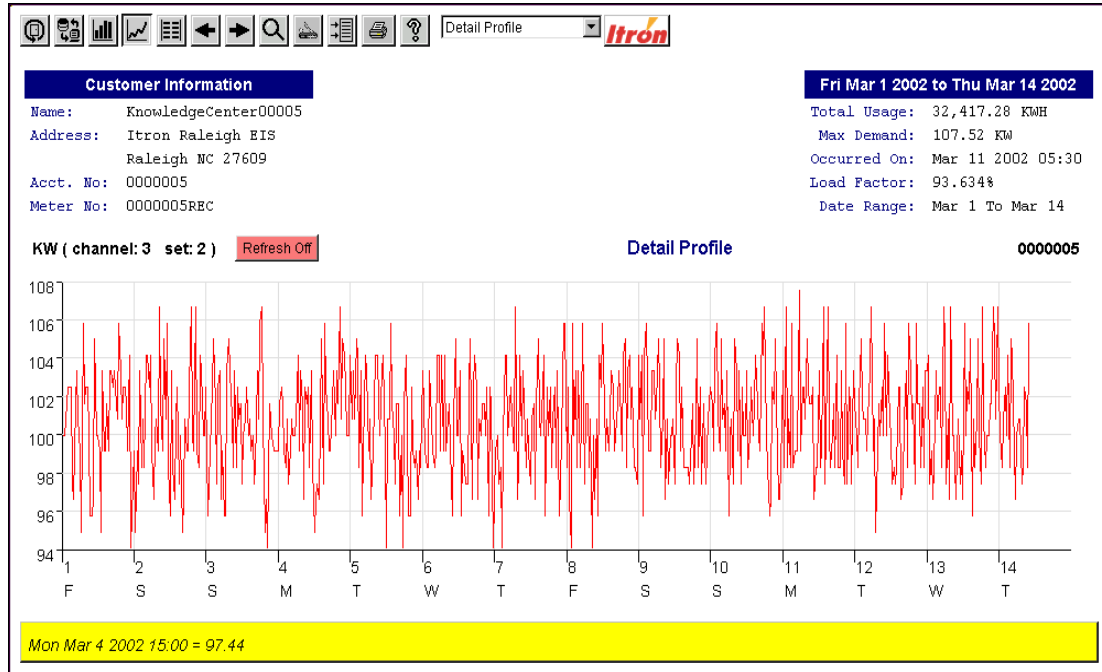
**Note** The **View Data as a Table** button is not available to all users. The button is dimmed when unavailable and an error message appears when you click it. See your System Administrator for further assistance.



## Detail Profile Graph

The Detail Profile graph displays interval demand values for a selected time period.

Figure 9: Detail Profile Graph



The left column displays the customer name, address, account number, and meter number. The right column displays total usage data, maximum demand, the date maximum demand occurred, and load factor data (if applicable) for the entire date range.

**Note** Depending on the parameters set by the System Administrator, the account number and meter number may not appear on the graph.

Depending on your choice from the toolbar, a table or graph (line or bar) appears. The graph view shows every interval value that occurred in the selected date range. Interval values can range from 5 to 60 minutes, depending on how usage data is read and stored from the meter. If you move the cursor over the graph, the exact figures, dates, and times for each point on the graph appear at the bottom left corner of the screen.

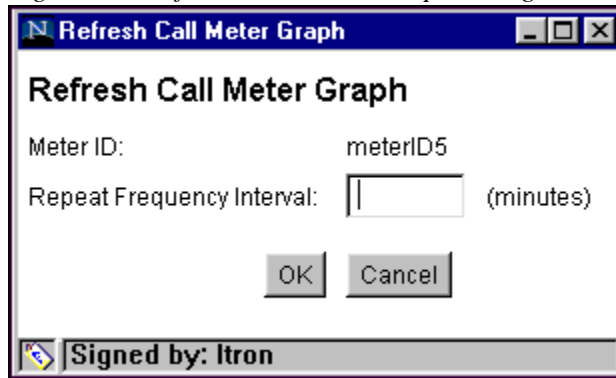
**Note** The **View Data as a Table** button is not available to all users. The button is dimmed when unavailable and an error message appears when you click it. See your System Administrator for further assistance.

## Refreshing Data

The **Refresh Off/On** button is used to refresh the meter data displayed on the Detail Profile Graph. The refresh function is only available on this graph. When the Detail Profile Graph opens, the red **Refresh Off** button is displayed. To turn on the Refresh function, click the **Refresh Off** button and the Refresh Channel Graph dialog box opens as shown Figure 10 on page 20.

**Note** The **Refresh** button is only available if you have access to the meter interrogation functionality. This is set by your System Administrator.

Figure 10: Refresh Call Meter Graph dialog box



### To Initiate the Refresh Graph Function

1. In the Repeat Frequency Interval field, enter how often you want the graph refreshed. For example type 5 to refresh the graph every 5 minutes.  
**Note** Enter an interval that is equal to or greater than the meter’s interval as shown on the main screen.
2. Click **OK**. The red **Refresh Off** button changes to the green **Refresh On** button.

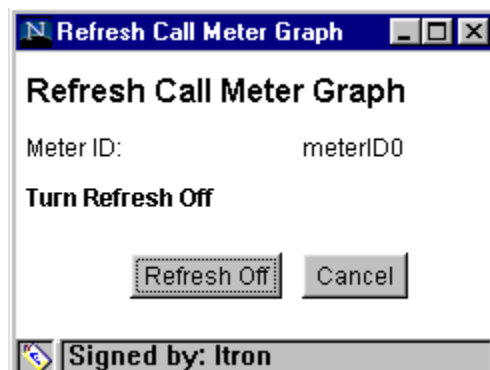
### Canceling the Refresh Function

The following steps describe how to cancel the Refresh function.

### To Cancel the Refresh Function

1. From the Detail Profile Graph screen, click the **Refresh On** button. The Refresh Call Meter Graph dialog box opens as shown in Figure 11 below.
2. Click **Refresh Off**. The **Refresh On** button on the Detail Profile Graph changes to **Refresh Off**.  
**Tip** If you click the **Cancel** button on the Refresh Call Meter Graph dialog box, the action is canceled and the **Refresh On** button remains on the Detail Profile Graph screen.

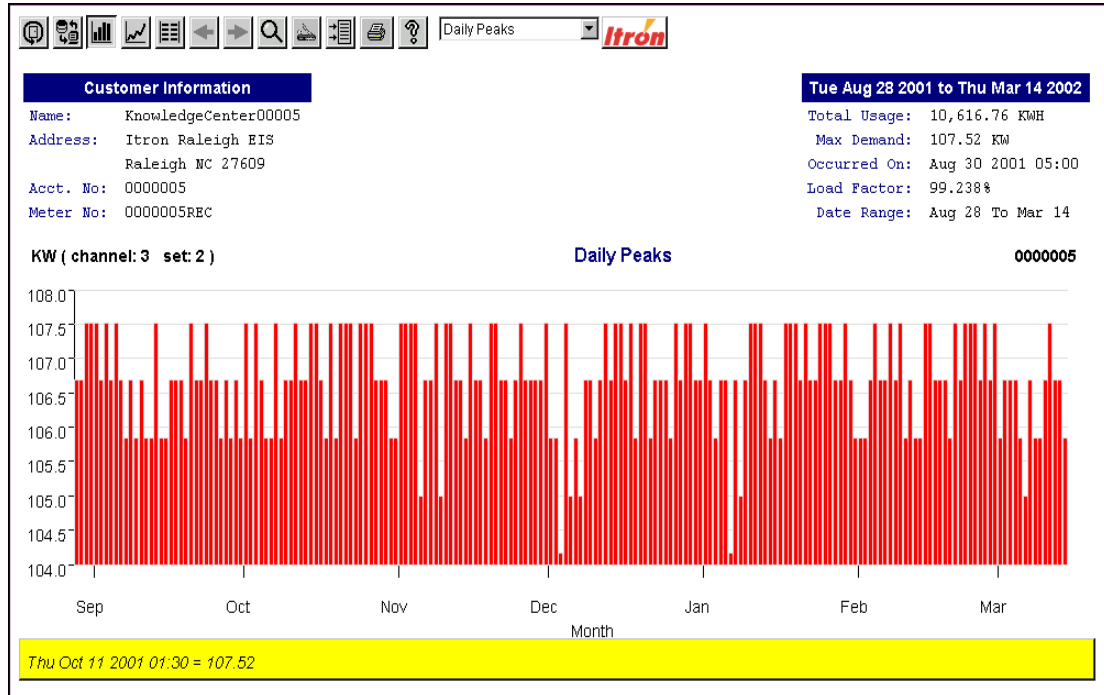
Figure 11: Refresh Call Meter Graph dialog box (Turn Refresh Off)



## Daily Peaks

The Daily Peaks graph, shown below, shows the peak demand times and amounts for every day within a selected date range.

Figure 12: Daily Peaks Graph



The left column displays the customer name, address, account number, and meter number. The right column displays total usage, maximum demand, the date maximum demand occurred, and the load factor data for the selected date range.

**Note** Depending on the parameters set by the System Administrator, the account number and meter number may not appear on the graph.

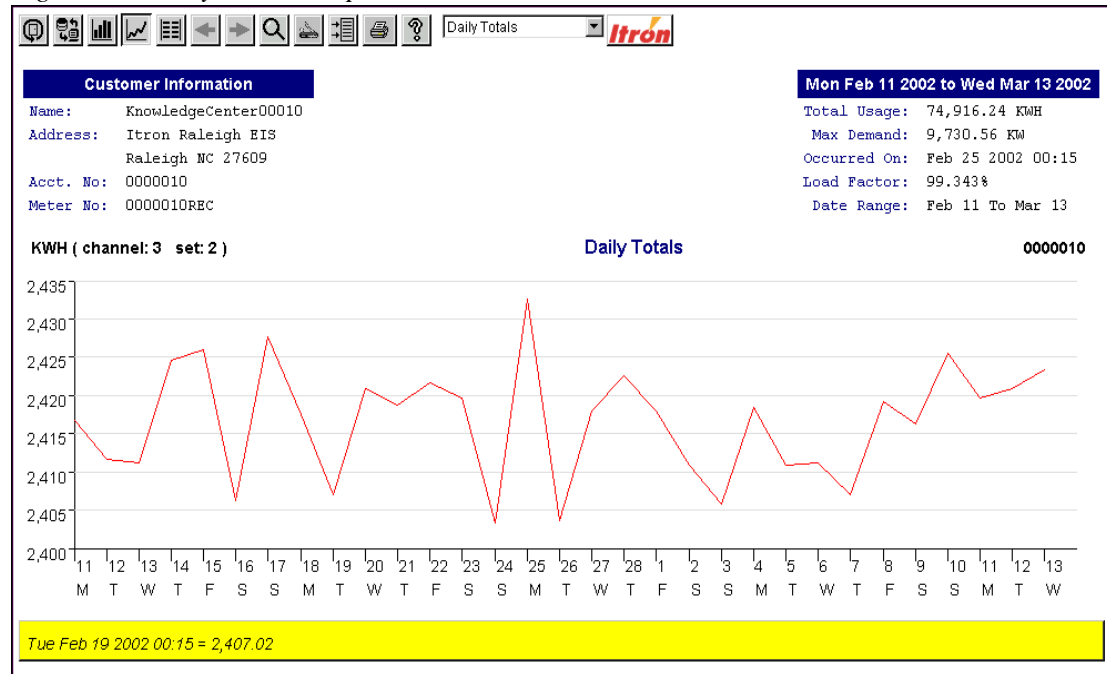
Depending on your choice from the toolbar, a table or graph (line or bar) appears. The graph shows the peak usage for each day within the selected range. If you move the cursor over the graph, the exact figures, dates, and times for each point on the graph appear at the bottom left corner of the screen. You can also select between the graph and table option buttons at any time.

**Note** The **View Data as a Table** button is not available to all users. The button is dimmed when unavailable and an error message appears when you click it. See your System Administrator for further assistance.

## Daily Totals

The Daily Totals report, displayed below, shows usage totals for every day within a selected date range.

Figure 13: Daily Totals Graph



The left column displays the customer name, address, account number, and meter number. The right column displays total usage, maximum demand, the date maximum demand occurred, and load factor data (if applicable) for the selected date range.

**Note** Depending on the parameters set by the System Administrator, the account number and meter number may not appear on the graph.

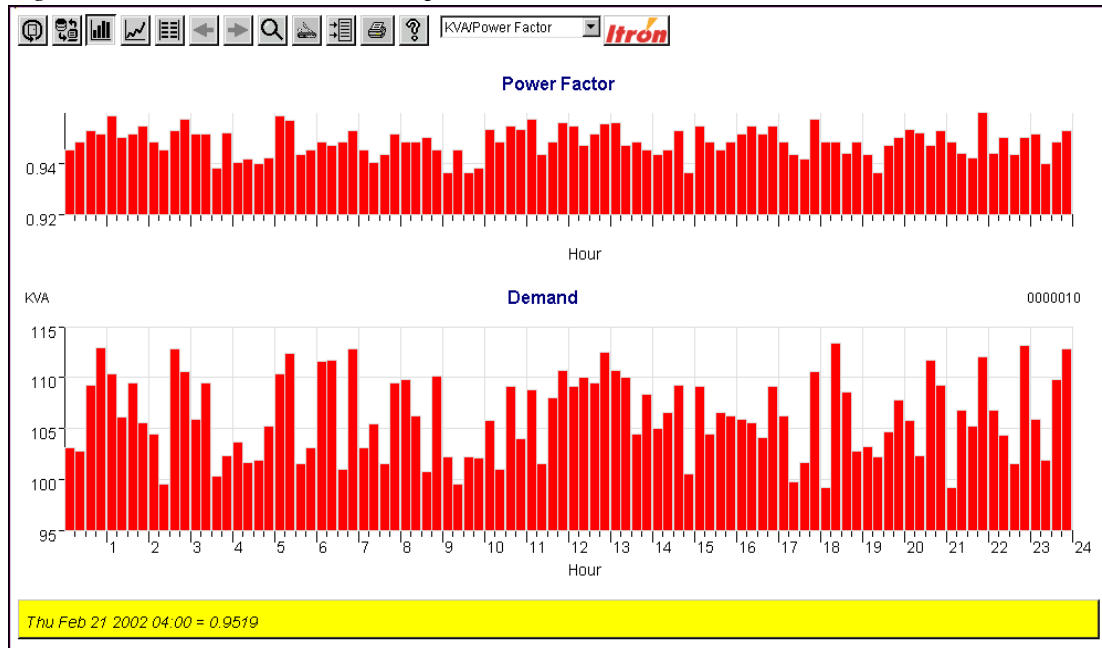
Depending on your choice from the toolbar, a table or graph (line or bar) appears. The graph above in Figure 13 shows the total number for each day's usage (as opposed to the Detail Profile report, which shows every reading). If you move the cursor over the graph, the exact figures, dates, and times for each point on the graph appear at the bottom left corner of the screen. You can also select between the graph and table option buttons at any time.

**Note** The **View Data as a Table** button is not available to all users. The button is dimmed when unavailable and an error message appears when you click it. See your System Administrator for further assistance.

## KVA/Power Factor

The KVA/Power Factor graph, displayed below, shows information on real and apparent power for a selected time period.

Figure 14: KVA/Power Factor Graph



This report displays either two graphs or one data table, depending on your choice from the toolbar. The Power Factor graph shows the relationship between real and total power during the selected date range.

The Demand graph shows the changes in real power caused by a non-ideal system loading during the selected date range. If you move the cursor over the graphs, the exact figures, dates, and times for each point on the graph appear at the bottom left corner of the screen. You can also select between the graph and table option buttons at any time.

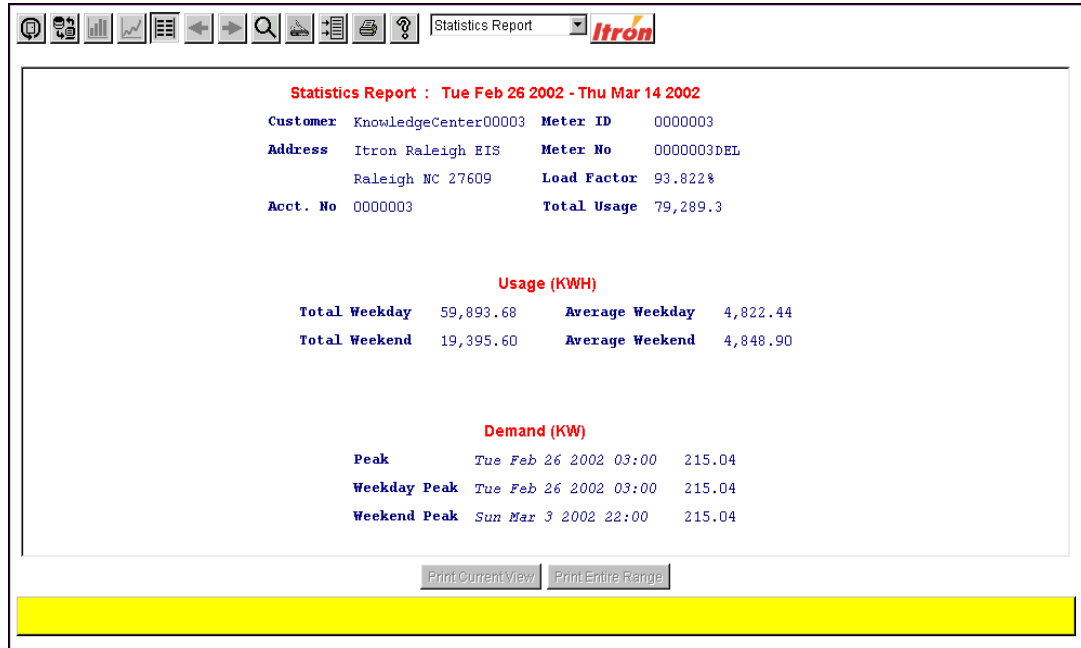
**Note** The **View Data as a Table** button is not available to all users. The button is dimmed when unavailable and an error message appears when you click it. See your System Administrator for further assistance.



## Statistics Report

The Statistics Report, as shown below, shows usage and demand data broken down by weekday and weekend for a selected date range.

Figure 16: Statistics Report Example

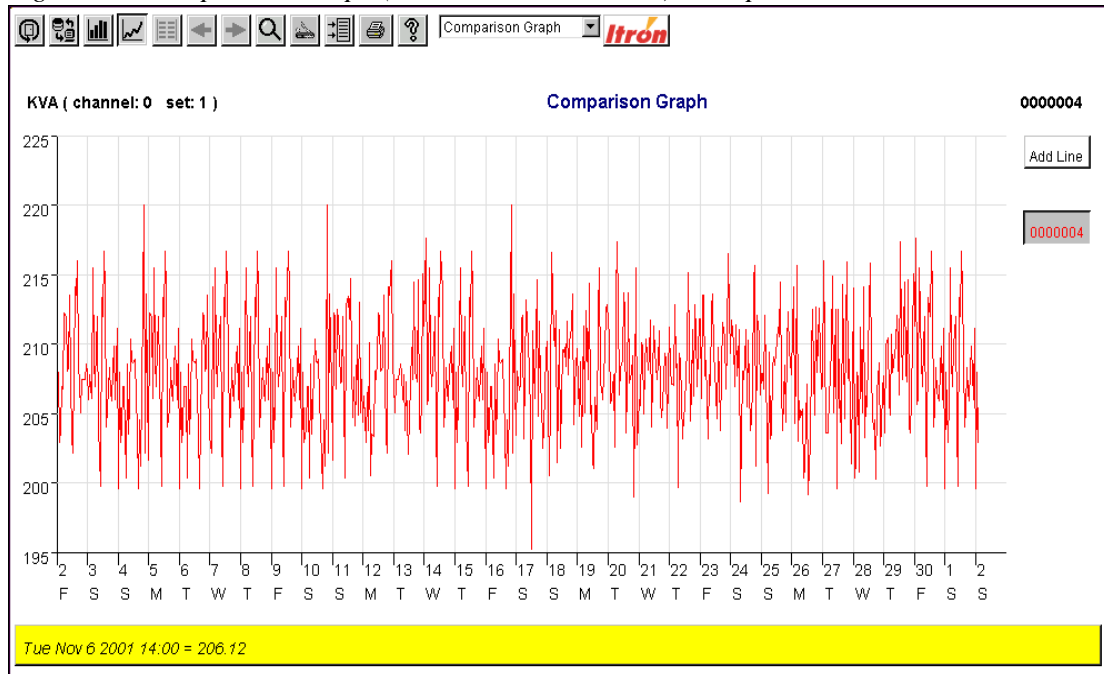


The Statistics Report displays the customer name, address, account number, meter ID, meter number, total usage for the date range selected, the selected date range, and the load factor data for the selected date range. In addition, this report displays average daily usage for weekdays and weekends. The Statistics Report cannot be viewed as a graph.

## Comparison Graph

The Comparison Graph is used to compare information about different quantities or meters on one graph. The Comparison Graph cannot be viewed as a table.

Figure 17: Comparison Graph (with one data selection) Example



After the first graph appears, you can select a second meter or quantity for comparison.

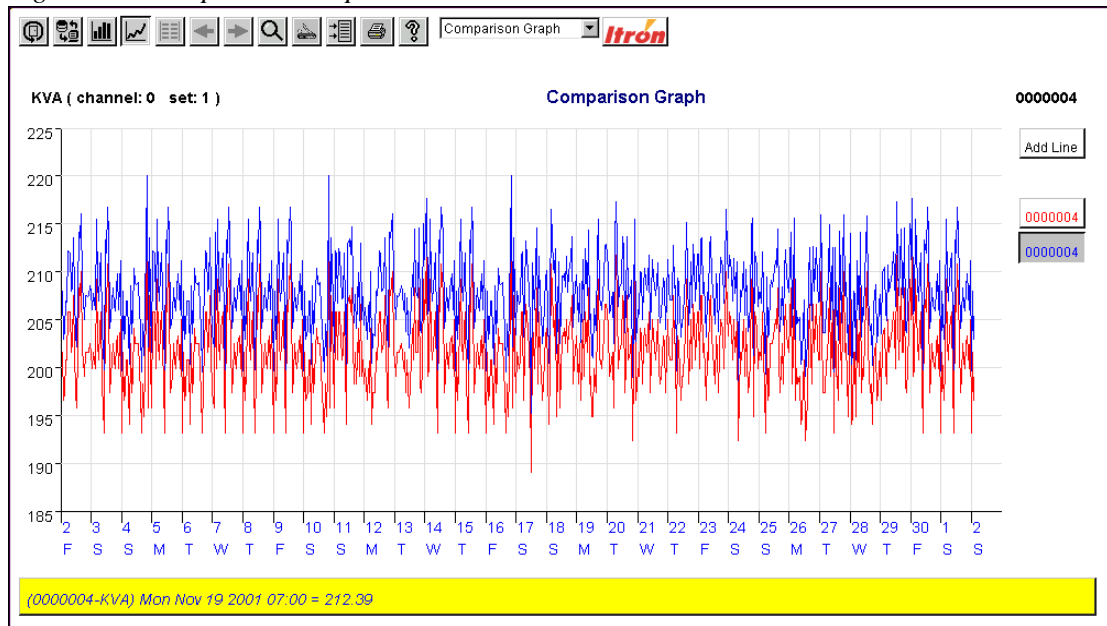
### To Select a Second Meter or Quantity for Comparison

1. Click **Add Line**. This displays the main screen.
2. Select another meter or quantity.
3. Click **Show Report**.

The graph displays the second information request as a blue line, as shown in Figure 18 on page 27. Notice that the vertical scale changes according to type and quantity of data.



Figure 18: Comparison Graph w/ Two Data Selections



You can continue to add lines to the graph in this manner, up to five lines. Each line that is added appears as a different color. The line colors are:

- Red = 1st line
- Blue = 2nd line
- Green = 3rd line
- Orange = 4th line
- Teal = 5th line

In addition, each line has a corresponding button on the right side of the screen. When you click one of these buttons and move your cursor across the graph, the date, time, and exact number for each point on the selected graph line appear in the lower left corner of the screen.

## Meter Interrogation Schedule Report

The Meter Interrogation Schedule Report displays the interrogation schedule of a selected meter point (meter ID). MV-WEB retrieves the meter interrogation schedule data from the utility’s MV-90 system and lists each scheduled interrogation in the generated report. This report can only be viewed as a table.

**Note** The Meter Interrogation Schedule Report is not available to all users. If the user does not have meter interrogation access, the report is not available as a report option.

Figure 19: Meter Interrogation Schedule Report Example

Time Due	Next Time Due	Repeat Frequency	Stop Frequency Time	Status	Reason
3/18/2002 16:45	3/18/2002 17:15	30	3/18/2002 16:45	IN	Pending/Active
3/19/2002 00:15	3/19/2002 00:15	0	0/0/0 00:00	IN	Pending/Active
3/19/2002 03:15	3/19/2002 04:15	60	3/19/2002 08:00	IN	Pending/Active

When the Interrogation report is generated, the results are sorted in the following order:

- Time Due
- Next Time Due
- Repeat Frequency
- Stop Frequency Time
- Status
- Reason

See Table 5 below for a description of each data type.

Table 5: Meter Interrogation Schedule Report Descriptions

Data Type	Description
Customer ID	The customer’s alphanumeric identifier.
Meter ID	The meter’s numeric identifier.

Table 5: Meter Interrogation Schedule Report Descriptions continued ...

Data Type	Description
Time Due	<p>Date and time of the meter's interrogation.</p> <p><b>Note</b> Date values will be formatted based on the locale of the browser selected at the MV-WEB logon screen. For example, the MM/DD/YYYY format is used for U.S. customers and the DD/MM/YYYY format is used for Canadian customers.</p>
Next Time Due	<p>The following (next) date and time of the meter's interrogation.</p> <p><b>Note</b> Date values will be formatted based on the locale of the browser selected at the MV-WEB logon screen. For example, the MM/DD/YYYY format is used for U.S. customers and the DD/MM/YYYY format is used for Canadian customers.</p>
Repeat Frequency	<p>How often (in minutes) an interrogation is scheduled for the meter. For example 15 minutes.</p>
Stop Frequency Time	<p>The time the interrogation is scheduled to end.</p> <p><b>Note</b> Time displayed is one interval prior to actual stop time. For example, if the <b>Time Due</b> is 10:00, the <b>Repeat Frequency</b> is 15 minutes and the meter has a <b>Maximum Frequency Call Duration</b> of 2 hours; the last call will take place at 12:00 but the <b>Stop Frequency Time</b> displays 11:45.</p>
Status	<p>Status of the meter's interrogation. Valid options are <b>In Process</b> and <b>Pending</b>.</p>
Reason	<p>Valid options are <b>Pending/Active</b> and <b>Failed</b>.</p>

## Meter Map Report

The Meter Map Report details the associations between a service point channel and a Meter ID channel as setup within MV-90EE. This report is viewed as a table.

**Note** The Meter Map Report is available for MV-90EE users only. This report option is not visible to MV-90 users.

Figure 20: Meter Map Report Example

The screenshot shows a web application window titled "Meter Map Report" with the Itron logo. The report content is as follows:

**Meter Map Report**  
**Customer:** NANTICOKE GS RSS1A  
**Service Point:** 1000000600

Account Number	Service Point ID	Service Point Channel	Meter Point ID	Meter Point Channel	Channel UOM
1000000600	1000000600	1	J077593	1	KMH
1000000600	1000000600	2	J077593	2	KVARH
1000000600	1000000600	3	J077593	3	KMH
1000000600	1000000600	4	J077593	4	KVARH
1000000600	1000000600	5	J077593	5	V2H
1000000600	1000000600	6	J077593	6	V2H
1000000600	1000000600	7	J077593	7	V2H

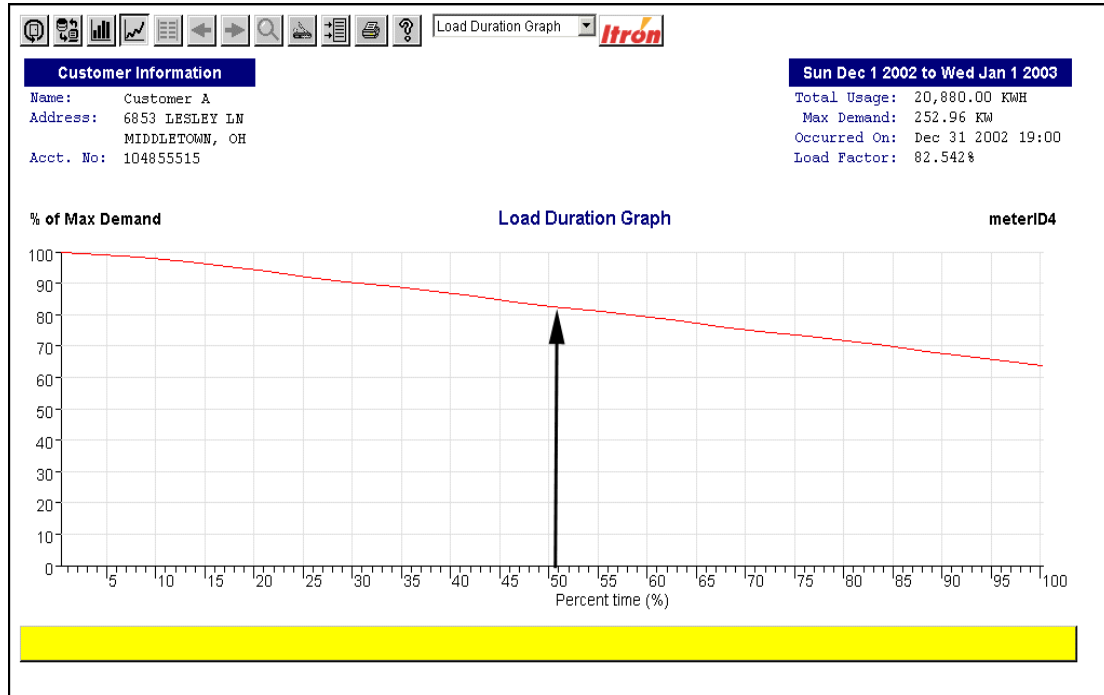
When the Meter Map Report is generated, the results are sorted in the following order:

- Account Number
- Service Point ID
- Service Point Channel
- Meter Point ID
- Meter Point Channel
- Channel UOM (Unit of Measure)

## Load Duration Graph

The Load Duration Graph displays the percentage of time during which the value of the load is equaled or exceeded.

Figure 21: Load Duration Graph



The left column displays the customer name, address, account number, and meter number. The right column displays total usage, maximum demand, the date maximum demand occurred, and load factor data (if applicable) for the selected date range.

In the example above (as indicated by the arrow), the Load Duration curve shows that 50 percent of the time the value of the load equaled or exceeded 80 KW for the time range selected (in this case December 1, 2002 through January 1, 2003).





## **Chapter 4**

### ***MV-WEB Menu Options***

This chapter covers the various functions associated with the MV-WEB Options Menu button on the MV-WEB toolbar.

In this chapter:

- Meter Aggregation
- Call Meter

## Meter Aggregation

You can access the meter aggregation functionality by clicking the MV-WEB Options Menu button (see “Accessing the MV-WEB Options Menu” on page 11 of Chapter 2, “User Interface”). With meter aggregation, you can define an aggregate meter ID and select multiple channels of similar data types to calculate the total. Like other meters in MV-WEB, aggregate meters can be viewed as a report or graph.

**Note** Aggregate meter definitions and data are not saved when you exit MV-WEB.

Figure 22: Meter Aggregation dialog box

Table 6: Meter Aggregation Screen Field and Button Descriptions

Field/Button	Description
Create	Click this button to create a aggregate meter ID.
Delete	Click this button to delete an aggregate meter ID from the Aggregate Meter ID field.
Aggregate Meter ID	Drop-down list that displays available aggregate meter IDs.
Channel Selection	Drop-down lists the displays available channels or units of measure. For example kWh, kVAH, or kVARH.
Available Meters	List of available meters associated with the aggregate meter ID selected in the Aggregate Meter ID field.
Channels	Displays a list of channels associated with a meter displayed in the Available Meters list.
Available Dates	Displays a list of date ranges associated with a meter that is displayed in the Available Meters list.



Table 6: Meter Aggregation Screen Field and Button Descriptions continued ...

Field/Button	Description
Add Contributor	Click this button to add a selected meter to the Existing Contributors list.
Existing Contributors	Displays a list of meters associated with the aggregate meter.
Delete Contributor	Removes a meter from the Existing Contributors list.
Save Aggregate Meter	Saves the newly created aggregate meter and it is displayed in the Meter ID list on the main screen (see “Meter ID” in Table 2 on page 7 of Chapter 2, “User Interface”).
Close	Closes the Meter Aggregation screen.

### To Create an Aggregate Meter

1. From the MV-WEB main screen, click the **MV-WEB Options Menu** button.
2. From the Select Option dialog box, click **Meter Aggregation**.
3. From the Create an Aggregate Meter dialog box, enter the aggregate meter’s ID.
4. Click **Create**. The Meter Aggregation dialog box appears as shown in Figure 22 on page 34.
5. From the Channel Selection drop-down list, select a quantity to be aggregated (For example, kWH, kVARH, or kVAH).

**Note** When you select a channel, the Available Meters, Channels, and Available Dates lists are populated.

6. From the Available Meters list, select a meter.
7. Select a channel type from the Channels list. Only one channel can be selected at a time from that list.
8. Click **Add Contributor**.  
The contributor is moved to the Existing Contributors list. This list adds data together for selected channels.
9. Click **Save Aggregate Meter**.  
The system prompts you to confirm the Save action. The new aggregate meter is displayed in the Meter ID list on the main screen and can be viewed as a report or graph.
10. Click **Close** to return to the main screen.

**Note** If you try to aggregate meters with different interval lengths, MV-WEB will increase the lesser interval length to equal the greater interval length and then complete the aggregation process. For example, combining a contributor with a 30-minute interval length and a contributor with a 20-minute interval length results in an aggregate meter with a 60-minute interval length.

### Adding Additional Contributors

To add more Contributors to an aggregate meter, repeat steps 5-8.

### Deleting a Contributor

To delete a Contributor from the Existing Contributors list, select the unwanted Contributor and click **Delete Contributor**.

## Call Meter

Call Meter or meter interrogation is another feature available through the MV-WEB Options Menu button (see “Accessing the MV-WEB Options Menu” on page 11 of Chapter 2, “User Interface”). The Call Meter option is the function through which meter interrogation is accomplished. The Call Meter is used to schedule a date and time for MV-90 to interrogate a selected meter. MV-WEB submits a request to MV-90 to interrogate or call the meter based on the values you enter on the Call Meter screen (as shown in Figure 23 below). The time, date, frequency, and duration that you can call a meter is based on your users settings as defined by the System Administrator. If you enter values that violate these settings, a error message appears.

Figure 23: Call Meter Screen

The screenshot shows a window titled "Call Meter" with the following fields and controls:

- Call Meter:** A dropdown menu with the value "0000003".
- Company Name:** A text field containing "KnowledgeCenter00003".
- Available time range:** A text field displaying "00:01 To 24:00".
- Month:** A dropdown menu with "October" selected.
- Day:** A dropdown menu with "10 - Thursday" selected.
- Frequency Calling:** A checked checkbox.
- Start Time: (24:MM):** Two dropdown menus showing "23" and "00".
- Stop Time: (24:MM):** Two dropdown menus showing "24" and "00".
- Interval:** A text field containing "30".
- Duration:** A text field displaying "12 Hour".
- Buttons:** "OK" and "Cancel" buttons at the bottom.

Annotations on the right side of the screenshot provide additional context:

- The **Available Time Range** is set in Military time by the System Administrator.
- The **Month** and **Day** drop-down lists allow you to set the month and day the MV-90 meter is interrogated. The values available in these fields is set by the System Administrator in the MV-WEB Administration Tool.
- The **Start Time** and **Stop Time** drop-down fields list the hours and minutes you can choose to set the meter interrogation. The values in these fields are based on the selected day's available time range.
- The frequency call **Duration** is displayed on this screen. Duration is the time set by the MV-WEB administrator for which a frequency call can be made.

In addition, this feature supports multiple time zones. The System Administrator sets the time range for the interrogation through the MV-WEB Administration tool and that range is displayed on your MV-WEB application are based on the clock settings of your PC. In addition, MV-WEB's time range is automatically adjusted for Daylight Savings Time (DST) in the time zone where the system is used.

### Example 1 – Business Hours Time Range

A MV-90 system based in Spokane, WA (a PST time zone), has a time range set to 08:01 – 17:00 with the available calling days set to Monday – Friday. The MV-WEB user located in Raleigh (an EST time zone and 3 hours ahead of Spokane) would see the following allowable days and time ranges:

MV-90 System in Spokane, WA (PST)		MV-WEB System in Raleigh, NC (EST)	
Day	Time	Day	Time
Monday	08:01–17:00	Monday	11:01 – 20:00
Tuesday	08:01 – 17:00	Tuesday	11:01 – 20:00
Wednesday	08:01 – 17:00	Wednesday	11:01 – 20:00
Thursday	08:01 – 17:00	Thursday	11:01 – 20:00
Friday	08:01 – 17:00	Friday	11:01 – 20:00

### Example 2 – 24 Hour Time Range

A MV-90 system based in Spokane, WA (a PST time zone), has a time range set to 00:01 – 24:00 with the available calling days set to Tuesday and Thursday. The MV-WEB user located in Raleigh (an EST time zone and 3 hours ahead of Spokane) would see the following allowable days and time ranges:

MV-90 System in Spokane, WA (PST)		MV-WEB System in Raleigh, NC (EST)	
Day	Time	Day	Time
Tuesday	00:01– 24:00	Tuesday	03:01 – 24:00
		Wednesday	00:01 – 03:00
Thursday	00:01 – 24:00	Thursday	03:01 – 24:00
		Friday	00:01 – 03:00

**Note** Because of the nature of time ranges overlapping days when adjusted from one time zone to the next, there may be multiple time ranges per day available to the MV-WEB user after such adjustments.

Table 7: Call Meter Screen Field Descriptions

Field/Option/Button	Description
Call Meter	Drop-down list that displays meters available for interrogation.
Company Name	Displays the company who is associated with the selected meter.
Available Time Range	Displays the time range that a call can be made to the selected meter. The values available in this field are set by the System Administrator. In addition, the values are based on the MV-90 system time and adjusted to the time on you PC.
Months	This drop-down field lists the available months an operator can select to set the meter interrogation. The values available in this field are set by the System Administrator. For example, if the administrator sets MV-WEB so that it can call a meter 3 months into the future with September as its starting month; then values available in this field will be September, October, November, and December.
Days	<p>This drop-down field lists the available days an operator can select to set the meter interrogation. The values available in this field are set by the System Administrator. For example, if the administrator set Monday as an allowable day for the operator and the operator selected October in the Months field; the days displayed in this field would be 7-Monday, 14-Monday, 21-Monday, and 28-Monday.</p> <p>Sometimes the MV-90 system is in a different time zone than the MV-WEB system. <i>When the MV-90 time ranges are adjusted to MV-WEB's time zone</i>, this causes the time ranges to overlap to days other than what was specified. Those days then become available in this field.</p>
Start Time (24:MM)	This field lists the hour and minutes available to start the meter interrogation. The values in this field are based on the selected day's available time range.
Stop Time (24:MM)	<p>This field lists the times available to stop the meter interrogation. The values in this field are based on the selected day's available time range. The stop time is also restricted to be after the <b>Start Time</b> and within the <b>Duration</b> value. They are also automatic adjusted based on selection of <b>Start Time</b> and <b>Duration</b>.</p> <p><b>For example:</b></p> <ul style="list-style-type: none"> <li>• Available time range: 02:00-12:00</li> <li>• Duration: 3 hours</li> <li>• User selects Start Time: 02:00</li> </ul> <p><b>Note</b> End time is automatically adjusted and limited to 05:00</p> <p><b>Note</b> The MV-WEB user may select an end time within these limitations.</p>
Start Date	Select a date from the drop-down list to call a meter. Meter interrogations are only done in a single day.

Table 7: Call Meter Screen Field Descriptions continued ...

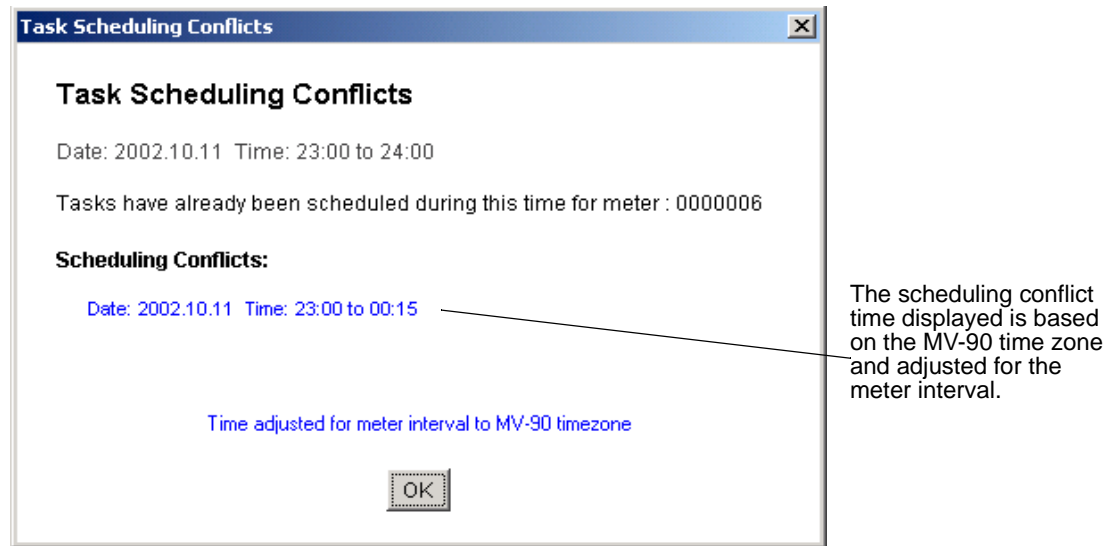
Field/Option/Button	Description
Frequency Calling <i>This option is displayed only if permission was granted in the MV-WEB Administration Tool</i>	If this box is selected, you can control the frequency in which MV-WEB calls the meter. Clear this box if you only want to call the meter once.
Interval	Displays how often the meter will be called. For example every 90 minutes. This field defaults to the interval set in the MV-WEB Administration Tool.
Duration	Displays how long the meter will be called. The value displayed here, limits how long a meter is interrogated.  For example, the available time range for a select meter is 02:00-12:00 with a 3 hour duration. If you 02:00 for the <b>Start Time</b> , the <b>Stop Time</b> is adjusted to 05:00.

### To Call a Meter

1. Select a meter to interrogate from Call Meter drop-down list.
2. Select a **Month** and **Day** to call the meter.  
**Note** The values listed in these fields are set by the System Administrator.
3. Select the **Frequency Calling** check box to determine how often MV-WEB interrogates the meter. Clear this box if you want the meter interrogated once.  
**Note** If this option is selected, the Stop Time and Interval fields become available.  
**Important** This option is only available to users with access rights to Frequency Calling. The check box is dimmed if unavailable. Frequency Calling access is set by your System Administrator. If you don't have Frequency Calling rights, go to step 4.
4. Select the time begin calling the meter from the Start Time drop-down list.  
**Note** The times listed in this field are based on the selected day's available time range.
5. Select the time to stop calling the meter in the Stop Time field.  
**Note** The times listed in this field are based on the selected day's available time range.  
**Important** This field is tied to the Frequency Calling function. If you do not have access rights to Frequency Calling this field is unavailable (dimmed). Skip to step 7.
6. Enter how often the meter should be called (in minutes) in the Interval field.  
**Note** The meter's default interval is displayed in this field. If you change the interval value, it cannot be less than the default. If you change the value to less than the default, MV-WEB resets the value to the default.  
**Important** This field is tied to the Frequency Calling function. If you do not have access rights to Frequency calling this field is unavailable (dimmed).
7. Click **OK**.

MV-WEB checks if the meter has any scheduled tasks that may conflict with the new task. If there is a conflict, the new task is not scheduled and the Task Scheduling Conflicts screen appears (as shown below in Figure 24). The Task Scheduling Conflicts screen lists all the scheduled tasks whose dates and times conflict with the new task.

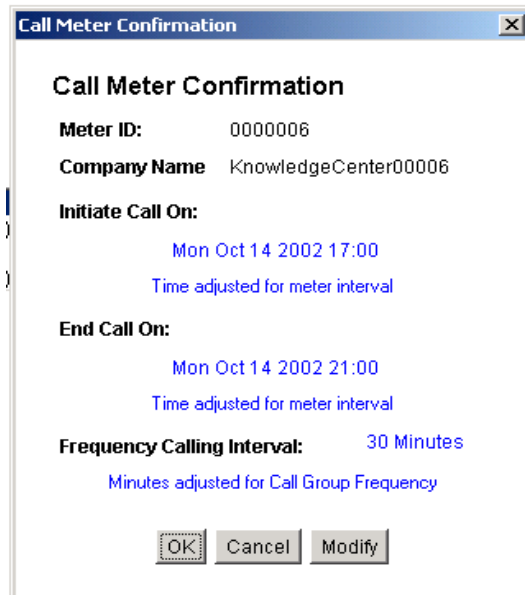
Figure 24: Task Scheduling Conflicts Screen



### Confirming Call Meter Requests

If there are no scheduling conflicts with the interrogation request, the Call Meter Confirmation screen appears as shown below in Figure 25.

Figure 25: Call Meter Confirmation Screen



The Call Meter Confirmation screen shows the meter ID, company name, and adjusted time the meter will be interrogated. If Frequency Calling was selected on the Call Meter screen, the adjusted end time and adjusted frequency calling interval are also displayed. The values for the start time and end time are adjusted for the meter interval set in MV-90. The start time you enter

on the Call Meter screen is rounded up to the next time that falls on an allowed meter interval. The end time is also rounded up to the closest meter interval and that value is subtracted from the stop time. The Frequency Calling Interval is adjusted for the call group frequency. The System Administrator sets the Call Group frequency in the MV-WEB Administration Tool. A Call Group determines how often you can pull data from a meter. Figure 26 below illustrates how the call meter start and end times are calculated.

Figure 26: Example of How MV-WEB Calculates the Call Meter Start and End Times

In this illustration, the **Start Time** entered on the Call Meter screen is 10:05. However, on the Call Meter Confirmation screen, the time has been rounded up to 10:15. This is because the meter's interval was set to 15 minutes in MV-90 so MV-WEB rounds up to the time closest to that interval.

The image shows two windows side-by-side. The left window is titled 'Call Meter' and contains the following fields: 'Call Meter' (0000007), 'Company Name' (KnowledgeCenter00007), 'Available time range: 00:01 To 24:00', 'Month: October', 'Day: 11 - Friday', a checked 'Frequency Calling' box, 'Start Time: (24:MM) 10 : 05', 'Stop Time: (24:MM) 22 : 05', 'Interval: 30', and 'Duration 12 Hour'. The right window is titled 'Call Meter Confirmation' and displays: 'Meter ID: 0000007', 'Company Name KnowledgeCenter00007', 'Initiate Call On: Fri Oct 11 2002 10:15 (Time adjusted for meter interval)', 'End Call On: Fri Oct 11 2002 22:15 (Time adjusted for meter interval)', and 'Frequency Calling Interval: 30 Minutes (Minutes adjusted for Call Group Frequency)'. Arrows point from the text above to the 'Start Time' and 'Stop Time' fields in both windows.

The **Stop Time** selected on the Call Meter screen is 22:05. However, on the confirmation screen, the time has been set to 22:15. This is because the meter's interval was set to 15 minutes in MV-90 so MV-WEB rounds up to the next value divisible by the meter interval.

The **Frequency Calling Interval** displayed on the Call Meter screen defaults to 30 minutes. This value is based on the Call Group assigned to the meter by the System Administrator (via the MV-WEB Administration Tool). The Call Group determines how often and how long data can be pulled from a meter. Since the **Interval** value wasn't changed on the Call Meter screen, the same value is displayed on the Call Meter Confirmation screen.

**Note** If the difference between the start and stop times (entered on the Call Meter screen) is less than an hour, MV-WEB treats it as a single call.

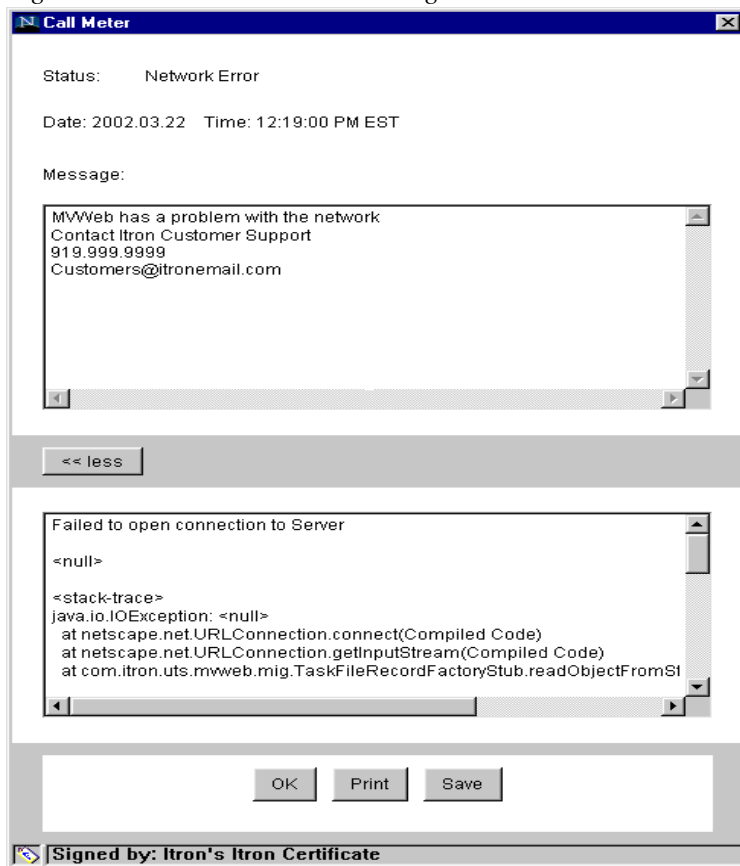
The three buttons that appear at the bottom of the Call Meter Confirmation screen perform a different action when selected.

- **OK** – Click this button if all the information on the Call Meter Confirmation dialog box is correct. The request is sent to MV-90.
- **Cancel** – Click this button to cancel the Call Meter request.
- **Modify** – Click this button if you want to return to the Call Meter request screen and change any of the information selected.

### Processing the Call Meter Request

The Call Meter request may take several minutes to process once initiated. Once processed, the Call Meter status screen opens and notifies you if there were any problems in scheduling tasks. The Call Meter status screen includes the time and date of the request, the status of the request, and detailed information regarding the request. Also, you have the option to print the status message or save it as a text file.

Figure 27: Call Meter Status Dialog Box



The Call Meter Status Dialog Box tracks the following error types:

- Network Errors
- Database Errors
- Incorrect Properties (such as taskfile or table name)

This dialog box also appears if the interrogation request was successfully scheduled.



Table 8: Call Meter Status Dialog Box Field Descriptions

Field/Button	Description
Status	Displays the status of a meter interrogation request.
Date	Displays the date of the meter interrogation request.
Message	Describes the status of the meter interrogation request.
<<less / more>> (buttons)	Clicking the <b>more&gt;&gt;</b> button opens a second message box and the button changes to <<less. Click <<less to close the second message box.
OK	Click this button close the Call Meter Status dialog box.
Print	Click this button to print the status message.
Save	Click this button to save the status message as text file.



---

# Glossary

<b>Apparent Power</b>	The total amount of power consumed by any load that is not purely resistive in nature. It typically exceeds real power with the excess capacity being that which is required to build magnetic fields in inductive loads.
<b>Call Group</b>	Parameter assigned to a meter that determines the length of time and frequency that data can be pulled from a meter. This parameter is set in the MV-WEB Administration Tool.
<b>C&amp;I</b>	Acronym. Commercial and Industrial.
<b>Demand</b>	The rate of usage, or usage x number of intervals per hour.
<b>Energy</b>	The supply of electric power over a period of time. $E = \text{power} \times \text{time}$ . For example, a 100kW motor that runs for 3 hours consumes $100\text{kW} \times 3 \text{ hours} = 300\text{kWh}$ of electrical energy.
<b>kVA</b>	Kilo-volt ampere hour. Square root of $[(\text{kW} \times \text{kW}) + (\text{kVAR} \times \text{kVAR})]$ .
<b>kVAH</b>	Kilo-volt ampere hour. kVAH is the total power supplied, made up of real power (kWH) and reactive power (kVARH).
<b>kVAR</b>	Kilo-volt ampere reactants. kVARH x number of intervals per hour.
<b>kVARH</b>	Kilo-volt ampere reactants hour. Reactive power. An indication of the amount of power being “lost” due to the “reactive” properties of the equipment or network.
<b>kW</b>	Kilowatt. kWH x number of intervals per hour.
<b>kWH</b>	Kilowatt hour. The actual usable power transfer, or real power.
<b>Load Factor</b>	$\Sigma (\text{kW}_n) / (\text{kW}_{\text{max}}) \times \text{total number of intervals}$ . A utilization factor expressed as a ratio of average demand to maximum demand. The closer the load factor value is to 1.0, the more level the load.
<b>Losses</b>	Power lost in the transaction from transformers to customers.
<b>MV-WEB Administration Tool</b>	Web based application that handles the configuration of the MV-WEB system.

<b>MV-90</b>	Itron software that provides collection and analysis of load profile metering data.
<b>MV-90 Enterprise Edition (MV-90EE)</b>	Itron software that enables MV-90 to function as an advanced, two-way information exchange server for an array of applications. These include billing and financial settlement, load forecasting and demand management, distribution operations and planning, marketing and customer care, deregulated marketplace transactions, and more.
<b>Power Factor</b>	KW / KVA, or real power / total power supplied. Power factor values range from 0 to 1.0, where the optimum value of 1.0 indicates that no power is being lost due to the reactive properties of the equipment or network.
<b>Real Power</b>	The amount of power consumed as actual work (for example, heat, light, motor rotation) in a load.
<b>Service Point</b>	An abstract location where energy is measured.
<b>Total Usage</b>	The total energy requirement or consumption for a specific time period.
<b>Usage</b>	The amount of measured quantity being consumed.

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