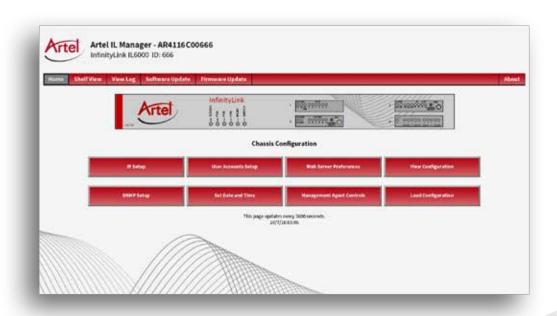




# **INFINITYLINK MANAGER**



SNMPv2, HTTP Element Management Systems
Installation and Operations Manual



# SNMPv2, HTTP Element Management System [InfinityLink Manager]

**Setup and Operations Manual** 

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# **About This Manual**

This manual provides instructions for connecting to, configuring, and operating the IL Manager element management system.

## **Audience**

This manual is intended for the following trained and qualified service personnel who are responsible for installing and operating IL Manager:

- System installer
- · Hardware technician
- System operator

# **Related Documentation**

The following documentation contains material related to IL Manager:

Document	Provides
InfinityLink IL6000 Chassis Installation and Operations Manual	Overview and installation procedures for the chassis products available with the InfinityLink media transport solution, including the following chassis models that enable you to use IL Manager:  • IL6000 (4-slot chassis)
Function Module Installation and Operations Manuals	Module-specific manuals for installing and configuring a InfinityLink video platform function module.

**Note:** To obtain the latest versions of this guide and related documents, go to www.artel.com.

# **Symbols and Conventions**

This manual uses the following symbols and conventions:

#### Caution

A caution means that a specific action you take or fail to take could cause harm to the equipment or to the data transmission.



#### Warning

A warning describes an action you take or fail to take that could result in death, serious physical injury, or destruction of property.

**Note:** Important related information, reminders, and recommendations.

Italics—used for emphasis, for indicating the first occurrence of a new term, and for book titles

- 1. Numbered list—where the order of the items is important
  - Bulleted list—where the items are of equal importance and their order is unimportant

## **Artel Customer Service**

You can reach Customer Service by e-mail at customercare@artel.com or by telephone:

In the US call (800) 225-0228, then select 1 for technical support.

Outside the US call (978) 263-5775, then select 1 for technical support.

When requesting assistance, please be ready to provide the following information:

- Your name and telephone number
- Product model and serial number
- Brief description of the problem
- · List of symptoms
- Steps you have already taken to try to resolve the problem



# InfinityLink Manager

**SNMP, HTTP Element Management System** 

# Information About InfinityLink Manager

This manual describes how to set up and operate InfinityLink Manager (or *IL Manager*), which is a web-based graphical user interface (GUI) that provides a network management interface for an InfinityLink chassis. Using IL Manager, you can monitor and configure the operations of the installed function modules. IL Manager includes a real-time preemptive, multitasking operating system, TCP/IP stack, web server, and SNMP master agent.

The IL Manager software resides on a single board computer on a module in the InfinityLink chassis. Contact Artel for information on how to add IL Manager to your chassis (see the Artel Customer Service (page x)).

#### Note:

- This guide uses the following terms interchangeably:
  - "Chassis" and "shelf" when referring to any of the InfinityLink chassis models.
  - "IL Manager" and "EMS" when referring to the InfinityLink Manager element management system.
- This guide uses the term *management module* when the information being presented applies to the IL Manager host module in your InfinityLink chassis.
- The IL Manager screens may vary in appearance depending on the browser that you use, the version of IL Manager, or the chassis model.
- Unless otherwise indicated, the screen shots used in this guide are from IL Manager as hosted by the IL6000 chassis. The screens vary slightly when viewed from other InfinityLink products.

#### IL Manager features include the following:

- Enables IL Manager Administrators to monitor the chassis operating status and configure modulespecific parameters for all function modules installed in the chassis.
- Supports multiple management interfaces including:
  - Browser-based interface (for browser requirements, see the "Configuring and Cabling the Client Device" section on page 3).
  - Simple Network Management Protocol version 2c (SNMPv2c as defined in RFC 1901) interface for third-party monitoring applications.
- Allows three different user privilege levels for the browser interface: Administrator, Power User, and User.

Provides all users with a coherent view of the hardware regardless of how many or which
management interfaces are being used. One user can use a browser-based interface while another
user simultaneously uses SNMP. Configuration changes executed by a user are seen by all users and
all users see the same hardware state.

# IL Manager Operational Considerations and Requirements

The IL Manager operating considerations are as follows:

- The management modules that host IL Manager have a standard 10/100/1000 Mb Ethernet connection for user access to IL Manager. Artel ships IL Manager with a known fixed IP address (192.168.100.5). The hardware is initially configured in a two-node network of the hardware and a single client. You set the site-specific network address in the hardware by connecting a client to the management module Ethernet interface and accessing the integrated browser GUI. After specifying a new IP address and rebooting the software, you access IL Manager using the new IP address.
- IL Manager supports HTTP-type access using a web-based browser and third party SNMP network management systems. Additional features include the following:
  - SNMPv2 MIB-II NMS support
  - Static IP configuration using the GUI
  - SNMP configuration using the GUI
  - EMS provisioning of all module-specific parameters using the GUI
  - Support for all InfinityLink compatible function modules, shelf backplane, and power supplies
  - Reporting for all module status, including module serial number, hardware and firmware revisions, and shelf slot location
  - Monitoring and reporting for all module-specific major and minor alarms
  - Monitoring and reporting for module and SFP insertions and removals
  - Function module firmware upgrade support using the GUI
  - Management module software update using a PC application
- All function module configuration states persist across restarts of the IL Manager software, power cycles of the shelf, or function module firmware upgrades.
- Function modules require a minimum software version level installed to enable management by IL
  Manager. IL Manager's Software Update screen indicates when a module's firmware needs to be
  upgraded. You perform an upgrade by using the Software Update screen and the module's upgrade
  file, which you can download from the Artel website (artel.com). For more information, see the
  "Displaying the Function Module Software Revision Level" section on page 19.

**Note:** As Artel introduces new function modules for the InfinityLink video platform, you may have to upgrade the management module firmware software before IL Manager can recognize, monitor, and configure the new modules. For more information, see "Updating the IL Manager Agent Software" section on page 16.



# **Configuring and Cabling the Client Device**

You must access IL Manager locally using a client device before you can connect the management module's Ethernet interface directly to your management network. Using a local client device, you configure IL Manager with the information required for a network connection, such as the static IP address that is specific to your network.

Before a local client device can communicate with IL Manager, you must configure the client with an IP address that will enable communication between the client and IL Manager.

The client must have one of the following browsers loaded on it for communication with IL Manager:

- MS Internet Explorer, version 8 or later
- Firefox 12.0 or later
- Chrome 21 or later

The process for configuring a client's IP address will vary depending on the operating system installed on the client. The following example procedure shows how to configure the client IP address when using MS Windows Vista, Windows 7, and Windows 8:

- 1. From the Start menu search for "Network Connections."
  - The Network Connections window appears.
- 2. Right-click on Local Area Connection and choose **Properties**.
  - The Local Area Connection Properties dialog box opens.
- 3. From the Networking tab, double-click on Internet Protocol Version 4 (TCP/IPv4).
  - The Internet Protocol (TCP/IP) Properties dialog box appears.
- 4. Choose the **Use the following IP address** option if it is not already selected.
- 5. Enter the following IP address: **192.168.100.50**
- 6. Enter the following Subnet mask: 255.255.255.0
- Click **OK**.

The Internet Protocol (TCP/IP) Properties dialog box closes.

- 8. From the Local Area Connection Properties dialog box, click **OK**.
  - The window closes. The client device is configured and ready for cabling.
- 9. Attach an Ethernet cable from the client device to the RJ45 connector labeled **MGMT** on the chassis management module.

The client is now ready to access the IL Manager GUI (see the "Accessing the IL Manager Home Page" section on page 3).

# **Accessing the IL Manager Home Page**

This section describes how to access the IL Manager GUI and explains the options available from its home page.

To access the IL Manager web-based GUI, perform the following steps:

- 1. Ensure that you have attached an Ethernet cable between the RJ45 connector on the management module and your client device.
- 2. Ensure that you have configured the client device with an IP address that will allow communication with IL Manager (see the "Configuring and Cabling the Client Device" section on page 3).
- 3. Open the client web browser.
- 4. Apply power to the chassis.
- 5. Perform one of the following tasks:
  - New installation—If you have not yet configured IL Manager with a site-specific IP address, enter the IL Manager default IP address **192.168.100.5** (http://192.168.100.5/index.htm) in the address window of the browser.
  - Existing installation—If you have already configured IL Manager with a site-specific IP address, enter the IP address.

The Home page appears (see Figure 1), displaying the following GUI components:

- Menu Bar—Main menu options that change depending on the GUI page displayed.
- **Chassis View**—Chassis front panel that displays the chassis type that IL Manager resides on and the installed function modules.
- **Chassis Configuration Options**—Configuration options that you use to configure the chassis. These options are specific to the Home page.



See Table 1 for details about the Home page menu bar and chassis configuration options.

Figure 1. IL Manager Home Page

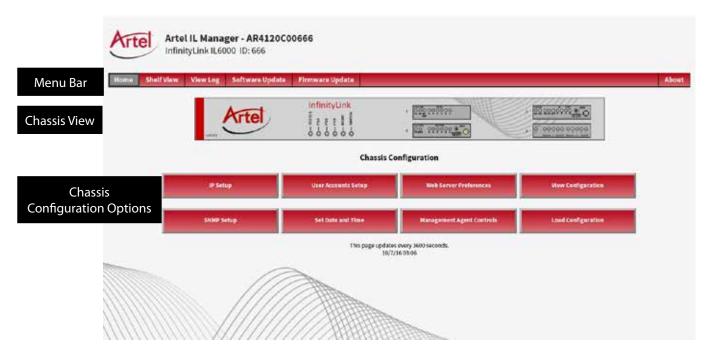


Table 1 describes the options available from the Home page.

Table 1. IL Manager Home Page Options

Menu Bar Option	Available Features	Description	
Home	Chassis front panel	Displays detected installed modules.	
	Chassis Configuration options	Configures the following parameters:	
		<ul> <li>Static IP Setup—Configure the IL Manager IP address and optional NTP server IP address. See the "Setting Up the IL Manager Static and Chassis IP Addresses" section on page 9.</li> </ul>	
		• <b>SNMP Setup</b> —Configure SNMP parameters. See the "Setting Up the SNMP Configuration" section on page 11.	
		<ul> <li>User Accounts         — Manage user access to IL Manager. See the         "Setting Up User Accounts" section on page 10.</li> </ul>	
		• <b>Set Date and Time</b> —Set the time for IL Manager. See the "Setting the Date and Time" section on page 11.	
		• <b>Web Server Preferences</b> —Configure the chassis view refresh rate. See the "Setting the Web Server Preferences" section on page 12.	
		<ul> <li>Management Agent Controls         —View current operating mode         and reset the IL Manager configuration, including the IP address.         See the "Using the Management Agent Controls to Reboot or Reset         the Agent" section on page 24.</li> </ul>	
		<ul> <li>View Configuration—View current configuration attributes or save a configuration to a local PC. See the "Viewing and Saving the IL Manager Configuration" section on page 14.</li> </ul>	
		<ul> <li>Load Configurations—Load a configuration. See the "Loading a Configuration" section on page 22.</li> </ul>	
Shelf View	Chassis rear panel	Displays the detected installed modules. Hover over a module to view module type/chassis slot number. Click on a module to view the Module Status screen.	
	Module status table	Displays the following module status information:	
		Slot—Chassis slot number.	
		State—Communication state with IL Manager.	
		<ul> <li>Module Type—Module model. Click to view the Module Status screen.</li> </ul>	
		<ul> <li>Slot Name—Name assigned to slot. Click to view the Edit Labels screen.</li> </ul>	
		Configuration—Click to view the module Configuration screen.	
	Unique menu bar option	<b>Edit Labels</b> —Edit the shelf name. Click to view the Edit Shelf ID screen. See the "Setting the Shelf Labels" section on page 12.	



Table 1. IL Manager Home Page Options (Continued)

Menu Bar Option	Available Features	Description	
View Log	Log table	View IL Manager log files. See the "Viewing the IL Manager Log File" section on page 15.	
	Log View Settings pane	Manage logging function and log page displayed.	
	Unique menu bar options	<ul> <li>Add Comment—Add a comment to the log.</li> <li>Save to File—Save the log to a file.</li> </ul>	
Flash Update	Chassis rear panel	Display the detected installed modules. Hover over a module to view module type. Click on a module to view the Module Status screen.	
	Module table	<ul> <li>Module selection table that displays the following information:</li> <li>Slot—Chassis slot number.</li> <li>Module Type—Module model. Click to view the Module Status screen.</li> <li>Slot Name—Name assigned to the chassis slot.</li> <li>Current Rev—Current firmware revision installed in the module.</li> <li>Min Req'd Rev—Minimum required firmware revision level to operate with IL Manager.</li> <li>See the "Upgrading Function Module Software" section on page 19.</li> </ul>	
About	About IL Manager table	Display information about IL Manager such as its operating mode, software version number, SNMP version number, and so on.  See the "Viewing the Management Agent Details" section on page 21.	
	Chassis slot table	<ul> <li>Display the following information:</li> <li>Slot—Chassis slot number.</li> <li>Module Type—Module model.</li> <li>Serial Number—Module serial number.</li> <li>Software Rev.—Module software revision level.</li> </ul>	

# **Configuring IL Manager**

This section describes how to configure the operation of IL Manager. Use the procedures in this section to initially set up IL Manager for your particular application or when the needs of your application change.

**Note:** You must have administrative privileges to access and modify the IL Manager configuration options. The default values for the Administrator account are as follows: User Name: **admin**, Password: **admin**. We strongly recommend that you change the password for the Administrator account from its default value (see the "Setting Up User Accounts" section on page 10).

The general process by which you configure the operations of IL Manager is as follows:

- 1. Setting Up the IL Manager Static and Chassis IP Addresses (page 9)<sup>1</sup>
- 2. Setting Up User Accounts (page 10)
- 3. Setting Up the SNMP Configuration (page 11)
- 4. Setting the Date and Time (page 11)
- 5. Setting the Web Server Preferences (page 12)
- 6. Setting the Shelf Labels (page 12)
- 7. Setting the Shelf Slot Labels (page 13)
- 8. Viewing and Saving the IL Manager Configuration (page 14)

<sup>1</sup> Required setup operations; all other setup operations are optional or application specific.



## Setting Up the IL Manager Static and Chassis IP Addresses

Artel ships IL Manager with the following default IP address configurations:

- IP address—192.168.100.5
- Net Mask—255.255.255.0
- Gateway IP Address—0.0.0.0
- DNS IP Address—0.0.0.0
- NTP IP address—Blank

You can change the address information for security or site-specific network requirements.

#### Note the following:

- IL Manager does not support DHCP; you must specify a static IP address that is appropriate for your network. The IP address is typically from a reserved address range but it can be an Internet address.
- New static IP parameters do not take effect until IL Manager reboots (see Step 3).
- To reset the address configuration back to the default values, you can use the procedure in this section or use the reset button on the management module (see the "Using the IL Manager Reset Button" section on page 24).

To change the IL Manager static IP address configuration, perform the following steps:

- 1. From the Home page Chassis Configuration options, click **IP Setup**.
  - Log in as the Administrator if you haven't already.
  - The Static IP Setup screen appears, displaying the current (active) settings.
- 2. In the Shelf IP Settings pane, enter the following address information using dotted-decimal format (for example, 10.10.10.1):
  - IP Address—IP address of the chassis management module. The default is 192.168.100.5.
  - NetMask—Subnet mask for the EMS IP address (for example, 255.255.0.0). The default is 255.255.255.0.
  - Gateway IP—(Optional) IP address of the network gateway. The default is 0.0.0.0.
  - DNS IP—(Optional) IP address of the network domain name server. The default is 0.0.0.0.
  - NTP IP—(Optional) IP address of the Network Time Protocol (NTP) server used to synchronize the IL Manager date and time. The default is blank.

**Note:** If you use NTP, you must check the **Reboot after saving settings** option (see Step 3). After the reboot, IL Manager accesses the NTP server to obtain the date and time.

If you chose not to use NTP, you can manually set the IL Manager date and time (see the "Setting the Date and Time" section on page 11).

3. (Optional) Check the **Reboot after saving settings** check box if you want the EMS to reboot when you click the Submit button.

- 4. Click one of the following:
  - **Submit**—Saves the new configuration parameters and IL Manager reboots if you checked the **Reboot after saving** box.
  - Reset—Resets the configuration fields back to their previously saved values.
- 5. (Optional) If you are connected locally to IL Manager, you can now connect IL Manager to your management network and access the software using the IP addresses that you specified in Step 2.

## **Setting Up User Accounts**

You manage access to IL Manager by configuring user accounts, which consist of the following three classifications: Administrator, Power User, or User. The guidelines for each classification are as follows:

- Administrator account—Enables full access to all administrative and device functions and is the only
  user account that can configure the IL Manager operating parameters, such as the IP address, SNMP
  setup, time, and user account information. IL Manager has one Administrator account.
- Power User accounts—Enables viewing and configuring of device settings. IL Manager has two Power User accounts.

**Note:** Leaving both Power User usernames blank permits unrestricted access to changing and viewing device state on any function module. We recommend that you configure at least one power user.

User accounts—Enables view-only access to the device settings. IL Manager has two User accounts.

**Note:** Leaving both User usernames blank permits unrestricted access to viewing device state on any module.

To configure the IL Manager user accounts, perform the following steps:

- 1. From the Home page Chassis Configuration options, click **User Accounts Setup**.
  - Log in as the Administrator if you haven't already.
  - The IL Manager User Account Setup screen appears, displaying the current configured user accounts.
- 2. In the Administrator, Power User, and normal User panes, enter a username and password for each user account.

Usernames and passwords can consist of up to 16 characters each and are case sensitive. Spaces are allowed.

- 3. Click one of the following:
  - **Save**—Saves the new user account information.
  - Reset—Resets the user account information fields back to their previously saved values.



## Setting Up the SNMP Configuration

You can configure IL Manager to communicate with your SNMP server, enabling you to monitor the traps that IL Manager issues.

To configure the EMS for SNMP operation, perform the following steps:

- 1. From the Home page Chassis Configuration options, click **SNMP Setup**.
  - Log in as the Administrator if you haven't already.
  - The SNMP Setup screen appears, displaying the current SNMP communities and trap hosts.
- 2. In the Communities Names pane, configure the communities parameters (up to six) as follows:
  - Access control—Choose one of the following options for each community string that you want to configure:
    - Read-Only—Specifies a read-only community string.
    - **Read-Write**—Specifies a read-write community string.
  - Community strings—Enter the community string to use. The community string can contain 1 to 64 characters.
- 3. In the Trap Hosts pane, define the trap host parameters for each community as follows:
  - IP Address—Enter the trap host IP address using dotted-decimal format (for example, 10.10.10.1).
  - Port—Enter the trap host port number.
  - Community—Choose the associated community string number.
- 4. (Optional) Check the **Restart agent after saving settings** check box if you want to restart the SNMP service when you click the Submit button.

**Note:** The SNMP service must be restarted before the new SNMP parameters take effect.

- 5. Click one of the following:
  - **Submit**—Saves the new configuration parameters and IL Manager restarts if you checked the **Restart agent after saving settings** option.
  - **Reset**—Resets the SNMP parameters back to their previously saved values.

## **Setting the Date and Time**

You can manually set the IL Manager internal date and time settings.

**Note:** You can use an NTP server to synchronize the IL Manager date and time rather than setting it manually. For details, see the "Setting Up the IL Manager Static and Chassis IP Addresses" section on page 9.

To manually configure the date and time settings, perform the following steps:

- 1. From the Home page Chassis Configuration options, click **Set Date and Time**.
  - Log in as the Administrator if you haven't already.
  - The IL Manager Set Time screen appears, displaying the current system date and time settings.

- 2. In the Enter New Time pane, set the following parameters:
  - a. Current date using the yyyy-mm-dd (year-month-day) format. For example, 2008-01-15.
  - b. Current time using the hh:mm (hour:minute) format, in which the hh value can be 0 to 23 and the mm value can be 01 to 59. For example, 21:30.
- 3. Click the **Submit** button to save the new date and time settings.

The Settings Save screen appears.

## Setting the Web Server Preferences

You can configure the following web server preferences:

- Screen Refresh Rate—Setting that determines how often IL Manager refreshes the screen display.
   When you select **Shelf View** from the home page, IL Manager displays a list of the installed function modules and the current operating status of each module. IL Manager refreshes the display periodically according to the refresh rate setting.
- Module View Auto Refresh—Setting that applies to the DLT710 module only, which is a multi-format
  digital video physical layer tester. This administrative option sets an automatic screen refresh rate for
  the DLT710 status and log screens. For more information about this module, see the DLT710
  Generator/Test Module Installation and Operations Guide.

To set the web preferences, perform the following steps:

- 1. From the Home page Chassis Configuration options, click **Web Server Preferences**.
  - Log in as the Administrator if you haven't already.
  - The Web Server Preferences screen appears.
- 2. In the IL Manager Web Server Preferences pane, enter a new refresh rate in the refresh rate box.
  - The range of valid refresh rates is 1 to 3600 seconds. The default is 15 seconds.
- 3. (DLT710 module only) Set the operation of the module view auto-refresh feature by clicking one of the following radio buttons:
  - Allow—Enables the feature, allowing users to set the refresh rate of the DLT710 status and log screens from each of the screens.
  - Disallow—Disables the feature (default).
- 4. Click one of the following:
  - **Submit**—Saves the new refresh rate. The Settings Saved screen appears.
  - Reset—Resets the refresh rate back to its default value (15 seconds).

## **Setting the Shelf Labels**

You can edit the labels assigned to the shelf to provide information such as the shelf function and location. The shelf label editor also contains a note section for recording items such as maintenance dates or special operating notes.



To edit the shelf labels, perform the following steps:

- 1. From the Home page menu bar, click **Shelf View**.
  - The Shelf View screen appears.
- 2. From the Shelf View screen menu bar, click **Edit Labels**.
  - The Edit Labels screen appears.
- 3. From the Edit Shelf Labels pane, define the labels as follows using the specified number of alphanumeric characters (special characters are permitted):
  - Shelf Name—Provides a customer-specific shelf name for the shelf (16 characters maximum). This label appears across the top of the Shelf View screen and in the Shelf/Backplane Data screen.
  - Shelf's Description—Provides a shelf description, such as the function of the shelf within the network (40 characters maximum). This label appears in the Shelf/Backplane Data screen.
  - Shelf Location—Indicates the location of the shelf within the network, such as the building and equipment rack numbers (40 characters maximum). This label appears in the Shelf/Backplane Data screen.
  - Notes—Provides a place for recording additional shelf information, such as maintenance dates or special operating notes (40 characters maximum). This information appears on this screen only.
- 4. Click one of the following:
  - **Submit**—Saves the displayed label information.
  - **Reset**—Resets the information that you modified back to its previous value.

## **Setting the Shelf Slot Labels**

You can edit the shelf slot labels to provide information such as the function of the module located in the slot. The default slot name is the factory-supplied serial number.

**Note:** Specific shelf slot labels vary for each module type.

To edit a shelf slot label, perform the following steps:

1. From the Home page menu bar, click **Shelf View**.

The Shelf View screen appears.

- 2. Access the shelf slot label editor screen using one of the following methods:
  - From the Module Type column, click the desired module. The associated Module Data screen appears, then click **Edit Labels** in the sidebar menu.
  - From the Slot Name column, click the desired shelf slot.
- 3. Define the labels as follows using the specified number of alphanumeric characters (special characters are permitted):
  - Name—Provides a customer-specific module name (16 characters maximum).
  - Description—Provides a module description (40 characters maximum).
- 4. Click one of the following:

- **Submit**—Saves the displayed label information.
- **Reset**—Resets the information that you modified back to its previous value.

## Viewing and Saving the IL Manager Configuration

You can view the current configuration of IL Manager and save the information to a file on a PC. You can then use the file as a backup for the current management module or you can use the file to configure another management module of the same model type (see the "Loading a Configuration" section on page 22). The information that displays will vary depending on your particular configuration.

**Note:** You must have administrative privileges to view and save configuration settings.

To view and save the current IL Manager configuration, perform the following steps:

- 1. From the Home page Chassis Configuration options, click **View Configuration**.
  - 1. The View Configuration screen appears, displaying current IL Manager configuration attributes.
- 2. (Optional) To save the configuration to a file, click **Save Configuration to File** and perform one of the following tasks depending on the browser type:
  - Firefox—The Opening dumpCfg.htm dialog window appears. In this window, choose **Save File** and click **OK**. Firefox saves the IL Manager configuration to the dumpCfg.htm file in the Downloads folder.
  - Internet Explorer—The File Download dialog window appears. In this window, click Save to open the Save As dialog window. In this window, browse to the location where you want to save the configuration file, then click Save.
- (Optional) To reboot IL Manager using the displayed configuration settings, click Reboot with these Configuration settings.

The following message appears:

Rebooting... This may take up to 15 seconds or you may click here after 15 seconds.



# **Performing Other Administrative Tasks**

This section describes the administrative tasks that you can perform after configuring IL Manager.

This section includes the following topics:

- Viewing the IL Manager Log File (page 15)
- Updating the IL Manager Agent Software (page 16)
- Upgrading Function Module Software (page 19)
- Viewing the Management Agent Details (page 21)
- Loading a Configuration (page 22)
- Enabling or Disabling the Power Supply and IL Manager Port Alarms (page 22)
- Using the Management Agent Controls to Reboot or Reset the Agent (page 24)
- Using the IL Manager Reset Button (page 24)

## Viewing the IL Manager Log File

IL Manager uses a circular buffer to maintain a log file of the events that it detects, enabling you to track when events take place, such as module removals and insertions, configuration changes, and alarm conditions.

To display the IL Manager log file, from the Home page menu bar, click **View Log**. The Log screen appears.

To minimize the time required to display the log entries, IL Manager restricts the number of entries that can be viewed at a given time to 200.

The IL Manager log displays the following information:

- Entry #—Sequential log entry number.
- Date Time—Date and time of the recorded event.
- Type—Event type.
- Slot—Shelf slot number.
- Module—Module model number.
- Serial Number—Module serial number.
- Description—Alarm condition description. The Description and Type table cells may display in color to indicate the following:
  - Green—Major and minor alarm clearing
  - Yellow—Minor alarm
  - Red—Major alarm
  - Orange—Internal error (such as, failure to get the management module slot ID)
  - Light blue—Informational message (such as, module configuration change or flash update)
  - Dark blue—Set date/time

Log entries are CRC checked. When an entry has a CRC error, an asterisk (\*) displays along with an explanatory note below the log table.

To manage the IL Manager log display, perform the following steps:

- 1. From the Log View Settings pane, configure the following parameters:
  - Entries per Page—Enter the number of log entries that you want to display in each screen.
  - Slot Filters—Select the desired chassis slots, or click Select All or De-select All.
  - Event Filters—Select the desired alarms or events, or click **Select All** or **De-select All**.
- 2. Click Apply.

The display updates using the selected filters.

3. Click the **Previous Page**, **Most Recent Page**, and **Next Page** buttons to navigate through the log display.

## **Updating the IL Manager Agent Software**

As new function modules or IL Manager features are introduced, it may become necessary to update the IL Manager software and the software on individual function modules. The next section describes how to update individual modules while this section describes how to upgrade the IL Manager Agent software and how to troubleshoot any issues that may occur during the upgrade process.

This section contains the following topics:

- Displaying the IL Manager Agent Software Revision Level (page 16)
- Performing an IL Manager Agent Software Upgrade (page 16)

**Note:** The IL Manager Agent update must be done from a computer running Windows 7 or greater.

#### Displaying the IL Manager Agent Software Revision Level

To display the revision level of the currently installed IL Manager software, from the Home page menu bar, click About. The About screen appears and displays the revision level information of the installed IL Manager agent software and the SNMP MIB. For more information, see the "Viewing the Management Agent Details" section on page 21

#### Performing an IL Manager Agent Software Upgrade

Before you begin the upgrade process, you must obtain the Zip file containing the latest set of IL Manager agent upgrade files, which you can get from the Artel website (artel.com). Only the latest revision is shown on the website. Download this file and extract the contents to the client device (Windows PC) that you will use for the upgrade process. This file includes several important files including the latest IL Manager version, two executable files to program the IL Manager and a complete set of the latest module software files.

Two programs are provided to update IL Manager depending on the network configuration in use. If the client device (Windows PC) is on the same network as the IL Manager, then you can use AutoUpdate.exe.

AutoUpdate.exe uses UDP to communicate with IL Manager and can locate ("Find") chassis on the same subnet as the client device. If the client device (Windows PC) is not on the same network as IL Manager, then



TcpUpdate.exe can be used. This uses TCP port 20034 to communicate to the target IL Manager and will work with NAT and through most firewalls. Although it can also locate local chassis, "Find" cannot identify chassis outside of the local network even though it can update them. You must know and enter the unique IP address of the chassis to update when using TcpUpdate.

Before the IL Manager Agent Software can be upgraded, the Update settings must be set to enable the use of the selected update program. From the Home page, select "IP Setup". A user name and password are required. In the table labeled Update Settings are options to enable or disable TcpUpdate and AutoUpdate. Select Reboot after saving settings when submitting change. IL Manager must be rebooted for update options to take effect. It is recommended that remote updates be enabled only when needed and then disabled after the updates are completed to enhance security.

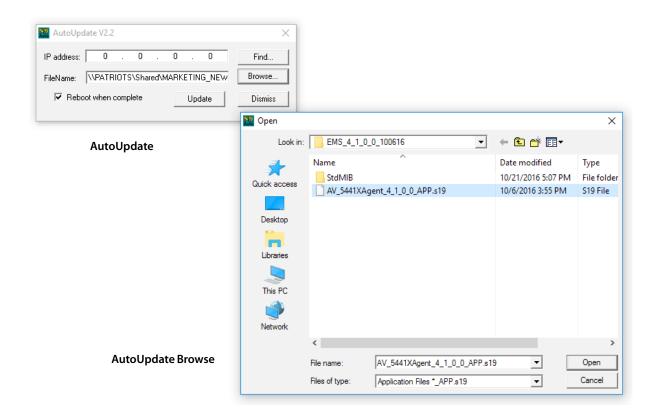
Press Submit for the changes to take effect.

To upgrade the IL Manager agent software, perform the following steps:

- 1. The chassis must be operating and the IL Manager can be accessed by the client device.
- 2. From your client device, navigate to the IL Manager agent software files that you obtained from Artel and double-click on the **AutoUpdate.exe** or **TcpUpdate.exe file.**

The dialog box appears (see Figure 2).

Figure 2. AutoUpdate



3. Enter the IP address of the unit to be upgraded or click Find to search for IL Managers (see Figure 2). If the Windows Security Alert appears, click Unblock to disable the firewall temporarily for the upgrade process.

Figure 2. AutoUpdate

4. If Find locates the correct IP address of the management module to update, select it and click **OK**. The Find dialog box closes and the dialog box now displays the selected IP address. Otherwise the IP address must be entered manually.

**Note:** If there are multiple chassis on the same IP subnet, make sure that you select the unit that you want to upgrade.

5. From the AutoUpdate dialog box, click **Browse**.

The browse window appears.

- 6. Navigate to the location where the downloaded file's contents were extracted, and choose, the IL Manager agent \*.s19 file (for example, AV\_5441XAgernt\_4\_1\_0\_0\_APP.s19).
- 7. Click Open.

The browse window closes and the dialog box displays the path and filename of the IL Manager Agent file

8. (Optional) Select **Reboot when complete.** 

This option enables an automatic reboot of the IL Manager software after the upgrade file is installed.

**Note:** The IL Manager agent software upgrade does not take effect until IL Manager is rebooted. If you do not choose this option, you must manually reboot IL Manager after the software upgrade file has been uploaded to the module (see the "Using the IL Manager Reset Button" section on page 24).

#### 9. Click **Update.**

The progress bar displays, indicating the progress of the software upgrade. The "Programming Complete" message displays when the upgrade is complete.

If you enabled the **Reboot when complete** option in Step 8, the EMS software status LED on the rear panel turns yellow to indicate that the EMS (IL Manager) is rebooting. The LED turns green when the reboot process is complete. This process takes several seconds, during which time attempts to access a IL Manager screen may be slowed or may time out. Retry a screen that times out to correct the problem.



## **Upgrading Function Module Software**

You can use IL Manager to view the revision level of the installed software in each module. The display highlights any module that has software loaded on it that is below the minimum revision level for the IL Manager installed. If the minimum revision is not met, certain features may not work or may work incorrectly. If a module needs upgrading, perform the upgrade using the procedure in this section and the upgrade file, which you can download from the Artel website (artel.com). In most cases, updating the firmware has no effect on the operation of the module (artel.com).

This section contains the following topics:

- Displaying the Function Module Software Revision Level (page 19)
- Performing a Function Module Software Upgrade (page 19)

#### Displaying the Function Module Software Revision Level

To display the revision level of the installed software in each function module, from the Home page menu bar, click **Software Update.** Log in as the Administrator or Power User if you haven't already.

The Software Update screen appears and displays the following information:

- Rear Panel View—Illustration that shows the Installed modules. Hover over a module to view the
  module model and chassis slot number. Click a module to view the selected module's Module Status
  page.
- Chassis Slot Table—Contains the following information:
  - Chassis slot number of the installed function module. Slot 0 is reserved for the chassis backplane.
  - Module Type—Function module model or backplane indicator.
  - Slot Name—User-defined name for the shelf slot.
  - Current Rev—Installed software revision level. If a module's software revision level is below the required minimum level for IL Manager operation, it displays in red.
  - Min Req'd Rev—Minimum software revision level for IL Manager operation.

#### Performing a Function Module Software Upgrade

This section describes how to upgrade the software of an installed function module. During this process, you need to know the module type and the chassis slot location Displaying the Function Module Software Revision Level (page 19).

To upgrade the software on a functional module, perform the following steps:

- From the Home page menu bar, click **Software Update**.
   Log in as the Administrator or Power User if you haven't already. The Software Update screen appears.
- 2. Click the radio button to the left of the module to update.
- 3. Click **Browse** to browse to the location of the software file and select the required file. The file will have the module type and a .hex extension such as "DLT710\_0107.hex".
- 4. Click Upload File.

IL Manager performs a type check to ensure that the software file that you selected is the correct type for the selected function module. If the type check passes, the upgrade process begins and should complete within about a minute. When the upgrade process is complete, the Software Complete screen appears.

#### **Caution**

Do not interrupt the software upgrade process. Interruptions can corrupt the function module software, which will require you to ship the function module back to Artel for repair.

5. Click the return to Software page button.

The selected module should now show the revision that was selected in the update file.

#### **Updating Function Module Firmware**

From IL Manager home page, click **Firmware Update**. The table displayed will list any function module that has firmware which can be updated. If a module firmware needs updating, perform the update using the procedure in this section and the update file included in this package. You can always download the latest package from <a href="http://www.artel.com/support/firmware-updates">http://www.artel.com/support/firmware-updates</a>.

#### Displaying the Revision Level and Updating the Firmware

To update the firmware on a module, perform the following steps:

- Start with updating the IL Manager before proceeding to update Firmware.
- 2. Download Firmware image and store it where it will be locally accessible.
- 3. Bring up Windows file explorer and set location (IP address of the unit) to ftp://xxx.xxx.xxx.xxx/

(You will see the FTP file directory on the IL Manager)

You may be prompted for user name and password
If so you must enter either the Administrator or Power User information for IL Manager
You will see three folders:



- 4. If there is not a folder labeled **fpga** (lowercase), create one.
- 5. Open **fpga** folder, then drag and drop the downloaded image in to folder.
- 6. From the IL Manager home page; choose the Firmware Update menu option. You may be prompted to log in as the Administrator or Power User.
- 7. The **Firmware Update** screen will appear and display a table with the following information:
  - Only modules that are field updatable will appear in the table.



- Slot—Chassis slot number of the installed function module.
- Module Type—Module model number.
- Slot Name—User-defined name for the shelf slot or hardware serial number.
- Current Rev—Installed firmware revision level.
- 8. If you need to update a module, click the button to the left of the desired slot.
- 9. In the Firmware File Selection, select the File to process below the table, browse to the drop down list for the firmware file on IL Manager, and select the required file.
- 10. Click the **Submit** button.

The IL Manager will check to ensure that the firmware file you selected matches the selected function module. If the type check passes, the update process begins. When the update process is complete, the FPGA successfully updated screen will appear. If the check fails, a screen labeled FPGA update failed will appear with instructions on what to do next.

#### Caution

Do not interrupt the firmware update process. Interruptions can corrupt the function module firmware, which will require you to ship the function module back to Artel for repair.

## Viewing the Management Agent Details

You can view details about the IL Manager agent (such as the agent operating mode and version) and general information about the management module (such as the installed slot number and module IP addresses).

To view the management agent details screen, from the Home page menu bar, click **About**. The About IL Manager screen appears.

The management agent information that displays is as follows:

- Slot location—Chassis slot location where the management module is installed.
- Artel Agent—Installed management agent version number.
- SNMPv2 MIB II—SNMP MIB version.
- IP Address(es)—IL Manager static IP address.
- MAC Address—Ethernet port MAC address.
- Shelf Time: Time as determined by the IL Manager or NTP server (if configured to use).
- Hardware table—Table that displays only for a management agent operating in the active state. This
  table displays the following information for the hardware detected by the IL Manager:
  - Slot—Chassis slot location of the detected function module or power module (A or B). This cell is blank for the shelf (chassis).
  - Module Type—Hardware type, which can be Shelf, DC Power Supply, or a function module that has IL Manager functionality.

- Serial Number—Hardware serial number.
- Software Rev—Installed software revision level.

## **Loading a Configuration**

You can configure a management module by uploading a backup IL Manager configuration file to the module. Note the following restrictions for loading a configuration:

- · You must have administrative privileges.
- The IP address setting in the configuration file is specific to the management module that is the configuration file source module. Each management module in your network must have a unique IP address to which only it responds. For this reason, be sure to exclude the IP address settings when loading a configuration file that was created on another management module. For more information, see the "Setting Up the IL Manager Static and Chassis IP Addresses" section on page 9.

The backup file that you use must match the model of management module being configured. For information about creating a backup file, see the "Viewing and Saving the IL Manager Configuration" section on page 14.

To load a IL Manager configuration file, perform the following steps:

- 1. From the Home page Chassis Configuration options, click **Load Configuration**.
  - The Load IL Manager Configuration screen appears.
- 2. In the Load IL Manager Configuration pane, click **Browse** and browse to your saved configuration.
- Specify whether or not to load the IP address configuration that the configuration file contains.
   By default, this parameter is set to **Don't Load IP settings**.
- 4. Specify whether or not to reboot IL Manager after the configuration loads.
  - By default, this parameter is set to **Reboot after saving settings**.

**Note:** IL Manager must be rebooted before any configuration changes will take effect.

- 5. Specify whether or not to **Load Crosspoint Configuration** to load backplane connections in Crosspoint switch.
- Click Load File.

## **Enabling or Disabling the Power Supply and IL Manager Port Alarms**

The Chassis Power Supply alarm can be Enabled or Disabled. For example, when using only one of the two power supplies, the unused power supply will have a continuous Power Fail Major alarm.

Disabling the power alarm for that power supply will prevent that Major alarm from masking other faults in the chassis.

To enable or disable the management module power alarm, perform the following steps:

1. From the Home page menu bar, click **Shelf View**.



Log in as the Administrator or Power User if you haven't already. The IL6000 Shelf View screen appears, displaying the chassis back panel view and the chassis slot table of the currently installed function modules.

- 2. Select the management module by doing one of the following:
  - From the rear panel illustration, click on the management module.
  - From the chassis slot table's Module Type column, click on the management module model number.
  - The Module Status screen appears, displaying the current operating status of the module.
- 3. From the menu bar, click **Configuration**.
- 4. The module's Configuration screen appears, displaying the current Alarm settings: Enable or Disable.
- 5. Choose one of the following options for the Power Supplies "PS A" or "PS B":
  - **Enable**—Enables the power alarm (default setting).
  - **Disable**—Disables the power alarm.
- 6. Click one of the following:
  - **Submit**—Saves the selected alarm power setting.
  - Reload Page—Reloads the screen to display the current power alarm setting.

The IL Manager network port (RJ45) alarms can also be Enabled or Disabled. For example, when using only one of the two RJ45 ports, the unused port will have a continuous Link Down Major alarm. Alternatively, if the management port connection is temporary, it may be useful to disable both alarms. Disabling the port alarm for that RJ45 will prevent that Major alarm from masking other faults in the chassis.

To enable or disable the management module RJ45 Port alarm, perform the following steps:

1. From the Home page menu bar, click Shelf View.

Log in as the Administrator or Power User if you haven't already. The IL6000 Shelf View screen appears, displaying the chassis back panel view and the chassis slot table of the currently installed function modules.

- 2. Select the management module by doing one of the following:
  - From the rear panel illustration, click on the management module.
  - From the chassis slot table's Module Type column, click on the management module model number.
  - The Module Status screen appears, displaying the current operating status of the module.
- 3. From the menu bar, click Configuration.
- 4. The module's Configuration screen appears, displaying the current Alarm settings: Enable or Disable.
- 5. Choose one of the following options for the Port 1 or Port 2:
  - **Enable**—Enables the link down alarm (default setting).
  - **Disable**—Disables the link down alarm.
- 6. Click one of the following:
  - Submit—Saves the selected alarm power setting.

• **Reload Page**—Reloads the screen to display the current power alarm setting.

## Using the Management Agent Controls to Reboot or Reset the Agent

You can use the management agent controls to do the following tasks:

- View the chassis slot location where the management module is installed.
- View the management agent's operating mode:
  - Active—Management agent is operating in the active state.
  - Standby—Management agent is operating in the standby state. This mode displays only when dual management modules are installed and you are viewing the standby management agent.
- Reboot the agent.
- Reset the agent's configuration to the factory defaults, which includes setting the IP address to the default value of 192.168.100.5.

**Note:** Some configuration changes, such as the IP address, do not take effect until after you reboot management agent (see the previous bullet).

#### **Caution**

Resetting the agent's configuration includes setting the agent's static IP address back to its default value. The IP address is reset after you reboot the management module. If you are connected to IL Manager over your network, you may lose your connection to IL Manager. To restore your connection, see the "Accessing the IL Manager Home Page" section on page 3.

To use the management agent controls, perform the following steps:

- From the Home page Chassis Configuration options, click Management Agent Controls.
   The Management Agent Controls screen appears, displaying the agent's slot location and operating mode.
- 2. (Optional) Do one of the following:
  - Click Reboot Agent to reboot the agent, which can take up to 15 seconds.
  - Click **Reset Config to Factory Defaults** to reset the agent's configuration back to it's default values.

## Using the IL Manager Reset Button

The management module has a pin hole reset button on the rear panel that enables you to restart IL Manager and optionally reset the IL Manager IP address configuration back to its default settings.



You control the IL Manager reset function as follows:

- Restart IL Manager—Press and release the reset button. When the reset button is pushed in, the EMS status LED located on the rear panel changes from green to red to indicate that IL Manager has stopped monitoring the chassis and the installed function modules. When you release the reset button, IL Manager restarts and uses the current IP address configuration.
- Restart IL Manager and reset the static IP address configuration—Press and hold the reset button in for more than eight seconds. While the reset button is pushed in, the EMS LED turns from green to red and then to yellow at the eight-second point, indicating that the static IP address configuration has been reset to the factory default values as follows:
  - IP address—192.168.100.5
  - Net Mask—255.255.255.0
  - Gateway IP Address—0.0.0.0
  - DNS IP Address—0.0.0.0

When you release the reset button, IL Manager restarts using this default IP address configuration.

# **Managing the Chassis and Function Modules**

This section describes how to use IL Manager to monitor and configure the function modules and includes the following topics:

- Using the Shelf View Screen (page 26)
- Investigating Module Alarm Conditions (page 29).
- Viewing and Modifying a Module Configuration (page 30)

## **Using the Shelf View Screen**

You can monitor the current operating status of the chassis by using the Shelf View option, which enables you to access the following information:

- Current operating status of the shelf and the management and function modules. When a module is experiencing an alarm condition, the shelf view displays the associated shelf slot number and module type in red to indicate that a major alarm condition exists or yellow to indicate that a minor alarm condition exists. If a module is experiencing both a minor and major alarm, the IL Manager display gives the major alarm priority.
- Shelf-specific and module-specific information, such as alarm conditions, installed firmware revision level, and the current operating configuration.

To monitor the operating status of the installed modules, from the Home page menu bar, click **Shelf View**. The Shelf View screen appears, displaying the components described in Table 2.



Table 2. IL Manager Shelf View Components

Component	Description					
Rear Panel View	Illustration that displays installed modules. Do the following:					
	Hover over a module to display its module type and chassis slot number.					
	Click a module to display the Module Status page (see the "Investigating Module Alarm Conditions" section on page 29).					
	Slots A and B represent power module locations. Each slot will be one of the following:					
	• Empty					
	Contain either an AC or DC power module					
	Contain a management module					
	Slots 1 to 4 (IL6000) represent function module locations.					
	Status indicators are as follows:					
	Yellow shelf slot—Indicates that a minor alarm condition exists with the installed module (see Item 3 below).					
	Red shelf slot—Indicates that a major alarm condition exists with the installed module (see Item 3 below).					
	Not present—Indicates that IL Manager does not detect a module in the shelf slot.					
	No response—IL Manager detects a module in the slot but the module is not responding to IL Manager queries. This can occur when the module does not have the correct version firmware installed.					

Table 2. IL Manager Shelf View Components

Component	Description				
Chassis Slot Table	Table that displays the following information:				
	• <b>Slot</b> —Shelf slot number. If IL Manager does not detect a module in a shelf slot, then it does not list that slot number in this display.				
	• State—Status of the communication link between IL Manager and the module. Possible states are as follows:				
	<ul> <li>Responding—IL Manager has detected the module and the module is responding to EMS queries.</li> </ul>				
	<ul> <li>No response—IL Manager detects a module in the slot but the module is not responding to IL Manager queries. This can occur when the module does not have the correct version firmware installed.</li> </ul>				
	<ul> <li>Initializing—IL Manager is initializing management data for the module.</li> </ul>				
	<ul> <li>Module Type         — Module model number and operating status. Possible operating status indicators are as follows:</li> </ul>				
	<ul> <li>White—No alarm conditions exist and the module is operating normally.</li> </ul>				
	<ul> <li>Yellow—A minor alarm condition exists that requires attention.</li> </ul>				
	<ul> <li>Red—A major alarm condition exists that requires immediate attention.</li> </ul>				
	Click on the module type to get detailed module configuration and operating statistics (see the "Investigating Module Alarm Conditions" section on page 29).				
	• <b>Slot Name</b> —Shelf slot description and direct link to the shelf slot label editor. The default slot name is the factory-supplied serial number. You can edit this label (see the "Setting the Shelf Slot Labels" section on page 13).				
	• <b>Configuration</b> —Link to the Override screen if the module permits EMS (IL Manager) override (see the "Viewing and Modifying a Module Configuration" section on page 30).				



### **Investigating Module Alarm Conditions**

You can access details about alarm conditions that a module detects and reports to IL Manager. When a module is experiencing an alarm condition, IL Manager does the following:

- The Shelf View screen, which contains the installed module table, displays a table cell in color when the associated module is experiencing a minor (yellow) or major (red) alarm condition. A module experiencing both a minor and major alarm condition is indicated by a red cell on the Shelf View screen.
- The Module Status screen displays details about the alarm conditions. Sample alarm messages are as follows:
  - SFP Module Not Present
  - SFP Loss Of RX Signal
  - SFPTX Reported Fault

To display module alarm condition details, perform the following steps:

- 1. From the Home page menu bar, click **Shelf View**.
  - The Shelf View screen appears, displaying the chassis rear panel view and the chassis slot table, which highlights alarm conditions by displaying the Module Type cell in red or yellow for any module with an alarm condition.
- 2. From the chassis slot table, click the module model number in a red or yellow colored cell.
  - The selected module's Module Status screen appears, displaying the module's alarm conditions, current configuration, and optical status (if the module contains optics).

### Viewing a Module's Diagnostics Data and Operating Conditions

You can view a module's diagnostic information, which includes current operating conditions such as voltage and temperature levels, module runtime, and module data. The information that displays varies depending on the module type that you select.

Common information that displays includes the following:

- Serial Number—Serial number of the backplane or module.
- Software Revision—Revision level of the embedded software.
- Date of Manufacture—Date that backplane or module was manufactured.
- Hardware Revision—Revision level of the module assembly.
- Module Runtime—Amount of time in hours that power has been applied to the module.
- Part Number—Part number of the backplane or module.
- Firmware Revision Programmable Logic Device revision level and ID code.
- CLEI—Common Language Equipment Identification code, if applicable, which is an industry standard identifier used to identify telecommunications equipment.
- Temperature—Temperature detected by the module.
- Voltages—DC voltages detected by the module.

Additional operating information that can display depending on the selected device includes the following:

- Configuration mode setting
- Optical connection information
- Electrical connection information
- Channel information

To view a module's diagnostic information, perform the following steps:

- 1. From the Home page menu bar, click **Shelf View**.
  - The Shelf View screen appears, displaying the chassis rear panel view and the chassis slot table.
- 2. From the chassis slot table's Module Type column, click the model number of the desired module. The Module Status page appears.
- 3. From the menu bar, click Diagnostics.
  - The Diagnostics screen appears, displaying the module's data and current operating conditions.
- 4. (Optional) Click **Refetch Data from Module** to refresh the displayed information.

### Viewing and Modifying a Module Configuration

You can view and modify the configuration of a module that permits configuration changes.

**Note:** Modifying a module configuration requires either the Administrator or Power User privilege level.

To display a module's configuration, perform the following steps:

- 1. From the Home page menu bar, click **Shelf View**.
  - The Shelf View screen appears, displaying the chassis rear panel view and the chassis slot table.
- 2. From the chassis slot table, click the **Configuration** link (in the far right column) of the module configuration that you want to view.
  - The module's Configuration page appears, displaying its current configuration.
- 3. Modify the module configuration as needed.
- 4. Click one of the following:
  - **Submit**—Saves the displayed configuration information. The Setting Complete page appears, indicating that the configuration was successfully saved.
  - **Reload Page**—Ignores any modifications that you made and reloads the module's current configuration.

To save the configuration to a file, see the "Saving a Module Configuration to File" section on page 31.



### Saving a Module Configuration to File

You can save the current configuration of a module to a file to use as a backup or to configure another module of the same type.

To save a module configuration, perform the following steps:

- 1. From the Home page menu bar, click **Shelf View**.
  - The Shelf View screen appears, displaying the chassis rear panel view and the installed module table.
- 2. From the installed module table view, click the **Configuration** link (in the far right column) of the module configuration that you want to view.
  - The module Configuration page appears, displaying its current configuration.
- 3. From the menu bar, click **Save to File**.

Depending on browser type, do the following:

- Firefox—The Opening modulefilename.htm dialog window appears. From the window, choose **Save File**, then click OK. The file is saved to the Downloads folder.
- IE—The File Download dialog window appears. From this window, click Save to open the Save As dialog window. From this window, browse to the location where you want to save the file and click Save.

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# Proven Products, Unrivaled Service, and Great Support



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- 24x7x365 technical support available



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