

Remote Insight Lights-Out Edition II

User Guide

Part Number 232664-001

May 2002 (First Edition)

Product Version: Version 1.0

This guide explains the installation and setup procedures for the Compaq Remote Insight Lights-Out Edition II, as well as detailed information for optimizing and customizing the board for your requirements.

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About This Guide

This guide is designed to be used as step-by-step instructions for installation and as a reference for operation, and troubleshooting.

Intended Audience

This guide is intended for the end user, with basic knowledge of network protocols and understanding of network functionality.

Important Safety Information

Before installing this product, read the *Important Safety Information* document provided.

Symbols on Equipment

The following symbols may be placed on equipment to indicate the presence of potentially hazardous conditions:



WARNING: This symbol, in conjunction with any of the following symbols, indicates the presence of a potential hazard. The potential for injury exists if warnings are not observed. Consult your documentation for specific details.



This symbol indicates the presence of hazardous energy circuits or electric shock hazards. Refer all servicing to qualified personnel.

WARNING: To reduce the risk of injury from electric shock hazards, do not open this enclosure. Refer all maintenance, upgrades, and servicing to qualified personnel.



This symbol indicates the presence of electric shock hazards. The area contains no user or field serviceable parts. Do not open for any reason.

WARNING: To reduce the risk of injury from electric shock hazards, do not open this enclosure



This symbol on an RJ-45 receptacle indicates a network interface connection.

WARNING: To reduce the risk of electric shock, fire, or damage to the equipment, do not plug telephone or telecommunications connectors into this receptacle.



This symbol indicates the presence of a hot surface or hot component. If this surface is contacted, the potential for injury exists.

WARNING: To reduce the risk of injury from a hot component, allow the surface to cool before touching.



These symbols, on power supplies or systems, indicate that the equipment is supplied by multiple sources of power.

WARNING: To reduce the risk of injury from electric shock, remove all power cords to completely disconnect power from the system.



This symbol indicates that the component exceeds the recommended weight for one individual to handle safely.

Weight in kg
Weight in lb

WARNING: To reduce the risk of personal injury or damage to the equipment, observe local occupational health and safety requirements and guidelines for manual material handling.

Rack Stability



WARNING: To reduce the risk of personal injury or damage to the equipment, be sure that:

- The leveling jacks are extended to the floor.
 - The full weight of the rack rests on the leveling jacks.
 - The stabilizing feet are attached to the rack if it is a single-rack installation.
 - The racks are coupled together in multiple-rack installations.
 - Only one component is extended at a time. A rack may become unstable if more than one component is extended for any reason.
-

Symbols in Text

These symbols may be found in the text of this guide. They have the following meanings:



WARNING: Text set off in this manner indicates that failure to follow directions in the warning could result in bodily harm or loss of life.



CAUTION: Text set off in this manner indicates that failure to follow directions could result in damage to equipment or loss of information.

IMPORTANT: Text set off in this manner presents clarifying information or specific instructions.

NOTE: Text set off in this manner presents commentary, sidelights, or interesting points of information.

Text Conventions

This document uses the following conventions:

- *Italic type* indicates complete titles of manuals or variables. Variables include information that varies in system output, in command lines, and in command parameters in text.
- **Bold type** is used for emphasis of selected onscreen elements (menu options, command names, dialog box names, and so on) and keyboard keys.
- `Monospace typeface` indicates code examples, screen displays, and user input.

Getting Help

If you have a problem and have exhausted the information in this guide, you can get further information and other help in the following locations.

Compaq Technical Support

In North America, call the Compaq Technical Support Phone Center at 1-800-OK-COMPAQ. This service is available 24 hours a day, 7 days a week. For continuous quality improvement, calls may be recorded or monitored. Outside North America, call the nearest Compaq Technical Support Phone Center. Telephone numbers for worldwide Technical Support Centers are listed on the Compaq website at:

www.compaq.com

Be sure to have the following information available before you call Compaq:

- Technical support registration number (if applicable)
- Product serial number
- Product model name and number
- Applicable error messages
- Add-on boards or hardware

- Third-party hardware or software
- Operating system type and revision level

Compaq Website

The Compaq website has information on this product as well as the latest drivers and Flash ROM images. You can access the Compaq website by logging on to the Internet at:

www.compaq.com

Compaq Authorized Reseller

For the name of your nearest Compaq authorized reseller:

- In the United States, call 1-800-345-1518.
- In Canada, call 1-800-263-5868.
- Elsewhere, see the Compaq website for locations and telephone numbers.

Reader's Comments

Compaq welcomes your comments on this guide. Please send your comments and suggestions by email to ServerDocumentation@compaq.com.

Remote Insight Lights-Out Edition II Features

The Compaq Remote Insight Lights-Out Edition II (RILOE II) provides remote server manageability for Compaq *ProLiant*™ servers. It can be accessed from a network client using a standard Web browser and it provides keyboard, mouse, and video capability for a host server, regardless of the state of the host operating system or host server. New features for the RILOE II include a faster processor for increased performance, new user interface for easier browsing and Virtual CD for increased server manageability.

A built-in processor, memory, Network Interface Card (NIC), ROM, and standard external power supply make the RILOE II independent of the host server and its operating system. This design allows the RILOE II to provide remote access to any authorized network client, to send alerts, and to perform other management functions.

Using any standard Web browser, you can:

- Remotely access the console of the host server, including all text mode and graphics mode screens with full keyboard and mouse controls.
- Remotely power up, power down, or reboot the host server.
- Remotely boot a host server to a virtual floppy image, a 1.44-MB floppy or a CD from a client machine to perform a ROM upgrade or to install an operating system.
- Access the Compaq Insight Management agents on a host server through the RILOE II.
- Access advanced troubleshooting features provided by the RILOE II.

Features

The RILOE II offers the following features:

- Virtual Graphical Remote Console

The RILOE II provides embedded hardware graphical remote console capabilities that turn any standard browser into a virtual desktop, giving the user full control over the host server's display, keyboard, and mouse. The operating system independent console supports text and graphic modes, displaying remote host server activities, such as shutdown and startup operations.

- Virtual Devices

With the Virtual Floppy Drive and Virtual Media, an administrator can easily direct a host server to boot and use a standard 1.44-MB floppy diskette on a client machine, a CD on the client machine, or an image of the floppy or CD from anywhere on the network, thus saving time and increasing efficiency by eliminating the need to visit a host server just to insert and use a diskette or CD. This feature allows administrators to carry out any of the following functions remotely:

- Run Compaq User Diagnostics on remote host servers.
- Apply Compaq *ROMPaq*™ upgrades to remote servers.
- Deploy an operating system on remote servers from a CD or network drives.
- Perform disaster recovery of failed operating systems.

- Virtual Power Button

Using any standard browser interface, the RILOE II can be used to remotely operate a host server's power button. For example, if the host server is off, you can turn it on from a remote console. The virtual power button feature works on the ProLiant CL, DL, ML, 8000, 8500, and all Compaq *TaskSmart*™ servers.

- Power Cycle (Reset)

If the host server is not responding, this feature allows an administrator to initiate a cold reboot to bring the server back online. This feature is available on all ProLiant servers that the RILOE II supports.

- Remote Firmware Update

This feature ensures that the RILOE II is always up-to-date with the latest firmware available from Compaq. Updates to the ROM code on the RILOE II is accomplished through the browser interface, Remote Insight Board Command Language, and Compaq Lights-Out DOS Utility.

- Integration with Compaq Insight Management Suite

The RILOE II provides full integration with Compaq Insight Management Suite. This integration provides:

- Support for SNMP trap delivery to a *Compaq Insight Manager*™ 7 console
- Support for SNMP management

Compaq Insight Manager 7 is allowed to access the Insight Management Agents information through RILOE II.

- Management processor

Compaq Insight Manager 7 adds support for a new device type, the management processor. All RILOE II boards installed in servers on the network are discovered in Compaq Insight Manager 7 as management processors. The management processors are associated with the servers in which they are installed.

- Grouping of RILOE II boards

All RILOE II boards can be grouped together logically and displayed on one page. This capability provides one point access to RILOE II from within Compaq Insight Manager 7.

— Application launch task

In Compaq Insight Manager 7 an application launch task can be set up to start the Group Administration Utility on all the RILOE II boards listed on the device query page. The application launch can be executed on demand or scheduled to run automatically at a certain date and time.

- Dedicated LAN network connectivity

A 10/100-Mbps Ethernet connection on the RILOE II provides administrators with a dedicated network connection to the RILOE II. The board provides notification of server problems on a real-time basis without separate telephone connections or modem sharing devices. The NIC can autoselect speeds between 10 Mbps and 100 Mbps.

- Dial-up support

The RILOE II supports dial-up access when using a modem router or external Remote Access Service (RAS) connection to log on to the network.

- Browser accessibility

The RILOE II is fully accessible by means of Microsoft Internet Explorer 5.0 or later, Netscape Navigator 6.01, or any other Java 1.1 or later compliant browser software. This capability allows easy access to the features of the RILOE II, giving administrators full control of the host server's display, keyboard, and mouse, regardless of the state of the host server or operating system. Using a familiar Web browser interface, administrators can easily perform all remote management tasks.

- Reset and failure sequence replay

Video text sequences stored on the RILOE II allows an administrator to replay server startup and shutdown sequences. You can view the last two server resets and the last server failure. These sequences include all system and operating system error messages and fatal error screens.

- SNMP alerts from the RILOE II to a management console

RILOE II can forward certain server alerts, such as SNMP alerts and unauthorized access alerts, to a standard management console.

- User administration and security

The RILOE II supports up to 25 users with customizable access rights, login names, client IP address restrictions, and advanced password encryption. A user can have supervisor status with the ability to create, modify, or delete other users. Users with status other than supervisor can be denied access to the RILOE II login, to the server's Remote Console, and to the remote reboot features of the RILOE II.

The RILOE II provides secure password encryption, tracking all login attempts and maintaining a record of all login failures. When login attempts fail, the board also generates alerts and sends them to a remote management console. The RILOE II also provides the following security features:

The RILOE II provides strong security for remote management in distributed IT environments by using industry-standard Secure Sockets Layer (SSL) encryption of HTTP data transmitted across the network. SSL encryption (up to 128-bits) ensures that the HTTP information is secure as it travels across the network.

SSL is a network protocol layer, located directly under the application layer, with responsibility for the management of a secure (encrypted) communication channel between the client and server.

- Optional lockout capability for remote console port
- User actions logged in Remote Insight Event Log
- Progressive delays for failed login attempts
- 128-bit encryption

- External power

An external power connector provides continuous power to the RILOE II, allowing continuous access to the host server, even when there is a host server power failure or the server has been turned off.

- Auto configuration of IP address by means of DNS/DHCP

The RILOE II provides automatic network configuration and can be used straight out of the box. The board comes with a default name and Dynamic Host Configuration Protocol (DHCP) client that leases an IP address from the DHCP server on the network. For systems that do not use Domain Name Service (DNS)/DHCP, the RILOE II allows static IP configuration.

The default user name, password, and DNS name are:

- User name: Administrator
- Password: The last eight digits of the serial number
- DNS name: RIBXXXXXXXXXXXX where the 12 Xs are the Medium Access Control (MAC) address of the RILOE II

IMPORTANT: User names and passwords are case sensitive.

- Survey

Using a supported browser you can view the Compaq survey configuration file, which provides the latest host server configuration information to assist in the diagnostic process. Survey is supported on Windows NT, Windows 2000, Windows XP and NetWare.

- Integrated Management Log

The RILOE II maintains a copy of the host server's Integrated Management log that can be accessed using a standard browser, even when the host server is not operational. This capability can be helpful when troubleshooting host server problems.

- ROM-Based Configuration Setup Utility F8

This versatile, system-independent ROM-Based Configuration Utility enables fast and easy setup of the RILOE II.

- Pocket PC Access

The RILOE II provides support for wireless and dial-up access from the Compaq *iPAQ*™ H3600 Series Pocket PC handheld devices. The RILOE II provides a special user interface when connecting from the Compaq iPAQ Pocket PC.

- Group Administration

Compaq Remote Insight Configuration Language can be used for writing group administration procedural scripts for the Compaq RILOE II. Remote Insight Configuration Language uses Extensible Markup Language (XML). Detailed instructions and a sample file on how to write a user configuration script are available in this user guide. Group administration for the RILOE II can be done using Compaq Insight Manager 7 or batch processing.

- EMS Console

The Microsoft Emergency Management Service console provides a text based screen to access the host server. The Emergency Management Service console option will be available on future Compaq ProLiant server using Windows .NET Server.

Supported Hardware and Software

The RILOE II can be used in Compaq ProLiant servers. For a detailed list of servers that are supported refer to Table 2-1 in chapter 2 or visit the compaq website at:

www.compaq.com/lights-out

You can use the RILOE II with the following network operating systems:

- Microsoft
 - Windows NT 4.0 Server
 - Windows 2000 Server
 - Windows 2000 Advanced Server
 - Windows 2000 Datacenter (Compaq certified versions only)
 - Windows .NET Server
- Novell
 - NetWare 5.1
 - NetWare 6.0
- Linux
 - Red Hat 7.0
 - Red Hat 7.1
 - Red Hat 64
 - SuSE 7.0

RILOE II Kit Contents

The RILOE II kit contains the items shown in Figure 1-1.

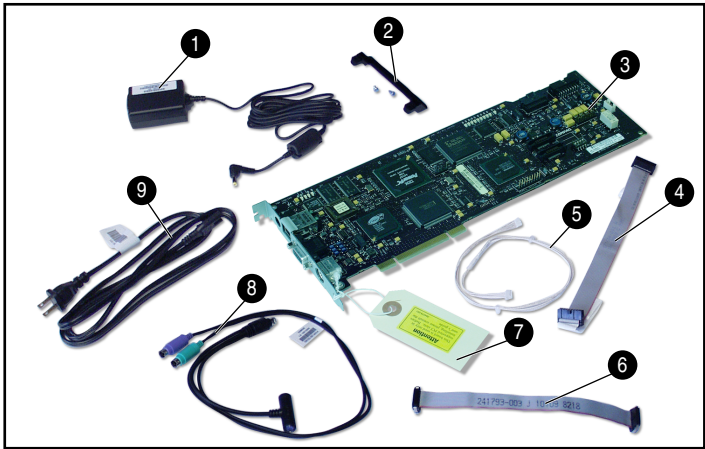


Figure 1-1: Contents of the RILOE II kit

Table 1-1: Contents of the RILOE II

Item	Description	Item	Description
①	AC power adapter	⑥	Remote Insight cable (30-pin)
②	PCI extender bracket	⑦	Network settings tag
③	RILOE II	⑧	Keyboard/mouse adapter cable
④	Remote Insight cable (16-pin)	⑨	Power cord
⑤	Virtual power button cable (4-pin)	⑩	System documentation and support software CDs (not shown)

Operation Overview

During normal operation, the RILOE II passes the keyboard and mouse signals to the server and functions as the server's primary video controller. This configuration allows the following operations to occur:

- Transparently substitute a remote keyboard and mouse for the server's keyboard and mouse.
- Save video captures in the RILOE II memory for later replay.
- Simultaneously send video to the server's monitor and to a Remote Console monitor.

Figure 1-2 shows how the RILOE II connects to the host server, peripheral devices, the power source, and the local area network (LAN) for servers that use the keyboard/mouse adapter cable.

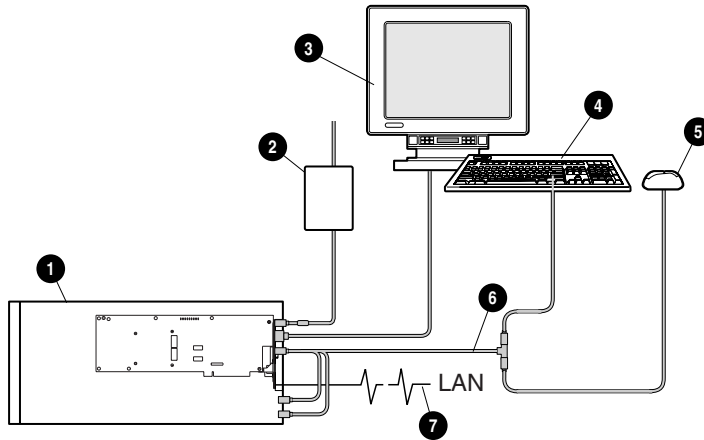


Figure 1-2: RILOE II system using the keyboard/mouse adapter cable

Table 1-2: RILOE II System Using the Keyboard/Mouse Cable

Item	Description
①	RILOE II installed in a server
②	AC adapter connected to the RILOE II
③	Monitor connected to the RILOE II
④	Keyboard connected to the RILOE II keyboard/mouse adapter cable
⑤	Mouse connected to the RILOE II keyboard/mouse adapter cable
⑥	Keyboard/mouse adapter cable
⑦	LAN connected to the RILOE II

Figure 1-3 shows how the RILOE II connects to the host server, peripheral devices, the power source, and the LAN for servers that use the remote insight cable.

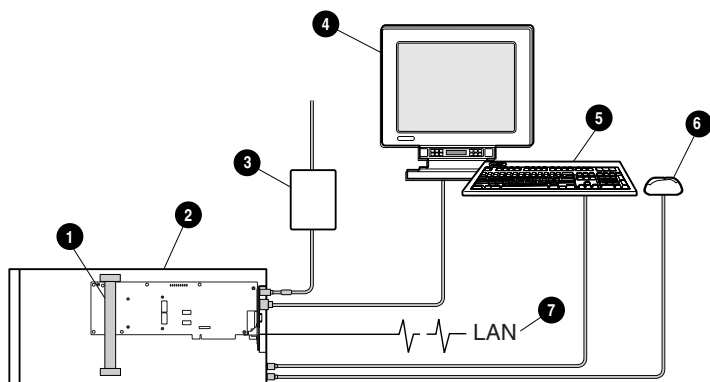


Figure 1-3: RILOE II system using the remote insight cable

Table 1-3: RILOE II System Using the Remote insight Cable

Item	Description
①	Remote Insight cable
②	RILOE II installed in a server
③	AC adapter connected to the RILOE II
④	Monitor connected to the RILOE II
⑤	Keyboard connected to the RILOE II
⑥	Mouse connected to the RILOE II
⑦	LAN connected to the RILOE II

Installing the RILOE II

The following sections guide you through the process of installing a RILOE II in your server:

- Preparing to Install the RILOE II
- Disassembling the Server
- Determining an Available Slot
- Installing the RILOE II in the Server
- Installing the Virtual Power Button Cable
- Installing the Remote Insight Internal Cable
- Reassembling the Server
- Connecting External Cables to the RILOE II



WARNING: Some Compaq ProLiant servers are capable of producing energy levels that are considered hazardous. Do not remove enclosures or bypass the interlocks provided to protect against these hazardous conditions. Installation of accessories and options in areas other than front hot-plug bays should be performed by individuals who are both qualified in the servicing of computer equipment and trained in the hazards associated with products capable of producing hazardous energy levels. Refer to the documentation provided with the server for additional information on installing options in the server.

Preparing to Install the RILOE II

The RILOE II is server slot specific. Before installing the RILOE II, ensure that you have the documentation provided with your server, the correct parts needed to install the board, and the correct cables for your server.

Replacing a Remote Insight Lights-Out Edition with a RILOE II

If you are replacing a Remote Insight Lights-Out Edition (RILOE) with a RILOE II you need to remove the RILOE health driver before installing the RILOE II in the server.

Installing the PCI Extender Bracket

If you are installing the RILOE II in a shared EISA/PCI slot, attach the PCI extender bracket to the board before installing the board in the server. This bracket is not needed when installing the board in PCI-only slots.



CAUTION: The screws shown in Figure 2-1 are self-tapping and some amount of force is required for installation. Caution is required to prevent damage to the RILOE II.

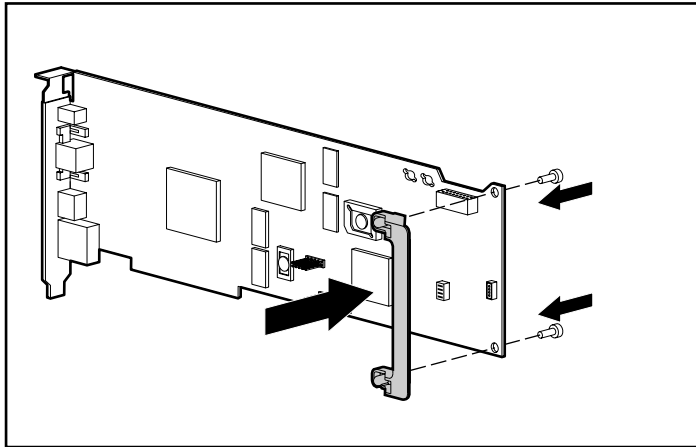


Figure 2-1: Installing the PCI board extender bracket

To install the PCI board extender bracket:

1. Hold the board so the side connector bracket is to your left and the board edge connector is down, as shown in Figure 2-1.
2. Align the extender so that the screw holes line up with the holes at the right edge of the board. The extender should extend out past the right edge of the board. Insert the screws from the bottom side of the board and tighten.

Disassembling the Server

Follow the directions in your server documentation for disassembling the server to install an option board.

IMPORTANT: If you are installing the RILOE II in a server that was previously configured with a Remote Insight Lights-Out Edition (RILOE) you must remove the RILOE health driver prior to installing the RILOE II.

Determining an Available Slot

The RILOE II is server slot specific before installing the RILOE II, refer to Table 2-1 to select an unused PCI slot, the cables used, and the video switch settings for your server. If your server is not listed in Table 2-1, an updated version of this table is available on the Compaq website:

www.compaq.com/lights-out

Your server should have the latest system ROM revision that is available for your server. For instructions on updating the system ROM of your server, refer to your server's documentation. To download the latest ROMPaq upgrade for your server, go to the Compaq website:

www.compaq.com/support/files

Table 2-1: Server PCI Slot and Cable Matrix

Servers	PCI Slot	Remote Insight Internal Cable	AC Adapter	Keyboard Mouse Adapter Cable	Disable Onboard Video Using the Dip Switch
ProLiant CL380 1 GHz	2, 3, 4	A	Y	Y	
ProLiant DL320	1	B	N	N	
ProLiant DL360	1	C	N	N	
ProLiant DL360 G2	1	G	N	N	
ProLiant DL380	1	A	Y	Y	
ProLiant DL380 G2	1	G	N	N	
ProLiant DL580	6	A	Y	Y	
ProLiant DL760	7, 8, 9	D	Y	N	
ProLiant ML330 866 MHz	4, 5	B	Y	N	Y
ProLiant ML330 1 Ghz	5	G	N	N	Y
ProLiant ML330e	4,5	B	N	N	Y
ProLiant ML350 733 MHz	4, 5, 6	A	N	N	Y
ProLiant ML350 1 GHz	6, 7	B	N	N	Y
ProLiant ML350 1.2 GHz	6	G	N	N	Y
ProLiant ML370	1, 2	A	Y	Y	
ProLiant ML370 G2	3, 4, 5, 6	G	N	N	
ProLiant ML530	1	A	Y	Y	
ProLiant ML570	6	A	Y	Y	
ProLiant ML750	1, 2, 3, 4	E	Y	Y	
ProLiant 7000 Xeon 500 MHz	3, 4, 5, 6		Y	Y	

continued

Table 2-1: Server PCI Slot and Cable Matrix *continued*

Servers	PCI Slot	Remote Insight Internal Cable	AC Adapter	Keyboard Mouse Adapter Cable	Disable Onboard Video Using the Dip Switch
ProLiant 8000 Xeon	1, 2, 3, 4	E	Y	Y	
ProLiant 8500 Xeon (servers shipped with 550 MHz processors with configuration codes CL61, CL64, BX71, or BX72)	7, 8, 9	D	Y	Y	
ProLiant 8500 Xeon (server shipped with 700 MHz and higher processors)	7, 8, 9	A	Y	Y	

Note: Virtual power button cables and remote insight internal cable description and part numbers

A = P/N 160011-001 (4-pin cable) ships with RILOE II kit.

B = P/N 177634-001 (16-pin cable) ships with the RILOE II kit.

C = P/N 177634-002 (16-pin cable) ships with ProLiant DL 360 servers.

D = P/N 195254-B21 (split 4-pin cable) available as a spare kit P/N 195724-001.

E = P/N 162816-001 (split 4-pin cable) available as a spare kit P/N 166655-001.

F = P/N 233763-001 (split 16- to 30-pin cable) ships with the DL380 G2 server.

G = P/N 241793-010 (30-pin cable) ships with RILOE II kit.

Installing the RILOE II in the Server



CAUTION: Electrostatic discharge (ESD) can damage electronic components. Be sure you are properly grounded before beginning this procedure. See Appendix B for ESD information.

IMPORTANT: If you are installing the RILOE II in a server that was previously configured with a Remote Insight Lights-Out Edition (RILOE) you must remove the RILOE health driver prior to installing the RILOE II.

Follow these steps to install the RILOE II in the server:

1. Refer to Table 2-1 and select an available supported slot.
2. Loosen the retaining screw and remove the slot cover. If the RILOE II is being installed into a hot-plug slot, release the slot lever and then remove the slot cover.
3. Press the RILOE II firmly into the slot.
4. Secure the board in place with the retaining screw, or close the hot-plug slot lever, as appropriate.
5. Some servers may require the onboard video to be disabled. See Table 2-1 for details on your server.

Installing Virtual Power Button Cable P/N 160011-001

For Compaq servers that use a four-pin connector on the server system board use the cable (Compaq part number 160011-001) to enable the virtual power button feature of the RILOE II. This cable has a keyed four-pin connector on one end, four wires connecting the two ends, and a keyed four-pin connector on the other end.

NOTE: For a list of servers that use this cable see Table 2-1.

To install the virtual power button cable:

1. Power down your server and disconnect all power cords to remove the power from the server.
2. Connect the four-pin connector on the cable to the virtual power button cable connector on the RILOE II. This is a four-pin connector located on the rear of the RILOE II next to the PCI extender bracket.
3. Connect the four-pin connector on the other end of the cable into the four-pin connector on the server system board.

IMPORTANT: Make sure that you do not connect the 4-pin virtual power button cable to the speaker connection on the server system board.

NOTE: For detailed instructions on the location of the four-pin connector on the server system board, refer to the documentation provided with your server.

Installing Remote Insight Internal Cable P/N 177634-001

NOTE: For a list of servers that use this cable see Table 2-1.

To install the remote insight internal cable:

1. Power down your server and disconnect all power cords to remove the power from the server.
2. Connect the 16-pin connector on the remote insight internal cable to the 16-pin remote insight connector on the RILOE II. This is located on the edge of the board.
3. Connect the 16-pin connector on the other end of the remote insight internal cable to the 16-pin remote insight connector on the server system board.

NOTE: For detailed instructions on the location of the 16-pin remote insight connector on the server system board, refer to the documentation provided with your server.

Installing Remote Insight Internal Cable P/N 241793-010

NOTE: For a list of servers that use this cable see Table 2-1.

To install the remote insight internal cable:

1. Power down your server and disconnect all power cords to remove the power from the server.
2. Connect the 30-pin connector on the remote insight internal cable to the 30-pin remote insight connector on the RILOE II. This is located on the edge of the board.
3. Connect the 30-pin connector on the other end of the remote insight internal cable to the 30-pin remote insight connector on the server system board.

NOTE: For detailed instructions on the location of the 30-pin remote insight connector on the server system board, refer to the documentation provided with your server.

Reassembling the Server

Follow the directions in your server documentation to reassemble the server.

Connecting External Cables to the RILOE II

After you have installed the Compaq RILOE II in your server, you must make external cable connections. The connectors on the RILOE II are shown in Table 2-2.

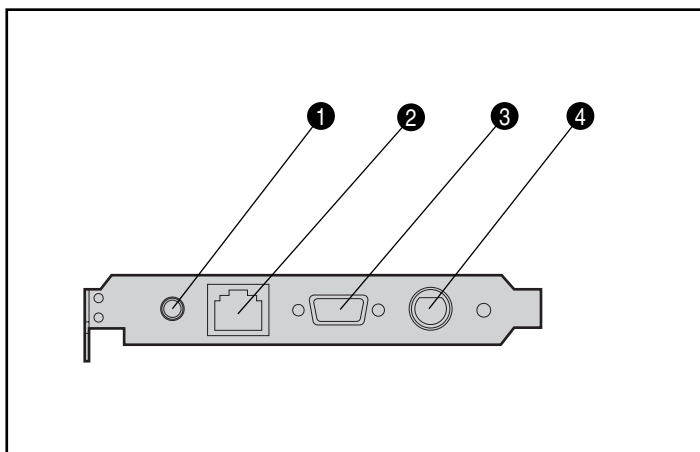


Figure 2-2: RILOE II connectors

Table 2-2: RILOE II Connectors

Item	Connector
①	AC adapter connector
②	LAN connector
③	Video connector
④	Keyboard/mouse connector

Keyboard/Mouse Adapter Cable Connection

To provide remote keyboard and mouse control, the keyboard and mouse signals must pass through the RILOE II. This allows the RILOE II to send keystrokes from the remote user to the server through the keyboard cable.

NOTE: Some servers use a remote insight internal cable for keyboard and mouse and do not require you to use the keyboard/mouse adapter cable. Refer to Table 2-1 to see if your server requires the keyboard/mouse cable.

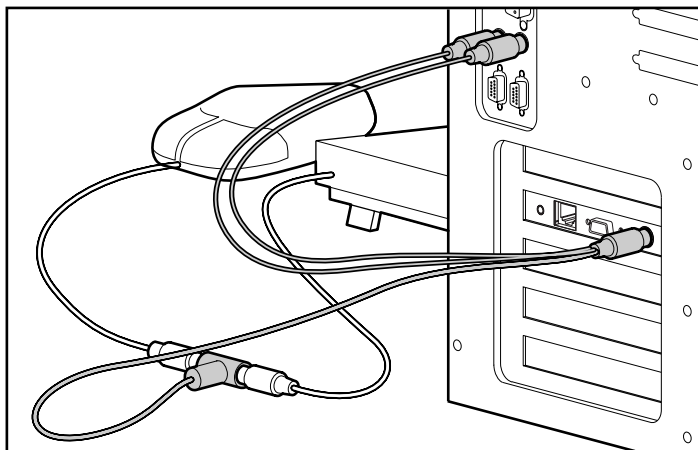


Figure 2-3: Connecting the keyboard/mouse adapter cable

Follow these steps to connect the keyboard/mouse adapter cable for servers that require this cable:

NOTE: For headless server deployment, you do not have to connect the physical keyboard and mouse devices to the server. However, to have remote keyboard and mouse capabilities, you must use either the keyboard/mouse adapter cable provided with the RILOE II or the 16-pin remote insight internal cable, or 30-pin remote insight internal cable.

1. Disconnect the keyboard and mouse cables from your server.
2. Connect the keyboard and mouse cables to the color-coded T-shaped keyboard/mouse connector of the RILOE II keyboard/ mouse adapter cable as shown in Figure 2-3.

3. Connect the color-coded plugs of the keyboard mouse adapter cable to the keyboard and mouse connectors of your server.
4. Connect the black plug of the keyboard/mouse adapter cable to the keyboard/mouse connector of the RILOE II.

Monitor Cable Connection

The RILOE II contains its own VGA controller to ensure that a compatible controller is available for remote console operation. To use a monitor in a server that has the RILOE II installed, connect the monitor to the RILOE II video connector.

IMPORTANT: Some servers require the onboard video to be disabled for the RILOE II to work properly. Refer to Table 2-1 for a list of servers that require the Onboard video to be disabled. For instructions on disabling the onboard video, refer to the documentation provided with the server.

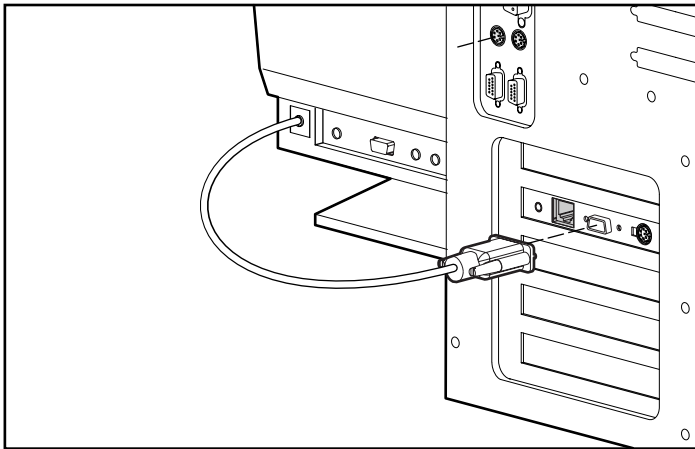


Figure 2-4: Connecting the monitor cable

Follow these steps to connect the monitor signal cable:

NOTE: For headless server deployment, you do not have to connect a monitor to the server or to the RILOE II video connector.

1. Disconnect the monitor signal cable from the server monitor connector.
2. Connect the monitor signal cable to the video connector on the RILOE II.

LAN Cable Connection

To access the RILOE II using TCP/IP across a 10 MB or 100 MB Ethernet network, connect the LAN cable from the LAN connector on the RILOE II to the LAN jack of a network hub or network switch.

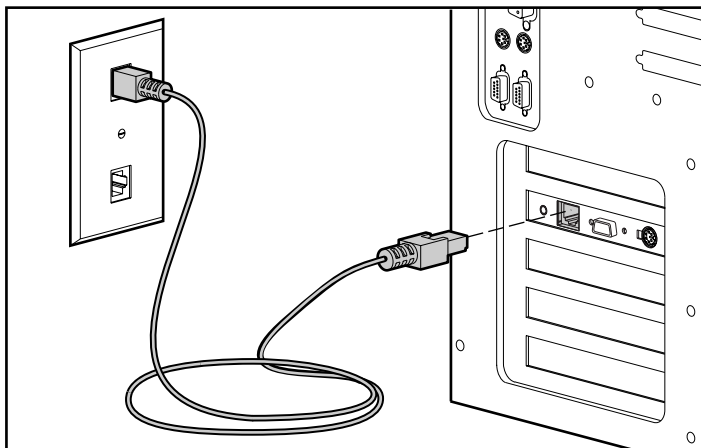


Figure 2-5: Connecting the LAN cable

The green LED indicator close to the A/C adapter connector indicates the speed of the connection. If the LED Indicator is on then the connection is 100 Mb, if it is off then the connection is 10 Mb.

The green LED indicator close to the video connector indicates a link, if it is on then a link is established.

AC Power Adapter Connection

The RILOE II is equipped with an external power supply to provide auxiliary power to the RILOE II. With the AC power adapter connected the RILOE II will have power independent from the servers power enabling you to access alerts, from the server, regardless of the power state of the server. To increase server manageability, Compaq recommends connecting the AC power adapter to a separate power circuit than the server. Connect the AC power adapter cable as shown in Figure 2-6.

IMPORTANT: Compaq recommends using the AC power adapter cable. The AC power adapter is a feature intended to provide power to the RILOE II if the server loses power. Compaq ProLiant CL, DL, and ML servers that use the 16-pin/30-pin insight internal cable do not require you to use the AC power adapter.

IMPORTANT: The Compaq ProLiant ML330 server requires the installation of the power adapter, included in the RILOE II kit. For detailed information refer to the documentation provided with your server.

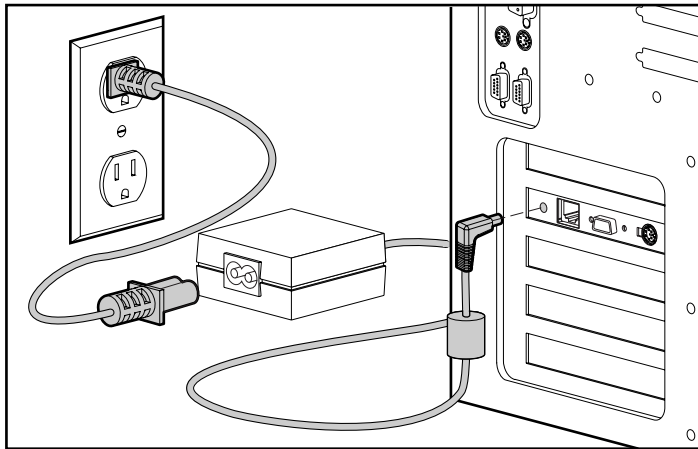


Figure 2-6: Connecting the AC power adapter cable

Server Power Cable Connection

After you have connected the cables you will use with the RILOE II, connect the power cord to the server and power up the server by following these steps:

1. Plug the AC main power cord into the server, then into a grounded AC outlet.



WARNING: To reduce the risk of electric shock or damage to the equipment:

- Do not disable the power cord grounding plug. The grounding plug is an important safety feature.
 - Plug the power cord into a grounded (earthed) electrical outlet that is easily accessible at all times.
 - Disconnect power from the server by unplugging the power cord from either the electrical outlet or the server's AC input.
-

2. Turn on any peripheral devices attached to the server.
3. Turn on the server.

RILOE II Configuration Parameters

This chapter describes the RILOE II configuration parameters. Each of the parameters discussed in this chapter is listed in Table 3-1. You can record your settings in the “Your Value” column of the table.

Table 3-1: RILOE II Configuration Parameters

Parameters	Default Value or Setting	Your Value
User Settings		
User Name		
Login Name		
Password		
Enforced Client IP Address	None, IP Address, IP Range, or DNS Name	
Supervisor Access	No	
Login Access	Yes	
Remote Console Access	Yes	
Remote Server Reset and Power Button Access	Yes	

continued

Table 3-1: RILOE II Configuration Parameters *continued*

Parameters	Default Value or Setting	Your Value
Global Settings		
Session Timeout (minutes)	15	
ROM Configuration Utility (F8)	Enabled	
Remote Access with Pocket PC	Disabled	
Host Keyboard	Disabled	
SNMP Trap Destination	You can enter up to 3 IP addresses	
Forward Host OS Generated SNMP Traps	No	
Forward Compaq Remote Insight Board Alerts	No	
Reply to HTTP Identification Request	Yes	
Level of Data Returned	None (No Response to Request)	
Remote Insight HTTP Port	80	
Remote Insight Remote Console Port	23	
Network Settings		
Transceiver Speed Autoselect	Yes	
Speed		
Duplex		

continued

Table 3-1: RILOE II Configuration Parameters *continued*

Parameters	Default Value or Setting	Your Value
Enable DHCP	Yes	
Use DHCP Supplied Gateway	Yes	
Use DHCP Supplied DNS Servers	Yes	
Use DHCP Supplied WINS Servers	Yes	
Use DHCP Supplied Static Routes	Yes	
IP Address	0.0.0.0	
Gateway IP Address	0.0.0.0	
Subnet Mask	255.255.255.0	
DNS Name	RIBXXXXXXXXXXXX, where the 12 Xs are the MAC address (assigned at the factory)	
Domain Name		
DHCP Server	0.0.0.0	NA
Primary DNS Server	0.0.0.0	
Secondary DNS Server	0.0.0.0	
Tertiary DNS Server	0.0.0.0	
Primary WINS Server	0.0.0.0	

continued

Table 3-1: RILOE II Configuration Parameters *continued*

Parameters	Default Value or Setting	Your Value
Secondary WINS Server	0.0.0.0	
Static Routes #1(destination, gateway)	0.0.0.0, 0.0.0.0	
Static Routes #2(destination, gateway)	0.0.0.0, 0.0.0.0	
Static Routes #3(destination, gateway)	0.0.0.0, 0.0.0.0	
Server IP Address (Compaq Management agents)	http://_____:2301	

User Settings

The User Settings screen allows maintain users access to the RILOE II. Up to 25 users can be specified. User configurations can be added, deleted, or modified by using the Web interface.

- **User Name**—This parameter is the user's real name as it is to display in the user list and event log. It is not the name used to log in. The maximum length of the user name is 48 characters.
- **Login Name**—This is a case-sensitive name that the user must provide to log in to the RILOE II.
- **Password**—This is a case-sensitive password that the user must provide to log in to the RILOE II. The password must be at least 8 characters long and up to a maximum of 40 characters. You must enter the password twice for verification.
- **Enforced Client IP Address**—The default setting is none. You can change this setting by assigning a specific IP address, an IP address range, or a DNS name. Client logon attempts that do not meet the specified requirements will be rejected.

- **Supervisor Access**—If you set a user to supervisor mode, the login access, remote console access, and remote server reset access rights are automatically set to On. If you turn off any access right, the supervisor status is automatically turned off.

A user with supervisor status can remotely add, delete, and modify the configurations of other Remote Insight users.

- **Login Access**—Users who have login access turned off may still receive alerts on a Compaq Insight Manager console if you enable the alerts features. Login access can be used to create a user who is a service provider and who will receive alerts from the board but does not have login access to the RILOE II. If a user is in supervisor mode, you cannot turn off the user's login access.
- **Remote Console Access**—Users may have login access, but no access to the remote host server console. If the user is in supervisor mode, you cannot turn off the user's Remote Console access.
- **Remote Server Reset and Power Button Access**—Users may have login access, but no access to remote server reset. If the user is in supervisor mode, you cannot turn off the user's remote server reset access.

Global Settings

- **Session Timeout (Minutes)**—This option controls how long a session can remain inactive before the Remote Insight Board will force the user to login again.
- **ROM Configuration Utility**—This toggles the use of the **F8** key, during POST, to access the Remote Insight ROM Configuration Utility.
- **Remote Access with Pocket PC**—This feature allows you to access the RILOE II from a Pocket PC.
- **Host Keyboard**—This feature allows you to enable or disable the host keyboard.
- **SNMP Trap Destination**—This field allows you to enter up to three IP addresses to send SNMP traps to.

- **Forward Host OS Generated SNMP Traps**—These alerts are generated by the Insight Management agents provided for each supported network operating system. The agents must be installed on the host server to receive these alerts. These alerts are sent to Compaq Insight Manager 7 clients on the network and are forwarded asynchronously by the RILOE II to users that have been configured to receive them. The default for this field is No.
- **Forward Compaq Remote Insight Board Alerts**—These alert conditions are detected by Remote Insight and are independent of the host server operating system. These alerts can be Insight Manager SNMP traps or pager alerts. These alerts include major events such as remote server power outages or server resets. They also include RILOE II events, such as a disconnected keyboard cable or a failed login attempt. The alerts are forwarded by the RILOE II to a Compaq Insight Manager console. The default for this field is No.
- **Reply to HTTP Identification Request**—This allows Compaq Insight Manager 7 to access data about the RILOE II. The level of information sent is configured using the Level of Data Returned field.
- **Level Of Data Returned**—This allows you to select the amount of data that is returned to a HTTP identification request from Compaq Insight Manager 7.
- **Remote Insight HTTP Port**—The RILOE II HTTP port will use the standard port 80 setting. This setting can be changed by means of the Web interface as required by your environment.
- **Remote Insight Remote Console Port**—The RILOE II Remote Console port uses the default setting of 23. This setting can be changed by means of the Web interface as required by your environment.

Network Settings

- **Transceiver Speed Autoselect**—Autoselect detects the interface speed and sets the interface to operate at 10 Mbps or 100 Mbps and at half or full duplex. If necessary, this parameter can be set to manual to allow manual adjustment of speed and duplex settings.
- **Speed**—Use this setting to assign 10 Mbps or 100 Mbps connect speeds if the Transceiver Speed Autoselect is not enabled.

- **Duplex**—Use this setting to assign half or full duplex to the NIC if the Transceiver Speed Autoselect is not enabled.
- **Enable DHCP**—The RILOE II comes preset from Compaq with DHCP enabled. To disable DHCP, you can use the ROM-based setup utility **F8**, a supported browser, or an XML script. Refer to Chapter 4 for setup instructions.

NOTE: If you disable DHCP, you will have to manually set up the IP address and the subnet mask using the ROM-based setup utility **F8**.

If DHCP is enabled, the settings **Use DHCP Supplied Gateway**, **Use DHCP Supplied DNS Servers**, **Use DHCP Supplied WINS Servers**, and **Use DHCP Supplied Static Routes** are also enabled. If DHCP has been disabled, these settings may have to be assigned.

- **Use DHCP Supplied Gateway**—With this setting enabled the RILOE II will automatically use the DHCP address assigned by the DHCP server.
- **Use DHCP Supplied DNS Servers**—With this setting enabled the RILOE II will automatically use the DHCP address assigned by the DHCP server.
- **Use DHCP Supplied WINS Servers**—With this setting enabled the RILOE II will automatically use the DHCP address assigned by the DHCP server.
- **Use DHCP Supplied Static Routes**—With this setting enabled the RILOE II will automatically use the DHCP address assigned by the DHCP server.
- **IP Address**—When you use the RILOE II NIC, use this parameter to assign a static IP address on your network to the Remote Insight NIC. The default value is 0.0.0.0. This procedure is only necessary if DHCP is not being used.
- **Gateway IP Address**—Use the default gateway parameter to assign the IP address of the network router that connects the Remote Insight subnet to another subnet where the management PC resides. The default value is 0.0.0.0. This field may be filled in if DHCP is enabled.
- **Subnet Mask**—Use the subnet mask parameter to assign the subnet mask for the default gateway. The default value is 255.255.255.0. This field may be filled in if DHCP is enabled.

- **DNS Name**—The RILOE II comes preset with a DNS name. The DNS name is RIB plus the MAC address of the RILOE II. To find the MAC address, look for a sticker on the RILOE II. This name also is displayed on the tag attached to the bracket of the RILOE II. After logging on you can change the name to anything meaningful to you for identification purposes. The name can consist of any combination of numbers or letters.
- **Domain Name**—Enter the name of the domain that the RILOE II will participate in.
- **DHCP Server**—Enter the DHCP server address.
- **Primary DNS Server**—Use this parameter to assign a unique DNS server IP address on your network. The default value is 0.0.0.0.
- **Secondary DNS Server**—Use this parameter to assign a unique DNS server IP address on your network. The default value is 0.0.0.0.
- **Tertiary DNS Server**—Use this parameter to assign a unique DNS server IP address on your network. The default value is 0.0.0.0.
- **Primary WINS Server**—Use this parameter to assign a unique WINS server IP address on your network. The default value is 0.0.0.0.
- **Secondary WINS Server**—Use this parameter to assign a unique WINS server IP address on your network. The default value is 0.0.0.0.
- **Static Routes #1, #2, #3 (destination, gateway)**—Use this parameter to assign a unique Static Route destination and gateway IP address on your network. The default IP values are 0.0.0.0 and 0.0.0.0. The first IP address corresponds to the destination IP, and the second IP address corresponds to the gateway IP.
- **Server IP Address (Compaq Management Agents)**—Use this setting to specify the IP address for the Web agents that the RILOE II will be configured to use.

Configuring the RILOE II

After you have installed the RILOE II in your server, as instructed in Chapter 2, and have made all necessary peripheral connections, you must configure the RILOE II. This section provides basic setup, configuration, optimized performance settings, recommended server settings, and driver installation instructions.

Configuring the RILOE II

The RILOE II offers two configuration options:

- Remote Setup

You can use remote setup to configure the RILOE II from a remote client system after installing the RILOE II in a host server.

- ROM-Based Setup Utility F8

ROM-Based Setup Utility F8 is used to set up the RILOE II during server boot up. The ROM-Based Setup Utility is useful for setting up servers that do not use DNS/DHCP. The ROM-Based Setup Utility is available every time the server is booted and may be run remotely using the RILOE II Remote Console.

- *SmartStart*[™] Setup

You can use SmartStart for Servers to configure RILOE II in an existing server or a newly deployed server. Installation and setup are done at the host server using SmartStart for Servers.

NOTE: Some Compaq servers contain DIP switches on the system board to control certain security settings. Before beginning configuration, if the server is equipped with a Configuration Lock Switch, set this switch to off (unlocked). See the documentation or hood labels that shipped with the server for more information about the Configuration Lock Switch. When configuration is complete, return the switch to the on (locked) position.

Regardless of the configuration method used, be aware of the configuration parameters that are involved. Use Chapter 3 to determine what parameters you need to set up the board. Leave parameters set to their default values unless you know that they should be changed for your environment. Before starting ROM-Based Setup Utility F8 record the values for your installation on the Table 3-1 in Chapter 3.

Remote Setup

Remote setup allows you to configure the RILOE II from a remote client machine over the network.

1. Using a standard Web browser, access the RILOE II from a remote network client, providing the default DNS name, user name, and password on the Network settings tag supplied with the board.
2. When you successfully log on to the RILOE II, you will be able to change the default values of the network, and user, settings through the Web browser interface of the RILOE II. You will also be able to install operating system drivers and Insight Manager agents on the remote host server using the graphical Remote Console.

ROM-Based Setup Utility F8

ROM-Based Setup Utility F8 is used to set up the RILOE II during server boot up. The ROM-Based Setup Utility is a feature of the RILOE II.

1. Restart or power up the server.
2. Press the **F8** key to enter the ROM-Based Setup Utility when the cursor flashes and the RILOE II prompt displays on the screen.
3. Make and save any necessary changes to the RILOE II.
4. Exit the ROM-Based Setup Utility when finished.

Disabling DNS/DHCP

Compaq recommends using DNS/DHCP with the RILOE II to simplify installation. In the event that DNS/DHCP cannot be used, use the following procedure to disable DNS/DHCP and to configure the IP address and the subnet mask:

1. Restart or power up the server.
2. Press the **F8** key to enter the ROM-Based Setup Utility when the cursor flashes and the RILOE II prompt displays on the screen.

NOTE: Use the arrow keys to highlight selections.

3. Select **Network, DNS/DHCP**, and press the **Enter** key. The **Network Autoconfiguration** screen will open.
4. Select **DHCP Enable** and press the spacebar to turn off DHCP. Ensure that DHCP Enable is set to off and press the **F10** key to save the changes.

NOTE: It will take a few minutes for the board to save the network changes and to reset.

5. Select **Network, NIC and TCP/IP**, and press the **Enter** key. The **Network Configuration** screen will open.
6. Select the **IP Address** field, delete the address in the field, and type the IP address.
7. Select the **Subnet Mask** field, delete the address in the field, and type the subnet mask.
8. Press the **F10** key to save the changes.

NOTE: It will take a few seconds for the board to save the network changes and to reset.

9. To exit the ROM-Based Setup Utility, select **File, Exit**, and press the **Enter** key.

SmartStart Setup

1. Insert the SmartStart for Servers CD into the server CD-ROM drive and power up the server.
2. Navigate through the language, country, keyboard, and time and date screens to get to the **SmartStart Roadmap** screen (three-path screen).
3. Click **Assisted Integration Path** and click **Begin**.
4. Follow the instructions on the screen to configure the server.
5. Use the parameters from Table 3-1 to complete the configuration screens when you get to the RILOE II screen. Press the **F1** key to receive context-sensitive help for the current screen.
6. When the **Configuration Complete** dialog box displays, select **Summary** to review your configuration parameters for the Remote Insight Lights-Out Edition board. Click **Back** to return to any screen that needs to be changed.
7. Click **Finish** when you are satisfied that the RILOE II is set up correctly for your configuration (see Table 3-1).

Your server and RILOE II will be operational after the SmartStart process completes. For information about using the features of the RILOE II, refer to Chapter 5.

Browser Settings

Use the following browser settings to optimize performance:

- Medium text size

The following browsers are supported:

- Microsoft Internet Explorer
 - Minimum: Microsoft Internet Explorer 5.0 for Windows 95, Windows 98, Windows ME, Windows NT 4.0, Windows 2000, and Windows XP.
 - Recommended: Microsoft Internet Explorer 6.0 or above
- Netscape
 - Navigator 6.1

Additional browsers, or the browsers mentioned, used with different operating systems, may or may not work correctly, depending upon their specific implementations of the required browser technologies.

Installing RILOE II Device Drivers

A majority of the RILOE II functionality is available without any operating system-based software or drivers. Two driver interfaces, however, are provided to the RILOE II management processor.

- The first interface is for the Compaq RILOE II Advanced Server Management Controller Driver. This driver is also known as the Compaq Health Driver and provides system management support, including monitoring of server components, event logging, and support for the Compaq Management Agents.
- The second interface is for the Compaq RILOE II Management Interface Driver. This driver allows system software and SNMP Insight Agents to communicate with RILOE II.

The following sections provide instructions for installing RILOE II drivers for Microsoft, Linux, and Novell operating systems. The SmartStart for Servers CD contains the latest versions of these drivers. The latest drivers can also be found on the Compaq website:

www.compaq.com/support/files/

To install the appropriate device drivers for your server's operating system, refer to the following sections:

- Microsoft Windows NT, Windows 2000, and Windows .NET Server Driver Support
- Novell NetWare Server Driver Support
- Red Hat Linux and SuSE Linux Server Driver Support

Microsoft Windows NT, Windows 2000, and Windows .NET Server Driver Support

The device drivers that support RILOE II are part of the Compaq Support Pak that is located on the SmartStart for Servers CD or the Compaq website. Before you install the Windows drivers, obtain your Windows documentation and the latest Windows Service Pack.

Relevant Files

The *CPQRIB.SYS* file provide the RILOE II Advanced Server Management Controller Driver support.

The *CPQCIDRV.SYS* file provides the RILOE II Management Interface Driver support.

You can install or update the RILOE II drivers by following the instructions in the next section.

Installing or Updating the RILOE II Drivers

The Compaq Support Paq for Microsoft Windows NT, 2000, and .NET Server is an advanced software delivery tool that replaces the familiar Software Support Diskette (SSD) used for support of previous versions of Windows server operating systems. The Compaq Support Paq for Microsoft Windows 2000 includes an installer that analyzes system requirements and installs all drivers.

The Compaq Support Paq is available on the Compaq website or on the SmartStart for Servers CD in the \CPQSUPSW\NTCSP subdirectory.

NOTE: If you are updating the RILOE II drivers, ensure that RILOE II is running the latest version of the RILOE II firmware. The latest firmware can be obtained through ROMPaq from the Compaq website:

www.compaq.com/lights-out

To install the drivers in the Support Paq, download the Support Paq from the Compaq website, run the *SETUP.EXE* file included in the download, and follow the installation instructions. For additional information about the Support Paq installation, read the text file included in the Support Paq download.

You can also download and install the individual Smart Component file from the Compaq website:

www.compaq.com/support/files/

Novell NetWare Server Driver Support

The device drivers required to support RILOE II are part of the Compaq Support Paq that is located on the SmartStart for Servers CD or the Compaq website.

Relevant Files

The *CPQRIB.NLM* file provides the RILOE II Management Interface Driver support.

You can install or update the RILOE II drivers by following the instructions in the next section.

Installing or Updating the RILOE II Drivers

The Compaq Support Paq for Novell NetWare 5.x and 6.x is an advanced software delivery tool that replaces the familiar SSD used for support of previous versions of NetWare server operating systems. The Compaq Support Paq for Novell NetWare includes an installer that analyzes system requirements and installs all drivers. The Compaq Support Paq is available on the Compaq website or on the SmartStart for Servers CD in the \CPQSUPSW\NWCSP subdirectory.

NOTE: If you are updating the RILOE II drivers, ensure that RILOE II is running the latest version of the RILOE II firmware. The latest firmware can be obtained through ROMPaq from the Compaq website:

www.compaq.com/lights-out

To install the drivers in the Support Paq, download the Support Paq from the Compaq website to your NetWare server. After the Support Paq has been downloaded, follow the NetWare component installation instructions to complete installation. For additional information about the Support Paq installation, read the text file CPQDPLOY.TXT included in the Support Paq download.

You can also download and install the individual Smart Component file from the Compaq website:

www.compaq.com/support/files/

Red Hat Linux and SuSE Linux Server Driver Support

The device drivers required to support RILOE II for Red Hat Linux, and SuSE Linux, are located on the SmartStart for Servers CD or the Compaq website:

www.compaq.com/support/files/

Relevant Files

The *CPQCRID-x.x.x-x.i386.RPM* file provides the RILOE II Management Interface Driver support.

Where: *x.x.x-x* are version numbers.

D is the Linux Distribution and Version.

You can download the Compaq *SoftPaq*™ files containing the RILOE II driver, the health driver, and agents from the Compaq website. The instructions on how to install or update the RILOE II driver are available on the website.

Log in as the system administrator and place the RPM file in your current working directory by using the following commands:

```
rpm -ivh cpqcrid-x.x.x-x.i386.rpm
```

If necessary, you can uninstall, stop, or start the RPM file by using the following commands:

- Uninstall

```
rpm -e cpqcrid
```
- Stop

```
/etc/rc.d/init.d/cpqcrid stop
```
- Start

```
/etc/rc.d/init.d/cpqcrid start
```

For additional information see the Software & Drivers web pages on the Compaq website:

www.compaq.com/support/files/

Using the RILOE II

This chapter addresses common questions about how to use the features of the RILOE II.

How do I Access the RILOE II for the First Time?

The RILOE II is configured with a default user name, password, and DNS name. A Network settings tag with the preconfigured values is attached to the board. Use these values to access the board remotely from a network client using a standard Web browser.

IMPORTANT: For security reasons, Compaq recommends that you change these default settings after accessing the RILOE II for the first time.

The default values are:

- User name: Administrator
- Password: The last eight digits of the serial number
- DNS name: RIBXXXXXXXXXXXX, where the 12 Xs are the MAC address of the RILOE II

IMPORTANT: User names and passwords are case sensitive.

Follow these steps to access the RILOE II for the first time:

1. Enter the RILOE II IP address or DNS name in the address bar of the Web browser.

2. When connecting to the Compaq RILOE II in a browser for the first time, you will receive a security alert, as shown in Figure 5-1.



Figure 5-1: Certificate Security Alert for Internet Explorer

If **Yes** is clicked, the browser continues to the login screen of the RILOE II. The message displays each time the user accesses the board in a browser.

If **No** is clicked, the user is returned to the **Welcome** screen of the RILOE II.

If **View Certificate** is clicked, a popup window displays showing the certificate information. Installing the certificate to your browser prevents the security alert message from displaying in the future.

To install the certificate, proceed to step 3. If you choose not to install the certificate, proceed to step 4.

NOTE: If the certificate is removed from your browser or if you have upgraded the firmware, or if the board is rebooted, the security alert messages display again.

NOTE: The group administration function and access to the RILOE II's Web interface are encrypted using SSL security. However, the keystrokes used during access to the Remote Console are obscured and not SSL encrypted.

3. To install the certificate to your browser, follow these steps:
 - a. Click **Install Certificate**. The Certificate Import Wizard will start.
 - b. Click **Next**.
 - c. Click **Next** to allow the browser to automatically select the certificate store when the **Certificate Store** window displays.
 - d. Click **Finish** when the **Completing the Certificate Import Wizard** window displays.
 - e. Click **Yes** to confirm the installation of the certificate when the confirmation window displays.
4. When the RILOE II has been detected, the screen will prompt you for a user name and password. Use the default user name and password from the Network settings tag and click **OK**.
5. After the default user name and password have been verified, the **Remote Insight Status Summary** screen is displayed.

The Remote Insight Status Summary provides general information about the RILOE II such as the user currently logged on, server name and status, Remote Insight IP address and name, and latest log entry data. The summary home page also shows whether the RILOE II has been configured to use Compaq Web-Based Management and Insight Management Web agents.

Features of the RILOE II

The RILOE II screen displays the following tabs:

- System Status

This section provides information about the server and the RILOE II. The information includes server status, RILOE II status, Survey information, Remote Insight event log, and Integrated Management log.

- Remote Console

This section gives you access to the Remote Console and allows you to define keystroke sequences that will be transmitted to the remote host server at the press of a hot key. It also provides reset sequence playback and Windows.net EMS access.

- Virtual Devices

This section provides remote virtual power button and power cycle “remote reset” capabilities by means of a hardware-level cold boot, and Virtual Floppy drive, Virtual Floppy drive USB, and Virtual CD USB.

- Administration

The Administration section allows you to manage individualized settings for users, SNMP alerts, the network environment, and global security. This section also includes an option that enables easy upgrades of the RILOE II firmware.

- Help

Each screen for the RILOE II provides a help screen for information for the features listed on the screen.

How do I Use the Graphical Remote Console to Manage the Host Server?

The Remote Console feature of the RILOE II redirects the host server console to the network client browser, providing full text and graphical mode video, keyboard, and mouse access to the host server.

With the Remote Console, you have complete control over a host server as if you were in front of it. You can access the remote file system and the network drives. The Remote Console allows you to change hardware and software settings of the host server, install applications and drivers, change host server screen resolution, and gracefully shut down the host system.

With the Remote Console, you can observe POST boot messages as the host server restarts and initiate ROM-based setup routines to configure the host server's hardware. When installing operating systems remotely, the graphical Remote Console lets you view and control the host server screen seamlessly throughout the installation process.

NOTE: If your server has a UID LED and it has the Remote Insight Internal cable 30-pin installed, the LED will flash when a Remote Console session is initiated.

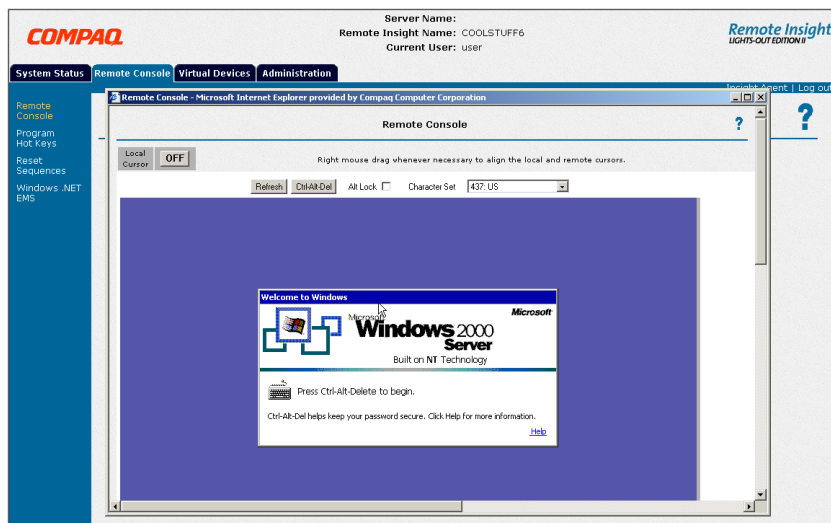


Figure 5-2: Remote Console session

Enhanced Features of the Remote Console

Remote Console provides the RILOE II with enhanced features. Each button has the following function:

Local Cursor

The Remote Console single cursor mode is the default setting. The Remote Console options present a single mouse cursor during remote console. Synchronization of two cursors is eliminated, making navigation easier in the remote console window.

The dual cursor mode uses two mouse cursors in the remote console window to represent the host server's mouse cursor and the local client's mouse cursor. The local client cursor is seen as a crosshair in the remote console window.

To switch to dual cursor mode, click **OFF**, next to **Local Cursor**. To return back to single cursor mode, click **ON** next to **Local Cursor**.

NOTE: Dual cursor mode is only supported by Internet Explorer browser.

Refresh

There may be instances when the **Remote Console** screen is not displaying the latest data. Click **Refresh** to force the RILOE II to repaint the screen.

Ctrl-Alt-Del

Click **Ctrl+Alt+Del** to log on to Windows NT and Windows 2000.

EMS Console

The Microsoft Emergency Management Service console provides a text based screen to access the host server. The Emergency Management Service console option will be available on future Compaq ProLiant servers using Windows .NET. To open the Emergency Management Service Console on the RILOE II click **EMS Console**.

Alt Lock

The Alt lock provides you to be able to press the **ALT** key for the host server. This allows the signal to be passed through the client to the host server.

Character Set

Use this to change the default character set used by the Remote Console and the type of operating system the Remote Console is connecting to. Modifying the Remote Console settings ensures proper operation of the Remote Console and correct display of colors and characters.

Remote Console Hot Keys

The Remote Console hot keys feature allows you to define up to six multiple key combinations to be assigned to each hot key. When a hot key is pressed in the Remote Console, the defined key combination (all keys pressed at the same time) will be transmitted in place of the hot key to the host server.

To define a Remote Console hot key:

1. Click **Remote Console Hot Keys**, located on the **Remote Console** tab.
2. Select the hot key you want to define and use the drop boxes to select the key sequence to be transmitted to the host server at the press of the hot key.
3. Click **Save Hot Keys** when you have finished defining the key sequences.

How Can I Troubleshoot the Host Server?

The RILOE II provides features for proactive system management and efficient troubleshooting of server problems.

In addition to the Remote Console, you have access to overall server status information, video replay of prior server resets, and other information gathered by the Compaq Survey utility.

The RILOE II maintains a complete set of logs for troubleshooting server problems. These logs are the Remote Insight Event Log and the Integrated Management Log.

Full integration with Compaq Insight Manager 7 provides warning of potential problems by means of SNMP trap alerts displayed on a Compaq Insight Manager 7 console. This integration is achieved by installing and configuring Compaq Insight agents on the remote server. See the “Enabling SNMP Alerts” section in this chapter for more information.

Obtaining Additional Information Concerning the State of the Host Server

The Server Status option provides comprehensive status information about the following items:

- Server information
- POST diagnostic results

Video Replays of Prior Server Reset Sequences

The Reset Sequences option on the **Remote Console** tab provides video replay of server reset sequences. This option allows you to observe ROM-based POST messages and operating system load messages of prior host server resets, including any error messages displayed by the operating system before a server hang.

IMPORTANT: Reset Sequences require the use of the remote console. You will not be able to access the remote console while replaying the reset sequences.

To access video replays of the host server reset sequences:

1. Click **Reset Sequences**, located on the **Remote Console** tab.
2. Select the desired sequence replay from the following options:

Previous Reset Sequence Replay—This option lets you replay the video sequence prior to the most recent host server reset. The video replay displays ROM-based messages and operating system load messages that occurred while starting the remote host server.

Current Reset Sequence Replay—This option lets you replay the video sequence of the most recent host server reset. The video replay displays ROM-based messages and operating system load messages that occurred while starting the host server.

Failure Sequence Replay—This option lets you replay the video sequence leading up to the most recent host server reset resulting from a system problem. This video replay includes any error information generated by the operating system prior to the host server problem and subsequent reset.

Information Logs

The **System Status** tab gives you access to two types of information logs that are useful when troubleshooting host server problems:

- Integrated Management Log

The Integrated Management Log allows you to view logged remote server events. Logged events include all server-specific events recorded by the Compaq system health driver, including operating system information and ROM-based POST codes.

- Remote Insight Event Log

The Remote Insight Event Log is an operating system-independent log that maintains a record of events by date and time. Logged events include major server events, such as a server power outage or a server reset, and Remote Insight events, such as a loose cable or an unauthorized login attempt. For a list of logged events see Table 7-4 in Chapter 7.

Restarting the Host Server

Troubleshooting a host server may require restarting the remote system. You can easily restart the host server by using the options listed on the **Virtual Device** tab.

The first option, **Turn Server Power ON/OFF**, which will only work if the host server was configured to use this device when the RILOE II was installed. If the **Turn Server Power ON/OFF** option has not been installed in the host server, using this option has no effect. See Chapter 2 for details about enabling the virtual power button feature in the host server.

Clicking **Turn Server Power ON/OFF** is analogous to pressing the physical power button of the host server. The virtual power button will turn the host server's power on or off, depending on the power state of the host server.

IMPORTANT: Using the Virtual Power Button option does not gracefully shut down the host server's operating system. For a graceful shutdown of a server's operating system, use Compaq Insight Manager or the Remote Console before using the Virtual Power Button option.

The second option, **Power Cycle Server**, performs a hardware-level cold boot reset and is available regardless of the condition of the host server or the operating system. The **Power Cycle Server** feature allows the host server to be restarted whenever the server is locked up or is in need of a reboot.

IMPORTANT: This type of reboot does not gracefully shut down the host server's operating system. For a graceful shutdown of a server, use Compaq Insight Manager or the Remote Console.

To restart a host server:

1. Click **Power Cycle Server** on the **Virtual Power** screen. You will see a confirmation screen followed by a warning.
2. To begin rebooting the host server, click **Confirm**.
3. After the host server reboots, a Remote Console session will begin, allowing you to observe ROM-based POST messages and operating system load messages.

How do I Use the Virtual Devices?

With Virtual devices, an administrator can easily direct a host server to boot and use a standard 1.44-MB diskette, CD ROM on the client machine, or an image file from anywhere on the network by means of a standard Web browser. Virtual devices eliminate the need to visit a host server to insert and use a diskette or CD, enabling remote operating system installation from a CD or network drive and host server ROM updates.

Use Virtual devices allow you to carry out any of the following functions:

- Running Compaq User Diagnostics by booting host servers from a diagnostic diskette

NOTE: Compaq recommends that you first delete the *SYSMON2.TM* file before using Compaq User Diagnostics with the Virtual Floppy Drive.

- Applying ROMPaq upgrades to host servers
- Deploying an operating system on host servers from network drives or from a CD on a client machine
- Deploying software from a CD on a client machine
- Performing disaster recovery of failed operating systems

Virtual Floppy Screen

The **Virtual Floppy** screen provides the status of the virtual floppy, the ability to load a virtual floppy image, and the ability to change virtual floppy settings.

Uploading a Diskette Image to the Remote Server

The **Insert Floppy Image** option allows you to send a diskette image file to the RILOE II in the remote host server. The RILOE II will treat the diskette image file as a standard diskette.

IMPORTANT: The Virtual Floppy Drive was designed and tested with Microsoft DOS, Windows 95, and Windows 98 bootable diskettes. The Virtual Floppy Drive will only work correctly with an operating system that accesses diskette drives by means of standard BIOS Interrupt 13 calls. The Virtual Floppy Drive is not compatible with protected-paging mode applications such as EMM386.

NOTE: Image files of diskettes are created and stored locally on your hard drive or on a network drive with the Compaq Diskette Image Utility. This utility is available for download from the Compaq website:

www.compaq.com/lights-out

For additional information about this utility, see the section “Using the Compaq Diskette Image Utility.”

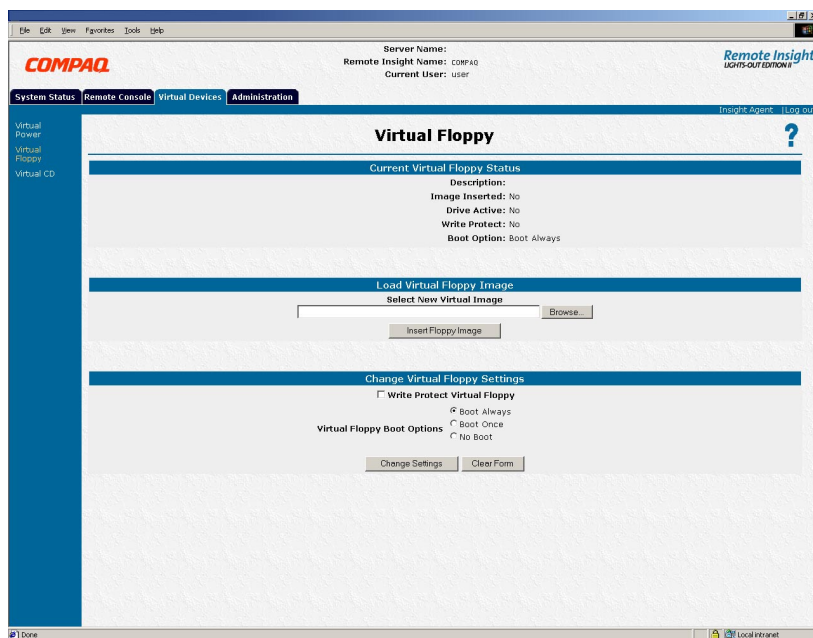


Figure 5-3: Insert Floppy Image

To upload a diskette image to the RILOE II in the host server:

1. Click **Insert Floppy Image**, located in the **Virtual Floppy** screen.

2. Type in the location and name of the diskette image file, or click **Browse** and choose the diskette image file you want to transfer to the RILOE II.
3. When the full path and diskette image file name are in the text entry field, click **Insert Floppy Image** to upload the image file to the RILOE II in the host server.

If needed, modify options for the Virtual Floppy Drive.

IMPORTANT: The external power of the internal 16-pin remote insight internal cable or 30-pin remote insight internal cable (on supported servers) must be installed when booting to a virtual floppy, otherwise the image will be lost when the server is reset.

NOTE: The Virtual Floppy Drive can hold only one diskette image file at a time. The uploaded diskette image file will remain in the Virtual Floppy Drive until it is either replaced with another diskette image file or erased from the Virtual Floppy Drive by clicking **Eject Virtual Floppy** on the **Virtual Floppy Status** screen. The diskette image file will also be erased if power to the RILOE II is lost. Logging out of the RILOE II will not erase the diskette image file from the Virtual Floppy Drive.

Changing Virtual Floppy Drive Settings

The **Virtual Floppy** screen allows you to view and change current settings for the Virtual Floppy Drive. Changes you make to the virtual diskette drive boot and write-protect options take effect when you click **Submit Changes**.

IMPORTANT: A host server can use files uploaded to a Virtual Floppy Drive only if the Virtual Floppy Drive is active. The Virtual Floppy Drive will be active when the RILOE II has restarted the host server using a diskette image file uploaded to the Virtual Floppy Drive. The Virtual Floppy Drive will remain active until the remote host server is restarted with its own operating system.

NOTE: Although the Virtual Floppy Drive is active, the host server's physical diskette drive will be temporarily disabled. The host server's diskette drive will be re-enabled when the host server is restarted with its own operating system and the Virtual Floppy Drive is not active.

The Virtual Floppy Boot Option has three settings:

- **Boot Always**—This setting instructs the RILOE II to always boot the host server from the diskette image file in the Virtual Floppy Drive. If this setting is checked, Virtual Floppy Status will show the virtual drive as active after the server has restarted.

- **Boot Once**—This setting instructs the RILOE II to boot the host server one time from the diskette image file in the Virtual Floppy Drive. If this setting is checked, Virtual Floppy Status will show the virtual drive as active after the server has restarted.
- **No Boot**—This is the default setting for the Virtual Floppy Drive. It instructs the RILOE II not to boot the host server from the diskette image file in the Virtual Floppy Drive. This setting has no effect on the Virtual Floppy Drive status.

Copying Files on the Host Server to the Virtual Floppy Drive

The **Write Protect Virtual Floppy** option on the **Virtual Floppy** screen specifies whether data on the host server can be copied to the Virtual Floppy Drive. If this option is checked, the Virtual Floppy Drive is write protected and no data from the host server can be copied to it.

Ensure the **Write Protect Virtual Floppy** option is unchecked to copy remote files to the Virtual Floppy Drive using standard operating system commands typed in at the Remote Console. The Virtual Floppy option cannot be used to upgrade the RILOE II firmware.

Using the Compaq Diskette Image Utility

The Compaq Diskette Image Utility has three functions:

- Create an image file from a standard 1.44-MB diskette suitable for use with the Virtual Floppy Drive
- Create a standard 1.44-MB diskette from an image file copied from the Virtual Floppy Drive
- Compare a diskette image file with a standard 1.44-MB diskette

Creating an Image File from a Diskette

To create an image file from a standard 1.44-MB diskette:

1. Launch the Compaq Diskette Image Utility and click the **Create Image File** tab.
2. Insert the diskette you want to make an image of into your diskette drive.

3. Provide the source drive, a path where you want to save the image along with the file name the image will have, and an image file description. Your screen should be similar to Figure 5-4.

NOTE: The path can be a local or a network path. If you do not provide a path, the image file will be saved on the Desktop.

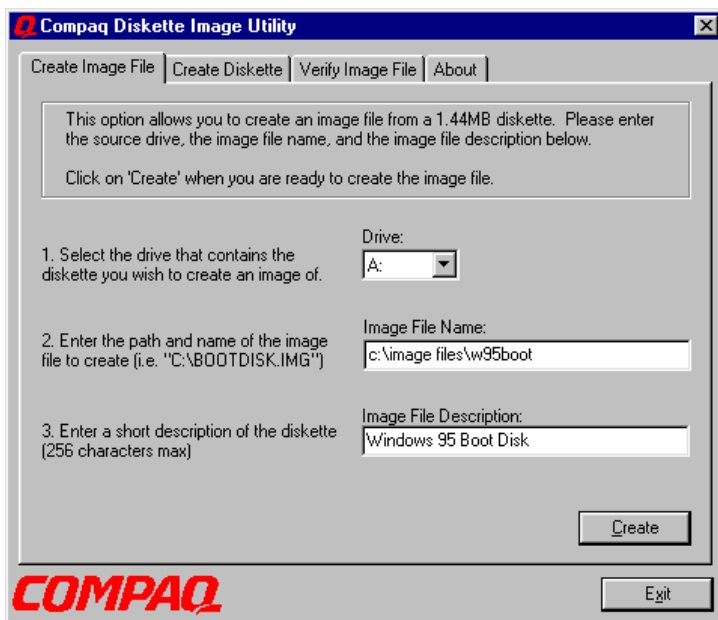


Figure 5-4: Create Image File screen

4. Click **Create** to generate the image file in the location you specified.

Creating a Diskette from an Image File

To create a standard 1.44-MB diskette from an image file:

1. Launch the Compaq Diskette Image Utility and click the **Create Diskette** tab.
2. Insert a blank diskette into your diskette drive.



CAUTION: If the diskette is not blank, all data on the diskette will be erased.

3. Provide the location and name of the image file and the target diskette drive. You can navigate to the location of the image file by clicking **Browse**. Your screen should be similar to Figure 5-5.

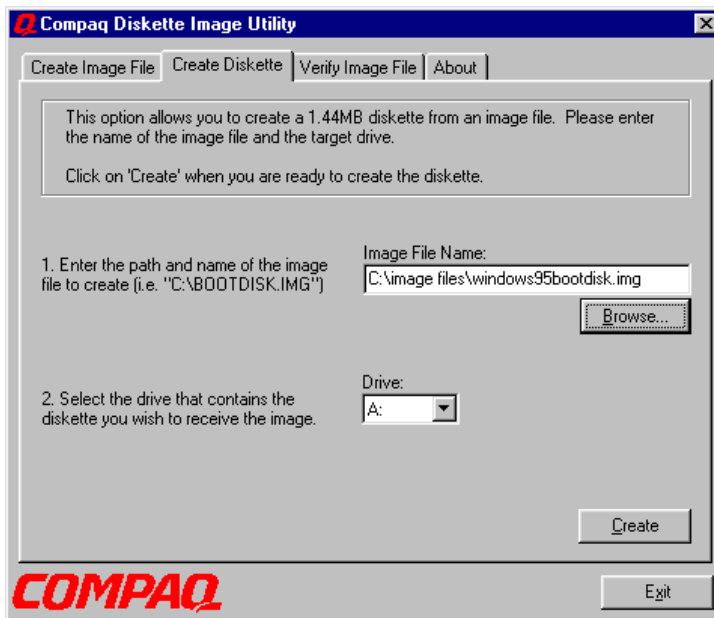


Figure 5-5: Create Diskette screen

4. Click **Create** to generate the diskette from the image file.

Comparing an Image File with a Diskette

To compare an existing image file with a diskette:

1. Launch the Compaq Diskette Image Utility and click the **Verify Image File** tab.
2. Insert the diskette that needs to be compared with an image file into your diskette drive.

3. Provide the location and name of the image file and the target diskette drive. You can navigate to the location of the image file by clicking **Browse**. Your screen should be similar to Figure 5-6.

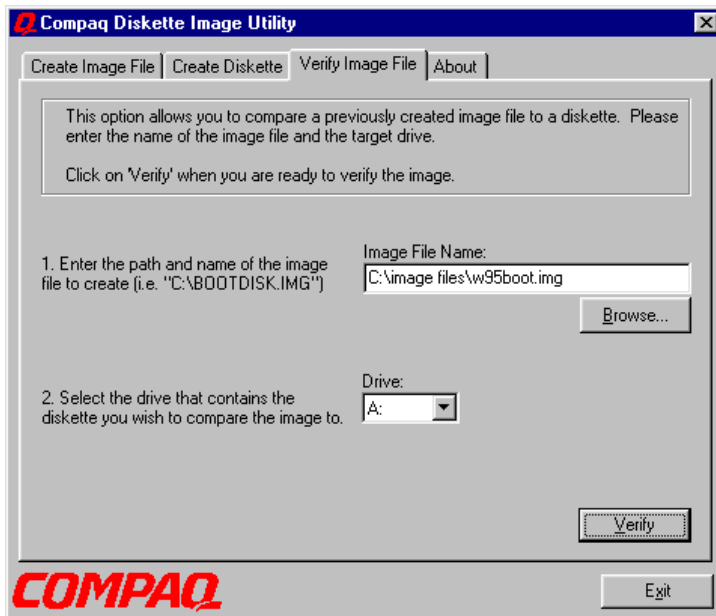


Figure 5-6: Verify Image File screen

4. Click **Verify** to start comparing the image file with the diskette. When the verification completes, a popup screen displays the results.

Virtual Media

Virtual Media devices connect to the host server using Universal Serial Bus (USB) technology. Using USB enables new capabilities for the RILOE II Virtual Media devices when connected to USB-supported operating systems. The RILOE II Virtual Media devices are available to the host operating system, on USB-supported operating systems. With the Virtual Media, an administrator can easily direct a host server to boot and use a CD, standard 1.44-MB diskette, or an image file from anywhere on the network by means of a standard Web browser. Virtual Media eliminates the need to visit a host server to insert and use a CD, or diskette, enabling remote operating system installation and host server ROM updates from a client machine.

Use the Virtual Media options to carry out any of the following functions:

- Running Compaq User Diagnostics by booting host servers from a diagnostic diskette

NOTE: Compaq recommends that you first delete the *SYSMON2.TM* file from the diagnostic diskette before using Compaq User Diagnostics with the Local Floppy Drive.

- Applying ROMPaq upgrades to remote host servers
- Deploying an operating system on a host servers from a CD on a client machine
- Deploying software from a CD on a client machine
- Performing disaster recovery of failed operating systems

How do I Use Local CD Drive?

To use **Local CD Drive**:

1. Select the **Virtual Media** option on the **Virtual Devices** tab or the left menu. The Virtual Media applet will load.
2. Select the radio button to the left of **Local CD Drive**.
3. Click the down arrow button next to **Local CD Drive**, then select the local drive letter of the desired physical CD drive.
4. Click **Connect**.

5. When connected, the **Local CD Drive** will be available to the host server until **Disconnect** is clicked or the **Virtual Media** applet is closed. When you are finished using the **Local CD Drive**, you may either select to disconnect the device from the host server or close the applet.

NOTE: The Virtual Media applet must remain open in your browser as long as you continue to access the Local CD Drive from the host server.

The **Local CD Drive** will be available to the host server at run-time if the operating system on the host server supports USB devices. Windows 2000, Windows .NET Server and Linux operating systems support USB devices at the time of this manual's publication.

The **Local CD Drive** will appear to your operating system just like another CD drive.

NOTE: The host operating system may prompt you to complete a new hardware found wizard the first time you use the Local CD Drive feature.

NOTE: You may receive a warning message from the host operating system regarding unsafe removal of a device when you disconnect from the RILOE II Virtual Media feature. This warning may be avoided by using the OS-provided feature to stop the device before disconnecting from the Virtual Media.

How do I Use Local Floppy Drive?

To use **Local Floppy Drive**:

1. Select the **Virtual Media** option on the **Virtual Devices** tab or the left menu. The Virtual Media applet will load.
2. Select the radio button to the left of **Local Floppy Drive**.
3. Click the down arrow button next to **Local Floppy Drive**, then select the local drive letter of the desired physical floppy drive.
4. Click **Connect**.

5. When connected, the **Local Floppy Drive** will be available to the host server until **Disconnect** is clicked or the **Virtual Media** applet is closed. When you are finished using the **Local Floppy Drive**, you may either select to disconnect the device from the host server or close the applet.

NOTE: The Virtual Media applet must remain open in your browser as long as you continue to access the Local Floppy Drive from the host server.

The **Local Floppy Drive** will be available to the host server at run-time if the operating system on the host server supports USB devices. Windows 2000, Windows .NET Server and Linux operating systems support USB devices at the time of this manual's publication.

The **Local Floppy Drive** will appear to your operating system just like another floppy drive.

NOTE: The host operating system may prompt you to complete a new hardware found wizard the first time you use the Local Floppy Drive feature.

NOTE: You may receive a warning message from the host operating system regarding unsafe removal of a device when you disconnect from the RILOE II Virtual Media feature. This warning may be avoided by using the OS-provided feature to stop the device before disconnecting from the Virtual Media.

How do I Use Local Image File

To use **Local Image File**:

1. Select the **Virtual Media** option on the **Virtual Devices** tab or the left menu. The Virtual Media applet will load.
2. Select the radio button to the left of **Local Image File**.
3. Enter the name of the diskette image in the text box or you may use **Browse** to locate the image file. Then click **Connect**.
4. When connected, the **Local Image File** will be available to the host server until **Disconnect** is clicked or the **Virtual Media** applet is closed. When you are finished using the **Local Image File**, you may either select to disconnect the device from the host server or close the applet.

NOTE: The Virtual Media applet must remain open in your browser as long as you continue to access the Local Image File from the host server.

The **Local Image File** will be available to the host server at run-time if the operating system on the host server supports USB devices. Windows 2000, Windows .NET Server and Linux operating systems support USB devices at the time of this manual's publication.

How do I Manage the User and Configuration Settings of the RILOE II?

The options available in the Administration section let you manage user settings, SNMP alerting through integration with Compaq Insight Manager, security settings, and network environment settings. This section also provides a firmware upgrade option that lets you keep the RILOE II current.

Adding Authorized Users

The Administration section lets you manage users of the RILOE II.

NOTE: Only users with supervisor access can manage other users on the RILOE II.

You can assign a different access level to each user. A user can have supervisor status with the ability to create, modify, or delete other users. Conversely, a user can be denied supervisor status and access to other features of the RILOE II.

The RILOE II supports up to 25 users. Login attempts are tracked and login failures are logged. You have the option of generating alerts on a remote management PC running Compaq Insight Manager 7 when login attempts fail. The RILOE II will support all LAN-oriented security features and dynamic password encryption.

To add a new user to the RILOE II:

1. Log on to the RILOE II using an account that has supervisor status.
2. Click **User Settings** on the **Administration** tab.

3. Click **Add** and complete the fields with the necessary information for the user being added.
4. When the user profile is complete, click **Save User Information** to return to the **User Settings** screen.

NOTE: To clear the user profile form while entering a new user, click **Restore User Information**.

Change an Existing User's Profile

Changing an existing user's information is also accomplished with the **User Settings** option on the **Administration** tab.

IMPORTANT: Only users with supervisor access can manage other users on the RILOE II.

To change an existing user's information:

1. Log on to the RILOE II using an account that has supervisor status.
2. Click **User Settings** on the **Administration** tab.
3. Select the user that you want to modify and click **Modify**.
4. Change the user information in the fields that require modification. Click **Save User Information** to return to the **User Settings** screen.

IMPORTANT: To recover the user's original information, click **Restore User Information**. All changes made to the profile will be lost.

Enabling SNMP Alerts

The **Configure and Test SNMP Alerts** section in the **Global Settings** section allows you to specify which type of alert messages will be forwarded from the host server and RILOE II to a Compaq Insight Manager console. The **Configure and Test SNMP Alerts** option also allows you to send test alerts to three SNMP trap destinations.

There are two types of alerts that can be received:

- **Host OS Generated SNMP Traps**—The Insight Management agents provided for each supported network operating system generate these alerts. These agents must be installed on the host server to receive these alerts. Alerts are sent to Insight Manager clients on the network and forwarded asynchronously by the RILOE II to users that have been configured to receive them.
- **Compaq Remote Insight Board Alerts**—These alert the RILOE II detects conditions, and they are independent of the host server operating system. These alerts can be Insight Manager SNMP traps or pager alerts. Alerts include major events such as host server power outage or host server reset and RILOE II events such as a disconnected keyboard cable or an unauthorized login attempt.

To configure alerts:

1. Log on to the RILOE II using an account that has supervisor status.
1. Click **Global Settings** on the **Administration** tab.
2. Click **Yes** for the alert types that you want to receive.
3. Enter the IP addresses to send the alerts to in the **SNMP Trap Destinations** field.
4. Click **Apply Settings**.

IMPORTANT: Alerting requires an SNMP IP address. Ensure that you provide the IP address of the remote management system in the **SNMP Trap Destination**. If the user will be receiving SNMP trap alerts from the RILOE II at a Compaq Insight Manager console, the IP address of that console must be provided.

Generating Test Alerts

Test alerts are generated by means of the Manage Alerts option in the Administration section. These alerts include a Compaq Insight Manager 7 SNMP trap and are used to verify the network connectivity of the RILOE II in Compaq Insight Manager 7.

NOTE: Only users with supervisor status can send Global Test Alerts.

To send out a test alert:

1. Click **Global Settings** on the **Administration** tab.
2. Click **Send Test Trap** in the **Configure and Test SNMP Alerts**.
3. After generating the alert, a confirmation screen displays.
4. If the alert system is working correctly, an Alarm screen advising you that an alert has been received. For more information, see the “Receiving SNMP Alerts in Compaq Insight” section in this chapter.

Disabling Alerts

To disable alerts:

1. Log on to the RILOE II using an account that has supervisor status.
2. Click **Global Settings** on the **Administration** tab.
3. Click **No** for the alert types that you want to disable.
4. Click **Apply Settings**.

Modifying Network Settings for the RILOE II

The Network Settings option in the Administration section allows you to view and modify the NIC IP address, subnet mask, and other TCP/IP-related settings. From this screen you can enable or disable DHCP and, for servers not using DHCP, you can configure a static IP address. The Network Settings option is also the location where you specify the IP address or DNS name for Compaq Web-based Management agents.

The screenshot shows the 'Network Settings' page in the Remote Insight Lights-Out Edition II web interface. The page has a blue header with the 'COMPAQ' logo and 'Remote Insight LIGHTS-OUT EDITION II' text. A navigation bar at the top includes 'System Status', 'Remote Console', 'Virtual Devices', and 'Administration'. The left sidebar lists various settings categories like 'User Settings', 'Global Settings', 'Network Settings', 'Certificate Settings', 'Manage Alerts', and 'Upgrade Firmware'. The main content area is titled 'Network Settings' and contains two sections: 'Standard Configuration Parameters' and 'Advanced Configuration Parameters'. The 'Standard' section includes radio buttons for 'Transceiver Speed Autoselect', 'Speed' (10 or 100 Mbps), 'Enable DHCP', and checkboxes for 'Use DHCP Supplied Gateway', 'DNS Servers', 'WINS Servers', and 'Static Routes'. It also has input fields for 'IP Address', 'Gateway IP Address', 'Subnet Mask', 'Remote Insight HTTP Port', and 'Remote Insight Remote Console Port'. The 'Advanced' section includes input fields for 'Remote Insight Board Name', 'Domain Name', and various server addresses (DHCP, Primary/Secondary/Tertiary DNS, Primary/Secondary WINS, and Static Routes #1, #2, #3). A 'Server IP Address (for WEB agents) http://' field is also present. At the bottom, a note states: 'NOTE: The Remote Insight Board must be restarted before any changes you make on this screen will take effect. When you press the Apply button at the bottom of the screen the Remote Insight Board will be restarted automatically. When this happens your browser's connection to the Remote Insight Board will be terminated, and you will need to wait before you can reestablish communication with the Remote Insight Board.' An 'Apply' button is located at the bottom right of the form.

Figure 5-7: Network Settings screen

To change network settings for the RILOE II:

1. Log on to the RILOE II using an account that has supervisor status.

NOTE: Users that do not have supervisor status will be able to view only assigned network settings.

2. Click **Network Settings** in the **Administration** tab.
3. Change the network settings as needed by typing in the fields. After the parameter changes have been made, click **Apply** to complete the changes.
4. When you click **Apply**, the RILOE II will restart. When this happens, your browser's connection to the board will be terminated. To reestablish a connection, wait 60 seconds before launching another Web browser session and logging in to the RILOE II.

Security Settings

The **Security Settings** provided for the RILOE II are:

Session Timeout—this option allows the Remote Console session on the network client to end automatically after the set amount of time selected.

ROM Configuration Utility (F8)—this allows you to enable or disable the F8 setup.

Remote Access with Pocket PC—this option allows you to enable or disable the remote access for pocket PC's.

To change the Security Settings:

1. Log on to the RILOE II using an account that has supervisor status.

NOTE: Security Settings can be changed only by users with supervisor access. All other users can only view the settings.

2. Click **Global Settings** on the **Administration** tab.
3. Change the settings in the **Security Settings** section.
4. Click **Apply Settings**.

Progressive Delays for Failed Browser Login Attempts—Another security feature is the progressive delays for failed browser login attempts. After a series of five failed login attempts by a user, the RILOE II imposes delays to subsequent logins. This scenario continues until a valid login is completed. This feature assists in defending against possible dictionary attacks against the browser login port.

Keeping the RILOE II Firmware Current

Firmware upgrades enhance the functionality of the RILOE II. The firmware upgrade can be done from any network client using a standard Web browser. However, only users with supervisor status can upgrade the firmware on the RILOE II.

To upgrade the board's firmware, you will need a diskette containing the firmware version to which you want to upgrade the RILOE II. The most recent firmware for the RILOE II is available on the Compaq website at

www.compaq.com/lights-out

To upgrade the RILOE II firmware using a standard Web browser:

1. Log on to the RILOE II using an account that has supervisor status.
2. Click **Upgrade Firmware** on the **Administration** tab. A screen similar to Figure 5-8 displays.

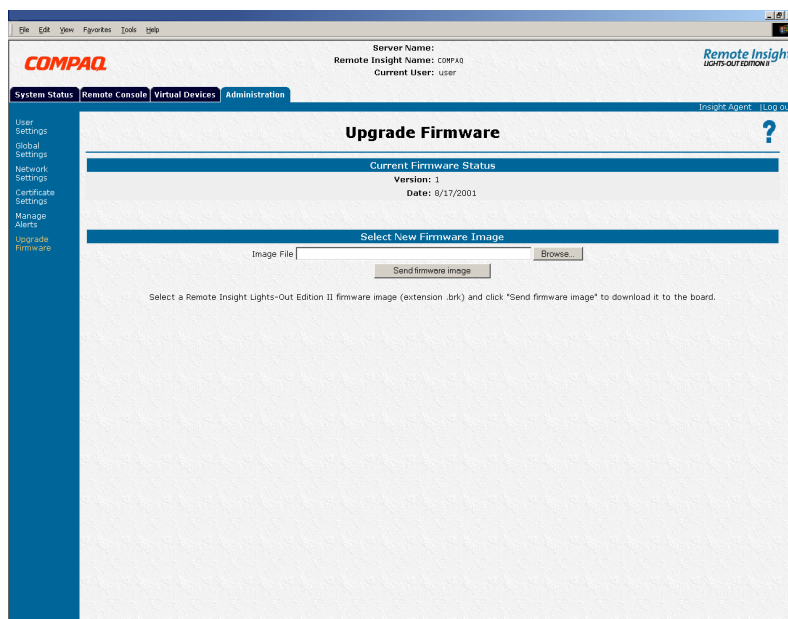


Figure 5-8: Upgrade Firmware screen

3. Follow the instructions on the firmware upgrade screen. If you need additional assistance, click **Help**.

How do I Reset the RILOE II to the Factory Default Settings?

The RILOE II can be reset to the factory default settings by using the ROM-Based Setup Utility F8. To reset the board to the factory settings:

1. Restart or power up the server.
2. Press the **F8** key to enter the ROM-Based Setup Utility when the cursor flashes and the RILOE II prompt displays on the screen.
3. Select **File**, then select **Set Defaults**.
4. Select **Enter**, when the screen displays **Set to Factory Defaults**.
5. Select **File**, then select **Exit**.

How Can I Get Additional Help?

Additional assistance for all RILOE II options is available by means of the Remote Insight Help hyperlink. This link provides summary information about the features of the board and helpful information for optimizing the operation of the RILOE II.

How do I Integrate the RILOE II with Compaq Insight Manager 7?

The RILOE II fully integrates with Compaq Insight Manager 7 in key operating environments, providing access to Insight Management agents and support for full in-band SNMP management. The RILOE II supports SNMP trap delivery to an Insight Manager Console, which can be configured to forward SNMP traps to a pager or email.

Full integration with Compaq Insight Manager 7 also provides a single management console for launching a standard Web browser to access the RILOE II and for providing diagnostic information about the operation of the board. While the operating system is running, you can establish a connection to the RILOE II using Compaq Insight Manager 7.

Receiving SNMP Alerts in Compaq Insight Manager 7

Compaq Insight Manager 7 provides support for full in-band SNMP management, and the RILOE II supports SNMP trap delivery to a Compaq Insight Manager 7 console. Configuring receipt of SNMP alerts in Compaq Insight Manager 7 is a two-step process. The process requires configuring the RILOE II to enable SNMP alerts and configuring Compaq Insight Manager 7 to receive SNMP alerts from a managed RILOE II.

To configure receipt of SNMP alerts in Compaq Insight Manager 7:

1. Use the **Configure and Test SNMP Alerts** section of the **Global Settings** screen to enable SNMP alerting and to provide an SNMP trap destination IP address. See the “Enabling SNMP Alerts” section earlier in this chapter for details.
2. To configure the RILOE II in Compaq Insight Manager 7.
 - a. Click on the RILOE II you want to configure from the Management Processors screen.
 - b. Click **SNMP Communications Settings**.
 - c. Enter your values and click **Submit**.

NOTE: Compaq Insight agents for the RILOE II must be installed on the remote host server to enable management of the RILOE II by Compaq Insight Manager 7. Refer to the Compaq Insight Manager 7 documentation for additional details about installing and configuring agents.

Web Browser Launching

Compaq Insight Manager 7 provides a single management console platform for launching a Web browser to access the RILOE II.

To launch a Web browser from the Compaq Insight Manager 7 device management screen:

1. Click on the RILOE II from the Management Processors screen.
2. Click **Compaq Remote Insight** in the **Device Links** section.

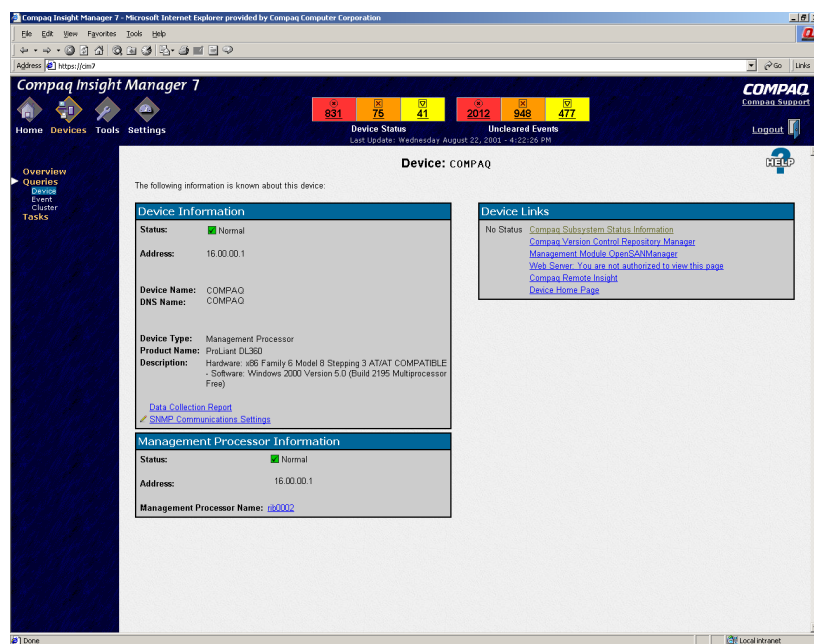


Figure 5-9: Compaq Insight Manager 7

RILOE II Diagnostics

Compaq Insight Manager 7 provides options to manage the recovery of remote servers. The recovery options of Compaq Insight Manager 7 will also provide you with a status of the RILOE II, and access to diagnostics on the RILOE II. The Remote Insight Board status screen provides useful information regarding the operation of the RILOE II. It will show network information and external power cable status, letting you perform any of the following functions.

To access the RILOE II server recovery options of Compaq Insight Manager 7:

1. Click on the RILOE II from the Management Processors screen.
2. Click **Compaq Subsystem Status Information** in the **Host Server Information** section.
3. Click **Remote Insight** in the **Recovery** section on the left side of the screen.

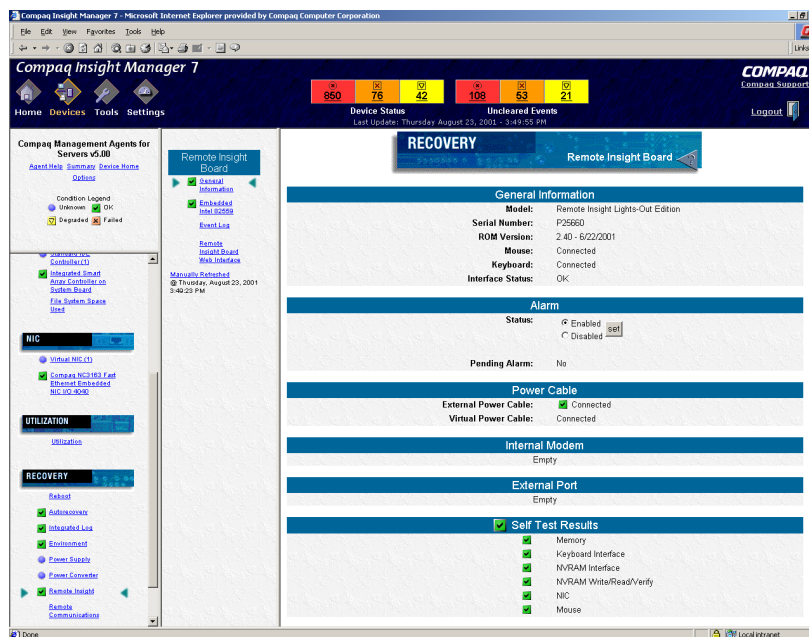


Figure 5-10: Compaq Insight Manager Recovery screen

RILOE II Event Log

A summary of the RILOE II events can be displayed. The summary lists the date, time, and a short description of each event. The most recent event is displayed first. Events that are recorded include system resets, ASR, system power loss, user logins to the RILOE II, and unsuccessful login attempts.

To view the event log:

1. Click on the RILOE II from the Management Processors screen.
2. Click **Compaq Subsystem Status Information** in the **Host Server Information** section.
3. Click **Remote Insight** in the **Recovery** section on the left side of the screen.
4. Click **Event Log** in the **Remote Insight Board** section of the screen.

The screenshot shows the Compaq Insight Manager 7 web interface. The top navigation bar includes 'Home', 'Devices', 'Tools', and 'Settings'. The 'Host Server Information' section is active, showing 'Compaq Subsystem Status Information'. The 'Recovery' section on the left contains 'Remote Insight' and 'Event Log'. The 'Event Log' section displays a table of events.

Index	Time Of Event	Description
1	08/21/2001 17:20:43	Browser logout: administrator
2	08/21/2001 13:10:20	Browser login: administrator
3	08/21/2001 11:16:01	Browser logout: administrator
4	08/21/2001 09:16:00	Browser login: administrator
5	08/17/2001 10:20:13	Browser logout: administrator
6	08/17/2001 09:20:08	Browser login: administrator
7	08/15/2001 16:18:11	Browser logout: administrator
8	08/15/2001 14:18:10	Browser login: administrator
9	08/15/2001 13:55:17	Browser logout: administrator
10	08/15/2001 11:01:13	Browser login: administrator
11	08/14/2001 20:51:50	Browser logout: administrator
12	08/14/2001 18:50:20	Browser login: administrator
13	07/19/2001 13:22:22	Browser logout: administrator
14	07/19/2001 11:17:08	Browser login: administrator
15	07/19/2001 11:11:09	Browser logout: administrator
16	07/19/2001 09:11:05	Browser login: administrator
17	07/19/2001 08:10:54	Browser logout: administrator
18	07/19/2001 09:02:28	Browser login: administrator
19	07/19/2001 08:58:16	On-board clock set, was 01/01/1990 00:00:02.
20	01/01/1990 00:00:01	Remote Insight Board reset.
21	07/19/2001 08:55:48	Remote Insight Firmware upgrade started by: administrator
22	07/19/2001 08:36:53	Browser login: administrator
23	07/18/2001 10:36:51	Server reset.
24	07/18/2001 10:25:18	Server reset.
25	07/01/2001 21:24:01	Browser logout: administrator
26	07/01/2001 21:12:00	Browser login: administrator
27	07/01/2001 21:09:33	Browser logout: administrator
28	07/01/2001 20:59:49	Browser login: administrator
29	07/01/2001 19:24:34	Remote Console Closed
30	07/01/2001 19:23:16	Browser login: administrator
31	07/01/2001 19:12:01	Server power restored.

Figure 5-11: RILOE II Event Log in Compaq Insight Manager 7

Network Interface Statistics

Statistics for the embedded network interface on the RILOE II can be displayed. The statistics can be shown in several ways to assist in management of the host server.

To view the network statistics:

1. Click on the RILOE II from the Management Processors screen.
2. Click **Compaq Subsystem Status Information** in the **Host Server Information** section.
3. Click **Remote Insight** in the **Recovery** section on the left side of the screen.
4. Click on **Embedded Intel (Model)** in the **Remote Insight Board** section.

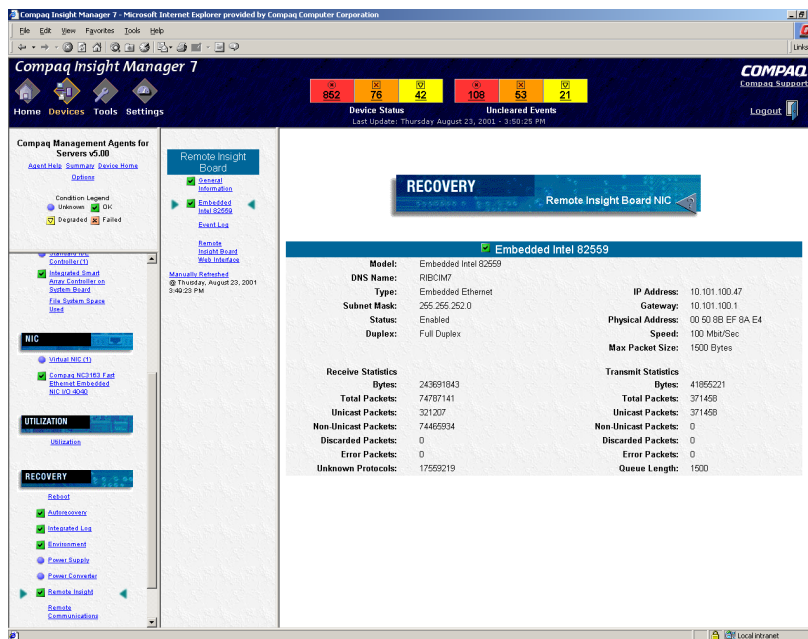


Figure 5-12: Remote Insight NIC Statistics screen

Additional help for Compaq Insight Manager 7

For detailed instructions about using Compaq Insight Manager 7 with the RILOE II, refer to the documentation provided with Compaq Insight Manager 7.

Pocket PC Access with the RILOE II

The RILOE II provides support for wireless and dial-up access from the Compaq iPAQ H3600 Series Pocket PC handheld devices. The RILOE II provides a special user-interface when connecting from the Compaq iPAQ Pocket PC.

Features on the handheld interface include:

- Remote Insight Summary
- Status
- Virtual Power Button
- Reboot Server
- Virtual Floppy Status
- Integrated Management Log
- Remote Insight Event Log
- SSL Encryption—40-bit and 128-bit options

To enable the Pocket PC Access feature:

1. Log on to the RILOE II using an account that has supervisor status.
2. Click **Global Settings** in the Administration tab.
3. Click **Enabled** for the **Remote Access with Pocket PC**.
4. Click **Apply Settings** to save the changes.

The following is an example of accessing the **RILOE II** built-in website with the Compaq iPAQ H3600 Pocket PC:

1. When the **RILOE II** built-in website is accessed, the client browser is detected. If the client is an iPAQ running Pocket Internet Explorer, specific content is provided that has been optimized for display on the small form factor screen. The initial Web page, as shown in Figure 5-13, is not encrypted. You must tap **Tap here to login to <RILOE name>**.



Figure 5-13: Initial display window for iPAQ

2. An SSL session is negotiated and a certificate warning is displayed, as shown in Figure 5-14. Tap **Yes** to proceed to the login screen.



Figure 5-14: Security certificate for iPAQ

3. In the login window, Figure 5-15, enter a valid user ID and password and tap **Go**. Do not enable the **Save Password** option.

NOTE: The user ID and password are case sensitive. The password must be at least eight characters in length.

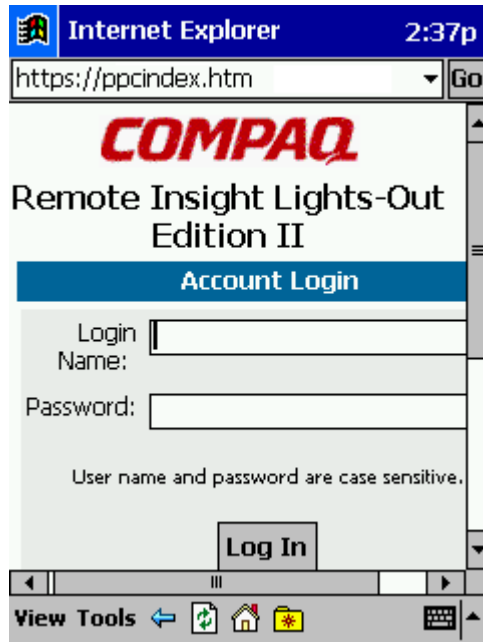


Figure 5-15: Login window for iPAQ

4. If your user ID and password are valid, you are logged in to the RILOE II and a Web page similar to that shown in Figure 5-16 displays.



Figure 5-16: Web page for iPAQ

At a minimum, the iPAQ browser interface will support a way to exercise the virtual power button, reboot the server, change the Virtual Floppy status, view the logs, and show status information.

NOTE: If you attempt to browse any unsupported Web page, you are redirected to the Web page shown in Figure 5-13, which is the initial display window.

Browsing an unsupported Web page would be considered any attempt to utilize the iPAQ browser interface for functionality beyond the scope of the functions listed. For example, attempting to access Global Settings from the iPAQ would result in being redirected to the initial display window.

In this case, because you are already logged in, tapping the **Tap here to login to <RILOE name>** option at the initial display window bypasses the login screen and takes you to the home page.

You can enable or disable the iPAQ browser interface in Global Settings only from a desktop browser. If access has been disabled, the iPAQ user will be notified by the Web page shown in Figure 5-17. Handheld access is disabled by default.



Figure 5-17: Handheld access has been disabled message

To try the Pocket PC feature, note the following:

- User authentication is required for access to the RILOE II. After authentication, the Pocket PC user remains logged in until the session is ended by closing the Pocket PC browser. To close the browser, tap the **Q** key, tap **Close active task**, and stop the browser.

Group Administration

This chapter discusses administration for a group of RILOE II boards by using the Compaq Lights-Out Configuration Utility executable file, *CPQLOCFG.EXE*. This executable can be utilized through either Compaq Insight Manager 7 or batch processing.

Features

The Compaq Lights-Out Configuration Utility allows you to perform the following functions.

- Add, modify, or delete a user.
- Obtain individual or all users' configuration information.
- Modify network settings.
- Modify global settings.
- Clear the RILOE II Event Log.
- Obtain the firmware version of the RILOE II board.
- Update the RILOE II board firmware.
- Obtain and set the Virtual Floppy status.
- Insert, copy, and eject a Virtual Floppy image.
- Configure Remote Console hotkey settings.
- Obtain and set the Virtual Power Button status.
- Obtain the server power status.
- Reset the server.

Group Administration using Compaq Insight Manager 7

After the firmware has been updated, the IT administrator can manage multiple Remote Insight boards through Compaq Insight Manager 7. The four components of group administration are Remote Insight board Command Language (RIBCL), the Compaq Lights-Out Configuration Utility, Query Definition in Compaq Insight Manager 7, and Application Launch.

Compaq Insight Manager 7 discovers the RILOE II boards as management processors. During this process, it also discovers Remote Insight board/PCI as management processors. When group administration is performed, the Remote Insight boards/PCI generates an error. Exclude these boards during the Query Definition process.

Compaq Insight Manager 7 uses the Compaq Lights-Out Configuration Utility to send an RIBCL file to a group of RILOE II boards to manage the user accounts for those boards. The boards then perform the action designated by the RIBCL file and send a response to the log file.

Remote Insight Board Command Language

The RIBCL is a dialect of XML. The information presented in the XML file is not designed to display information in a Web browser but is designed to enable secure communication between the RILOE II and the host application.

See Appendix C for a complete listing of RIBCL tags and error messages, and for sample script used for adding, modifying, or deleting a user on a RILOE II.

Compaq Lights-Out Configuration Utility

The Compaq Lights-Out Configuration Utility is used to execute the RIBCL on the RILOE II boards. The executable file for the utility is *CPQLOCFG.EXE*. This file can be downloaded from the Compaq website:

www.compaq.com/lights-out

The Compaq Lights-Out Configuration Utility must reside on the same server as Compaq Insight Manager 7. The Compaq Lights-Out Configuration Utility generates two types of error messages: runtime and syntax. A runtime error occurs when an invalid action is requested.

NOTE: Runtime errors are logged to the following directory:

C:\PROJ FILES\COMPAQ\COMPAQ INSIGHT MANAGER 7

A syntax error occurs when an invalid XML tag is encountered. When a syntax error occurs, the Compaq Lights-Out Configuration Utility stops running and logs the error in the runtime script and output log file.

NOTE: Syntax errors take the format of “Syntax error: expected ‘x’ but found ‘y’” as shown in the following example:

Syntax error: expected USER_LOGIN=*userlogin* but found USER_NAME=*username*

See Appendix C for a complete listing of errors.

Query Definition in Compaq Insight Manager 7

To group all of the RILOE II boards, log on to Compaq Insight Manager 7 and create a query.

To create the query:

1. Log on to Compaq Insight Manager 7.
2. Click **Devices** in the navigation bar on the top left side of the screen.
3. Click **Queries** then click **Device**.
4. Locate the **Personal Queries** section in the main window. If a query category exists, proceed to step 7, otherwise proceed to step 5.
5. Click **New** to create a new category. For this example, the name of the new category is RIB Cards. Click **Create Category**.
6. Click **Queries** page to return to the **Device Queries** screen.
7. Click **New**, within the appropriate query category, to open the **Create/Edit Query** screen where the query definition is created.
8. Define your query name, for example Mgmt Processors.
9. Select **Device(s) of type** within the **Query Criteria Selection** frame to create a query definition.
10. Click **type** in the Query Description frame, which opens a pop-up window where you define the device type.
11. Check **Management Processor** and click **OK**.

12. Click **Save** to return to the **Device Query** screen.
13. Find the newly created query in the appropriate query category and click the query name to run it for verification.
14. Click **Overview** on the left side of the screen after the verification has taken place. The initial page for Devices opens.

Application Launch using Compaq Insight Manager 7

The application launch combines the RIBCL, the Compaq Lights-Out Configuration Utility, and the query definition to manage the group administration for the RILOE II boards.

To create an Application Launch Task:

1. Click **Devices** in the navigation bar on the top left side of the screen
2. Click **Tasks** to open the **Tasks** screen.
3. Click **New Control Task**. A drop-down menu displays.
4. Click **Application Launch** from the drop-down menu to open the **Create/Edit Task** screen.
5. Type the full path and name for the Compaq Lights-Out Configuration Utility in the area provided. If the *CPQLOCFG.EXE* file is in the root directory of Compaq Insight Manager 7 on the C:\ drive, then the path is:
6. Type the parameters in the area provided. Compaq Insight Manager 7 requires the following parameters for the Compaq Lights-Out Configuration Utility:

C:\CIMXE20\CPQLOCFG.EXE

- F—Full path of the RIBCL file name
- V—Verbose message (optional)

If the RIBCL file is in the root directory of Compaq Insight Manager 7 on the C:\ drive the parameters are:

-F C:\CIMXE20\MANAGEUSERS.TXT -V

NOTE: Compaq Insight Manager 7 does not allow the -L parameter to designate an output log file. A default log file named with the DNS name or the IP address is created in the same directory where CPQLOCFG is launched.

7. Click **Next**. A screen displays with options for naming the task, defining the query association, and setting a schedule for the task.
8. Enter a task name in the **Enter a name for this task** field.
9. Select the query that had been created earlier, for example Mgmt Processors.
10. Click **Schedule** to define when the Application Launch Task will run. A schedule configuration window displays.
11. Click **OK** to set the schedule.

NOTE: The default schedule for a control task is **Now**.

12. Click **Finish** to save the Application Launch Task.
13. Click **Execute a Task** symbol, which is to the green triangle, to execute the group administration.

Batch Processing

Group administration can also be delivered to the RILOE II boards through batch processing. The components used by batch processing are the Compaq Lights-Out Configuration Utility, an RIBCL file, and a batch file.

Compaq Lights-Out Configuration Utility

The Compaq Lights-Out Configuration Utility is used to execute the RIBCL on the RILOE II boards. The executable for the Compaq Lights-Out Configuration Utility is *CPQLOCFG.EXE*. This file can be downloaded from the Compaq website at:

www.compaq.com/lights-out

The following example shows a sample batch file that can be used to perform the Group Administration for the RILOE II:

```
REM Updating the RILOE II board
REM Repeat line for each board to be updated
REM
CPQLOCFG -S RIB1 -F C:\CIMXE20\USERS.TXT -L RIB1LOG.TXT -V
CPQLOCFG -S RIB2 -F C:\CIMXE20\USERS.TXT -L RIB2LOG.TXT -V
CPQLOCFG -S RIB3 -F C:\CIMXE20\USERS.TXT -L RIB3LOG.TXT -V
.
.
.
CPQLOCFG -S RIBN -F C:\CIMXE20\USERS.TXT -L RIBNLOG.TXT -V
```

where:

- -S is the switch that determines the RILOE II that is to be updated. This switch is either the DNS name or IP address of the target server.

Do not use this switch if launching from Compaq Insight Manager 7.

- -F is the switch that gives the location and name of the RIBCL file that contains the actions to be performed on the board.
- -L is the switch that defines where the log file will be generated and what the file name will be. If this switch is omitted, a default log file named with the DNS name or the IP address is created in the same directory where CPQLOCFG is launched.

Do not use this switch if launching from Compaq Insight Manager 7.

- -V is the optional switch that turns on the verbose message return. The resulting log file will contain all commands sent to the RIB board, all responses from the RIB board, and any errors. By default, only errors and responses from GET commands will be logged without this switch.

-C will cause CPQLOCFG to check the syntax of the XML, but not open a connection to the RIB.

The switches -L and -V may or may not be set depending on the IT administrator's preferences.

If it is not in the same directory, be sure that the Compaq Lights-Out Configuration Utility is in a directory referenced by the PATH environment variable. Any log files generated will be placed in the same directory as the Compaq Lights-Out Configuration Utility executable.

NOTE: The Compaq Lights-Out Configuration Utility overwrites any existing log files.

Compaq Lights-Out DOS Utility

Compaq Lights-Out DOS Utility (CPQLODOS) is a subset of the CPQLOCFG utility. CPQLODOS provides a command-line utility that a user can use to bootstrap a RILOE II configuration into a new server.

The CPQLODOS utility allows the user to configure a subset of the configuration parameters exposed through:

- F8 configuration
- The RILOE II GUI

CPQLODOS is not intended for continued administration. The Compaq Lights-Out Configuration Utility should be use for administration purposes.

For more information on the CPQLODOS utility, refer to Compaq SmartStart Scripting Tool Kit.

Troubleshooting the RILOE II

This chapter contains the following troubleshooting sections:

- Resetting the RILOE II Board
- Login Name and Password Not Accepted
- Troubleshooting Video and Monitor Problems
- Troubleshooting Alert and Trap Problems
- Troubleshooting NetWare Driver Problems
- Troubleshooting Miscellaneous Problems
- Interpreting LED Error Codes
- Event Log Entries

Resetting the RILOE II Board

There may be times when you need to reset the RILOE II board. Follow the instructions for your server's operating system to reset the board. The RILOE II has a built in reset that resets the board if it detects a problem.

NOTE: Resetting the RILOE II board in a Novell NetWare server at the command line is not supported.

To reset the RILOE II in a Windows NT server, follow these steps:

1. In Control Panel, select **Services** and stop the Insight Agents.
2. In Control Panel, select **Insight Agents**.
3. Select **Remote Insight** and click **Reset**.
4. Restart the Insight Agents.

Login Name and Password Not Accepted

If you have connected to the board but it does not accept your login name and password, you must verify that your login information is configured correctly. Connect to the RILOE II using your browser, log in with a user name that has supervisor status, and reenter the login name and password that are not being accepted.

NOTE: The login name and password are case sensitive.
The ROM-Based Setup Utility F8 can also be used to correct login problems.
After five login attempts the board will timeout and it may take a minute for it to reset.

No Video after Installing the RILOE II and Powering On the Server

The RILOE II contains an integrated VGA controller. When the controller board is first installed, the server detects this controller and attempts to use it by switching video from the server's integrated video controller. Therefore, your monitor must be connected to the RILOE II board. See the "Monitor Cable Connection" section in Chapter 2.

IMPORTANT: Some Compaq servers contain PCI-based VGA controllers. These controllers must be removed to configure the VGA controller on the RILOE II board.

See the "Determining an Available Slot" section in Chapter 2 to ensure that the board is installed in an appropriate slot. If your server is not listed in Table 2-1, refer to the Compaq website for an updated table:

www.compaq.com/lights-out

Some Compaq servers require disabling of the embedded video before installing the RILOE II board. The embedded video controller can be disabled by powering off the server and setting system configuration maintenance switch 1 to ON.

The following servers require the embedded video to be disabled:

- ProLiant ML330
- ProLiant ML350

Cannot Connect to the Board through the NIC

If you cannot connect to the board through the NIC, try any or all of the following troubleshooting methods:

- Confirm that the green LED indicator (link status) on the board's connector bracket is on. This condition indicates a good connection between the PCI NIC and the network hub.
- Look for intermittent flashes of the green LED indicator, this indicates normal network traffic.

- Run the ROM-Based Setup Utility F8 to confirm that the NIC is enabled and to verify the assigned IP address and subnet mask.
- From another workstation on the same network, ping the IP address of the NIC.
- Attempt to connect with browser software by typing the IP address of the NIC as the URL. You can see the Remote Insight home page from this address.
- Reset the RILOE II.

To reset the RILOE II in a NetWare server, at the command line enter:

```
RIB Reset
```

To reset the RILOE II in a Windows NT server and Windows 2000, follow these steps:

1. In Control Panel, select **Services** and stop the Insight Agents.
2. In Control Panel, select **Insight Agents**.
3. Select **Remote Insight** and click **Reset**.
4. Restart the Insight Agents.

Cannot Get SNMP Information from Compaq Insight Manager 7 when Connected to the Remote Insight Network Interface

The agents running on the managed server supply the SNMP information provided to Compaq Insight Manager 7. For those agents to pass information through the RILOE II, the Remote Insight device drivers must be installed. See the “Installing RILOE II Device Drivers” section in Chapter 4 for installation instructions.

If you have installed the drivers and agents for the RILOE II, verify that the RILOE II and the management PC are on the same subnet. You can verify this quickly by pinging the Remote Insight board from your management PC. See your network administrator for proper routes to access the network interface of the RILOE II.

Web Browser Does Not Connect to the RILOE II IP Address

If your Web browser software is configured to use a proxy server, it will not connect to the RILOE II IP address. To resolve this issue, configure your browser not to use the proxy server for the IP address of the RILOE II. For example, in Internet Explorer, click **Tools**, **Internet Options**, **Connections**, **LAN settings**, then click **Advanced** in the **Proxy server** section.

NOTE: If your RILOE II is using 128-bit encryption, ensure that your client browser supports 128-bit encryption.

Troubleshooting Alert and Trap Problems

Unable to Receive Compaq Insight Manager 7 Alarms (SNMP Traps) from the RILOE II

Ensure that the correct alert types are enabled.

1. A user with supervisor access must sign on to the RILOE II.
2. Click **Global Settings** on the **Administrator** tab.
3. Enter the SNMP IP addresses in the **SNMP Trap Destination** fields.

Troubleshooting NetWare Driver Problems

When a NetWare server is started, each driver loaded in the *AUTOEXEC.NCF* is executed. If a problem is found during execution, an initialization error is displayed. Table 7-1 shows potential initialization error messages and suggested courses of action.

Table 7-1: NetWare Error Messages

Error Message	Action
Adapter IRQ or memory settings not set	Run the Compaq System Configuration Utility.
Unable to allocate resource tag	Apply any relevant NetWare patches. Contact your service provider.
Unable to register NetWare hardware options	Apply any relevant NetWare patches. Run Compaq Diagnostics on the RILOE II.
Remote Insight interface type unknown	Upgrade CPQRI.NLM to a newer version.
Unable to initialize the RILOE II	Run Compaq Diagnostics on the RILOE II.
Unable to allocate memory	Check available NetWare resources.
RILOE II not found	The RILOE II board is not installed in the server. The board must be installed before loading the device driver.

Troubleshooting Miscellaneous Problems

Time or Date of the Entries in the Event Log is Incorrect

The time and date are updated by Insight Management agents on supported network operating systems. The RILOE II time and date get updated at boot up and the agents automatically update the time and date periodically.

Cannot Reboot the Server

If you have added the RILOE II board to a previously configured server, run the ROM-Based Setup Utility F8 to properly configure the RILOE II board with information about that server. See Chapter 4 for the steps to configure your RILOE II using the ROM-Based Setup Utility F8.

The RILOE II must be installed in the supported PCI slot in your server. See the “Determining an Available Slot” section in Chapter 2 to ensure that the board is installed in an appropriate slot. If your server is not listed, refer to the Compaq website for an updated table:

www.compaq.com

NOTE: If you are using the Virtual Power Button feature, verify that the Remote Insight cable, or the Virtual power button cable has been installed correctly.

Cannot Upgrade the Board's Firmware

If you attempt to upgrade the firmware of the RILOE II and the board does not respond or does not accept the firmware upgrade, you must force the ROM upgrade procedure by changing the default switch settings of SW3 as shown in Table 7-2.

Table 7-2: Switch Settings (SW3) Force ROM Upgrade

Switch	Default	Force ROM Upgrade
1	OFF	OFF
2	OFF	OFF
3	OFF	ON
4	OFF	OFF

Upgrade the firmware of the RILOE II using a ROMPaq diskette. When the firmware upgrade is complete, return the switches to the default position.

Resetting the RILOE II to Factory Default Settings

To reset the RILOE II to the factory default settings, you can use the ROM-Based Setup Utility F8 or you can use the jumper settings.

To restore the factory defaults using F8:

1. Restart or power up the server.
2. Press the **F8** key to enter ROM-Based Setup Utility when prompted.
3. Select **File** then **Set Defaults**.
4. Press the **Enter** key to reset the RILOE to the default settings.

To reset the server using the switch settings change the SW3 settings as shown in Table 7-3.

1. Power down the server.
2. Remove the RILOE II and change the switch settings to the factory default setting as shown in Table 7-3 and install the RILOE II back into the server.

Table 7-3: Switch Settings (SW3) Factory Defaults

Switch	Default	Factory Default Settings
1	OFF	OFF
2	OFF	OFF
3	OFF	ON
4	OFF	ON

3. Power up the server and wait until the number 7 LED, as shown in the following section, is the only one flashing on the RILOE II.
4. Power down the server, remove the board and return the switch settings back to the default position as shown in Table 7-3 and install the board back into the server.
5. Power up the server.

Interpreting LED Indicators

The LED indicators are located on the front of the RILOE II board (with the LED indicators on top). The LED indicators have the following assignments:

FB	7	6	5	4	3	2	1	0
----	---	---	---	---	---	---	---	---

During the initial boot of the RILOE II, the LED indicators will flash randomly. After the board has booted, the 7 LED will flash every second. The LED indicators (0 through 6) will light up and the FB will light up after the system has booted to indicate a hardware failure. If a hardware failure is detected, reset the RILOE II board. See the “Resetting the RILOE II Board” section of this chapter. If you continue to have problems you can contact the Compaq Technical Phone Support Center at 1-800-OK-COMPAQ or visit the Compaq website at:

www.compaq.com

Event Log Entries

Table 7-4 lists Event Log Entries and explanations to help you troubleshoot the RILOE II board. In the table, USER, #, and IP ADDRESS are used to designate that a specific user, number, or IP address is displayed, as appropriate.

Table 7-4: Event Log Display

Event Log Display	Event Log Explanation
Server power failed	Displays when the server power fails
Browser login: IP address	Displays the IP address for the browser that logged in
Server power restored	Displays when the server power is restored
Browser logout: IP address	Displays the IP address for the browser that logged out

continued

Table 7-4: Event Log Display *continued*

Event Log Display	Event Log Explanation
Server reset	Displays when the server is reset.
Failed Browser login - IP Address: IP address	Displays when a browser login fails.
Remote Insight Self Test Error: #	The Remote Insight board has failed an internal test. The probable cause is a critical component has failed. Further use of this board is not recommended.
Remote Insight Board reset	Displays when the board is reset.
On-board clock set; was #:#:#:#:#	Displays when the on board clock is set.
Server logged critical error(s)	Displays when the server logs critical errors.
Event log cleared by: USER	Displays when a user clears the event log.
Keyboard cable disconnected	Displays when the keyboard cable is disconnected.
Keyboard cable connected	Displays when the keyboard cable is connected.
Remote Insight Board reset to factory defaults	Displays when the board is reset to the default settings.
Remote Insight Board reset	Displays when the board is reset.
Remote Insight ROM upgrade to #	Displays when the ROM has been upgraded.
Remote Insight Board reset for ROMPAQ upgrade	Displays when the board is reset for the ROM upgrade.
Remote Insight Board reset by user diagnostics	Displays when the board is reset by a user diagnostics.

continued

Table 7-4: Event Log Display *continued*

Event Log Display	Event Log Explanation
Power restored to Remote Insight Board	Displays when the power is restored to the board.
Remote Insight Board reset by watchdog	A non-critical error has occurred in the Remote Insight board and the board has recovered by resetting itself. If this persists call customer support.
Remote Insight Board reset by host	Displays when the board is reset by the server.
Recoverable Remote Insight Error, code #	A non-critical error has occurred in the Remote Insight board and the board has recovered by resetting itself. If this persists call customer support.
SNMP trap delivery failure: IP address	Displays when the SNMP trap does not connect to the specified IP address.
Test SNMP trap alert failed for: IP address	Displays when the SNMP trap does not connect to the specified IP address.
Power outage SNMP trap alert failed for: IP address	Displays when the SNMP trap does not connect to the specified IP address.
Server reset SNMP trap alert failed for: IP address	Displays when the SNMP trap does not connect to the specified IP address.
Illegal login SNMP trap alert failed for: IP address	Displays when the SNMP trap does not connect to the specified IP address.
Keyboard cable SNMP trap alert failed for: IP address	Displays when the SNMP trap does not connect to the specified IP address.
Diagnostic error SNMP trap alert failed for: IP address	Displays when the SNMP trap does not connect to the specified IP address.

continued

Table 7-4: Event Log Display *continued*

Event Log Display	Event Log Explanation
Host generated SNMP trap alert failed for: IP address	Displays when the SNMP trap does not connect to the specified IP address.
Remote Insight network link up	Displays when the network is connected to the board.
Remote Insight network link down	Displays when the network is not connected to the board.
Mouse cable SNMP trap alert failed for: IP address	Displays when the SNMP trap does not connect to the specified IP address.
Mouse cable connected	Displays when the mouse cable is connected.
Mouse cable disconnected	Displays when the mouse cable is disconnected.
External power adapter connected	Displays when the external power adapter is connected.
External power adapter disconnected	Displays when the external power adapter is disconnected.
RIB Firmware upgrade started from browser by: USER	Displays when a user starts a firmware upgrade.
Remote Floppy Inserted by: USER	Displays when a user inserts the remote floppy.
Host server reset by: USER	Displays when a user resets the host server.
Host server powered OFF by: USER	Displays when a user powers off a host server.
Host server powered ON by: USER	Displays when a user powers on a host server.
Virtual Floppy Inserted by: USER	Displays when a user inserts a virtual floppy.

continued

Table 7-4: Event Log Display *continued*

Event Log Display	Event Log Explanation
Remote Console login: USER	Displays when a user logs on a remote console.
Remote Console Closed	Displays when a remote console is closed.
Failed Console login - IP Address: IP address	Displays a failed console login and IP address.
Handheld login: IP address	Displays when a handheld logs in.
Handheld logout: IP address	Displays when a handheld logs out.
Failed Handheld login - IP Address: IP address	Displays a failed handheld login and IP address.
Added User: User	Displays when a user adds a user.
User Deleted by: User	Displays when a user deletes a user.
Modified User: User	Displays when a user modifies a user.
XML login: User	Displays when a user logs on.
XML logout:: User	Display when a user logs out.
Failed XML login: User	Displays when a users login fails.
XML: Modified User	Displays when a user modifies a user.
RIB Firmware upgrade started from XML by: User	Displays when a firmware upgrade is started.
XML: Added User: User	Displays when a user adds a user.
XML: User Deleted: User	Displays when a user deletes a user.
User has been deleted	Displays when a user has been deleted.
System PCI config error, Code	Displays when there is a PCI configuration error.
Subsystem Failure, code	Displays Subsystem failures.

Regulatory Compliance

Federal Communications Commission Notice

Part 15 of the Federal Communications Commission (FCC) Rules and Regulations has established Radio Frequency (RF) emission limits to provide an interference-free radio frequency spectrum. Many electronic devices, including computers, generate RF energy incidental to their intended function and are, therefore, covered by these rules. These rules place computers and related peripheral devices into two classes, A and B, depending upon their intended installation. Class A devices are those that may reasonably be expected to be installed in a business or commercial environment. Class B devices are those that may reasonably be expected to be installed in a residential environment (that is, personal computers). The FCC requires devices in both classes to bear a label indicating the interference potential of the device as well as additional operating instructions for the user.

The rating label on the device shows which class (A or B) the equipment falls into. Class B devices have an FCC Logo or FCC ID on the label. Class A devices do not have an FCC Logo or FCC ID on the label. Once the class of the device is determined, refer to the following corresponding statement.

Class A Equipment

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at personal expense.

Class B Equipment

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or television technician for help.

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Compaq Computer Corporation may void the user's authority to operate the equipment.

Cables

Connections to this device must be made with shielded cables with metallic RFI/EMI connector hoods in order to maintain compliance with FCC Rules and Regulations.

Declaration of Conformity for Products Marked with FCC Logo, United States Only

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

For questions regarding your product, contact:

Compaq Computer Corporation
P. O. Box 692000, Mail Stop 530113
Houston, Texas 77269-2000

Or call 1-800-652-6672 (1-800-OK COMPAQ). For continuous quality improvement, calls may be recorded or monitored.

For questions regarding this FCC declaration, contact:

Compaq Computer Corporation
P. O. Box 692000, Mail Stop 510101
Houston, Texas 77269-2000

Or call 281-514-3333.

To identify this product, refer to the part, series, or model number found on the product.

Canadian Notice (Avis Canadien)

Class A Equipment

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Class B Equipment

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

European Union Notice

Products with the CE Marking comply with both the EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community.

Compliance with these directives implies conformity to the following European Norms (in parenthesis are the equivalent international standards):

- EN55022 (CISPR 22)—Electromagnetic Interference
- EN50082-1 (IEC801-2, IEC801-3, IEC801-4)—Electromagnetic Immunity
- EN60950 (IEC950)—Product Safety

Electrostatic Discharge

To prevent damage to the system, be aware of the precautions to follow when setting up the system or when handling parts. A discharge of static electricity from a finger or other conductor can damage system boards or other static-sensitive devices. This type of damage can reduce the life expectancy of the device.

To prevent electrostatic damage, observe the following precautions:

- Avoid hand contact by transporting and storing products in static-safe containers.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free workstations.
- Place parts on a grounded surface before removing them from their containers.
- Avoid touching pins, leads, or circuitry.
- Always be properly grounded when touching a static-sensitive component or assembly.

Grounding Methods

There are several methods for grounding. Use one or more of the following methods when handling or installing electrostatic-sensitive parts:

- Use a wrist strap connected by a ground cord to a grounded workstation or computer chassis. Wrist straps are flexible straps with a minimum of 1 megaohm \pm 10 percent resistance in the ground cords. To provide proper grounding, wear the strap snug against the skin.
- Use heel straps, toe straps, or boot straps at standing workstations. Wear the straps on both feet when standing on conductive floors or dissipating floor mats.
- Use conductive field service tools.
- Use a portable field service kit with a folding, static-dissipating work mat.

If you do not have any of the suggested equipment for proper grounding, have a Compaq authorized reseller install the part.

NOTE: For more information about static electricity, or for assistance with product installation, contact your Compaq authorized reseller.

Remote Insight Board Command Language

Remote Insight Board Command Language

This section describes the Remote Insight Board Command Language (RIBCL) tags, the parameters associated with the tags, and the errors that might occur if an invalid action is requested. Each of the tags, along with their respective parameters and error codes, are discussed in this guide and are listed in the following sections.

IMPORTANT: Comments should not interrupt a command. An error message will be generated in this case.

RIBCL Guidelines

The following sections describe some general guidelines when utilizing RIBCL.

XML Header

The XML header must be the first item that is not white space to be sent to the RILOE II. It tells the RILOE II that the connection is supposed to be an XML connection, not an HTTP connection. The XML header is built into the utility and has the following format:

```
<?xml version="2.0"?>
```

General Guidelines

All of the commands are grouped by functionality. All commands that manipulate user information are grouped together. This allows the firmware to view the data to be manipulated as a block of information, similar to a text document, allowing for multi-threaded access of the different kinds of information.

An opening command opens a database. The database remains open until the matching closing command is sent. All changes made within a single command block are applied simultaneously when the database is closed. Any errors within the block will cause the enclosed changes to be discarded.

An example of an opening and its matching closing command are as follows:

```
<USER_INFO>  
</USER_INFO>
```

In the following sections, the opening and closing commands will be displayed in the example.

Data Types

There are three data types that are allowed in the parameter. They are:

- String
- Specific string
- Boolean string

String

A string is any text enclosed in quotes. It can include spaces, numbers, or any printable character. A string may start with either a double or single quote and it must end with the same type of quote. The string may contain a quote if it is different from the string delimiter quotes.

For example, if a string is started with a double quote, a single quote can be used within the string and the string must be closed with a double quote.

Specific String

A specific string is one that is required to contain certain characters. In general, you will have a choice of words that are accepted as correct syntax and all other words will produce an error.

Boolean String

A Boolean string is a specific string that specifies a “yes” or “no” condition. Acceptable Boolean strings are “yes,” “y,” “no,” “n,” “true,” “t,” “false,” and “f.” These strings are not case sensitive.

RIBCL

This command is used to start and end an RIBCL session. You can use it only once to start an RIBCL session, and it must be the first command to display in the script. The RIBCL tags are required to mark the beginning and the end of the RIBCL document.

Example:

```
<RIBCL VERSION="2.0">  
</RIBCL>
```

RIBCL Parameters

VERSION is a string that indicates the version of the RIBCL that the client application is expecting to use. The VERSION string is compared to the version of the RIBCL that the RILOE II is expecting, and an error is returned if the string and the version do not match. The only acceptable string value for the VERSION parameter is "2.0." The VERSION parameter can never be blank.

RIBCL Runtime Errors

The possible RIBCL error messages include:

"Unsupported RIBCL version. The supported version is 2.0"
"Version must not be blank"

LOGIN

The LOGIN command provides the RILOE II with the information that will be used to authenticate the user who will perform the RIBCL actions. The specified user must have supervisor privileges. If the user does not have supervisor permission or is not a valid user, then an error message will be returned. The application that sent the login name is then expected to send a new LOGIN command or to send the /RIBCL command to terminate the connection.

Example:

```
<LOGIN_USER_LOGIN="username" PASSWORD="password">  
</LOGIN>
```

NOTE: Users with user-only privileges are able to change some of their own user settings. The user settings that can be changed are:

PASSWORD
SNMP_ADDRESS
OS_TRAPS
RIB_TRAPS

LOGIN Parameters

USER_LOGIN—is the login name of the user during the session and has a maximum length of 48 characters. The user must exist as a valid user with supervisor privileges in the RILOE II. This data string is case sensitive and can never be blank.

PASSWORD—is the password of the user that will log in to the RILOE II. The password has a minimum length of 8 characters. The password is case sensitive and can never be blank.

LOGIN Runtime Errors

The possible Runtime error messages include:

User login name was not found
Password must not be blank

USER_INFO

This command may only display within a LOGIN command. When the RILOE II parses this command, it reads the user information database into memory and gets ready to edit it. Only commands that are USER_INFO type commands are valid inside the USER_INFO block. The USER_INFO command generates a response that indicates to the host application whether the user information was successfully read or not. If the user information is open for writing by another application, then this call will fail.

Example:

```
<USER_INFO MODE="write">
</USER_INFO>
```

USER INFO Parameters

MODE—This specific string parameter has a maximum length of ten characters. It tells the Rib what you intend to do with the user information. Valid arguments are “read” and “write”. If it is open in write mode, then both reading and writing are enabled and other users will be unable to open the user information. If it is open in read mode, then this instance will not be able to change any user data. The argument is not case sensitive. This parameter must never be blank.

USER INFO Runtime Errors

The possible Runtime error messages include:

```
Mode parameter must not be blank
```

ADD_USER

The ADD_USER command is used to add a user to the RILOE II. All of the attributes that pertain to the user are set using the parameters described below. For this command to work, the user must not already exist. Use the MOD_USER command to change an existing user’s information instead. The ADD_USER command must display within a USER_INFO element and USER_INFO must be in write mode.

Example:

```
<RIBCL VERSION="2.0">
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">
    <USER_INFO MODE="write">
      <ADD_USER
        USER_NAME    ="Admin User"
        USER_LOGIN    ="username"
        PASSWORD       ="password">

        <SUPERVISOR_PRIV value ="No" />
        <LOGIN_PRIV value ="Yes" />
        <REMOTE_CONS_PRIV value ="Yes" />
        <RESET_SERVER_PRIV value ="Yes" />
        <VIRTUAL_MEDIA_PRIV VALUE="YES" />
        <CLIENT_RANGE VALUE="" />
      </ADD_USER>
    </USER_INFO>
  </LOGIN>
</RIBCL>
```

ADD_USER Parameters

USER_NAME—is the actual name of the user to be added. The **USER_NAME** parameter has a maximum length of 48 characters and can be any ASCII string containing printable characters, including white spaces. This string is used for display only and must never be blank.

USER_LOGIN—is the name that the user will type to log into the RILOE II. The **USER_LOGIN** parameter has a maximum length of 48 characters, can be an ASCII string containing any combination of printable characters, and is case sensitive. This parameter must never be blank.

PASSWORD—is the password that will be associated with the user. This parameter has a minimum length of 8 characters and is an ASCII string that may contain any combination of printable characters. **PASSWORD** must be at least eight characters long and cannot contain both single and double quote characters. The RILOE II treats this string as being case sensitive. This parameter must never be blank.

The following five parameters control a user's rights. These parameters are optional and may have a "Yes" or "No" value, which grants or denies the right. If the parameter is not entered, the value is assumed to be "No."

SUPERVISOR_PRIV—is a Boolean parameter that grants all of the other permissions, even those that are marked with an “No” value or are blank. This parameter is optional and must be left out if the user should not get supervisory privileges.

LOGIN_PRIV—is a Boolean parameter that allows the user to log into the RILOE II and use resources such as Web pages. Marking this parameter with an “No” value effectively disables the account without deleting it. (See the SUPERVISOR_PRIV parameter.)

REMOTE_CONS_PRIV—is a Boolean parameter that gives permission for the user to access the Remote Console functionality of the RILOE II. Leaving out this parameter will deny the user Remote Console privileges, unless they have supervisory privileges.

RESET_SERVER_PRIV—is a Boolean parameter that gives the user permission to remotely reset the server or power it down. Leaving out this parameter will deny the user server reset privileges, unless they have supervisory privileges.

VIRTUAL_FLOPPY_PRIV—is a Boolean parameter that gives the user permission to access the virtual floppy functionality of the RILOE II. Leaving out this parameter will deny the user virtual floppy privileges, unless they have supervisory privileges.

IMPORTANT: The following parameters limit the address from which the user may log in. If the user attempts to log in from other addresses, the request will be refused as though the user has typed an incorrect password. Exactly one of the following parameters must be present but should not be entered if you want to indicate that there is no limit. If the parameter is not blank, then the client addresses will be limited as indicated.

CLIENT_IP—this parameter has a maximum length for 50 characters. This parameter specifies a single IP address that the user may use to connect to the RILOE II. This must be a complete numerical IP address.

CLIENT_RANGE—this parameter has a maximum length of 50 characters. It specifies a range of address that the user is allowed to access the RILOE II from. Two addresses are specified with a dash (-) between them. They both must valid and complete TCP/IP numerical addresses. Any address that falls between them numerically will be accepted. This data parameter is mutually exclusive to the CLIENT_IP and the DNS_NAME data parameters.

DNS_NAME - specifies a DNS name with which the user logs in to the RILOE II. DNS_NAME has a maximum length of 50 characters. This parameter is mutually exclusive to the CLIENT_IP and the CLIENT_RANGE data parameters.

ADD_USER Runtime Errors

The possible ADD_USER error messages include:

```
Login name is too long. Maximum length is 48 characters
Password is too short. Minimum length is 8 characters
Password is too long
User table is full. No room for new user
Cannot add user. The user name already exists
User information is open for read-only access. Write access
is required for this operation
User name cannot be blank
User login ID cannot be blank
Password must not be blank
```

DELETE_USER

The DELETE_USER command is used to remove an existing user's information from the RILOE II. Before this command is used, the USER_INFO command must have been issued with the mode set to "write."

Example:

```
<RIBCL VERSION="2.0">
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">
    <USER_INFO MODE="write">
      <DELETE_USER USER_LOGIN="username"/>
    </USER_INFO>
  </LOGIN>
</RIBCL>
```

DELETE_USER Parameters

USER_LOGIN—is the login name of the user that you want to delete. This parameter has a maximum length of 48 characters and must be an ASCII string containing any combination of printable characters. The RILOE II treats this string as case sensitive.

DELETE_USER Runtime Errors

The possible DELETE_USER errors include:

- User information is open for read-only access. Write access is required for this operation
- Cannot delete user information for currently logged in user
- User login name was not found
- User login name must not be blank

MOD_USER

This command is used to modify an existing user's information. It is not required to enter any of the fields except for the first one, which specifies which user to modify. If any parameter does not need to be modified, it should be omitted. MOD_USER must display within a USER_INFO parameter and USER_INFO must be in write mode.

With the MOD_USER command, the IT administrator can modify the user's login name. It is not possible to modify the user name that is currently being used to gain access to the RILOE II, if the user is a supervisor.

Example:

```
<RIBCL VERSION="2.0">
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">
    <USER_INFO MODE="write">
      <MOD_USER USER_LOGIN="loginname">
        <USER_NAME value="username"/>
        <PASSWORD value="password"/>
        <SUPERVISOR_PRIV value="No"/>
        <LOGIN_PRIV value="Yes"/>
        <REMOTE_CONS_PRIV value="Yes"/>
        <RESET_SERVER_PRIV value="No"/>
        <VIRTUAL_FLOPPY_PRIV value="No"/>
        <CLIENT_IP value="255.255.255.255"/>
      </MOD_USER>
    </USER_INFO>
  </LOGIN>
</RIBCL>
```

MOD_USER Parameters

USER_LOGIN—is the login name of the user to be modified. This login name has a maximum length of 48 characters. The name is case sensitive and must be an ASCII string containing any combination of printable characters. This parameter must never be blank.

USER_NAME—is the actual name of the user and has a maximum length of 48 characters. This name can be any ASCII string containing printable characters, including white space. This string is used for display only. If this parameter is not specified, then the value for the specified user is not changed.

PASSWORD—is the password that will be associated with the user. This parameter has a minimum length of 8 characters and is an ASCII string that may contain any combination of printable characters. The password must be at least eight characters long and cannot contain both single and double quote characters. The RILOE II treats this string as case sensitive. If this parameter is not specified, then the value for the specified user is not changed.

SUPERVISOR_PRIV—is a Boolean parameter that grants all of the other permissions even those that are marked with an “No” value or are blank. If this parameter is left not specified, then the current value is not changed.

LOGIN_PRIV—is a Boolean parameter that allows the user to log in to the RILOE II and use resources such as Web pages. Marking this with an “No” value disables the account without deleting it. (See the SUPERVISOR_PRIV parameter.) If this parameter is left not specified, then the current value is not changed.

REMOTE_CONS_PRIV—is a Boolean parameter that gives permission for the user to access the remote console functionality of the RILOE II. Note that the SUPERVISOR_PRIV parameter overrides REMOTE_CONS_PRIV if it is specified as being on. If this parameter is not specified, then the current value is not changed.

RESET_SERVER_PRIV—is a Boolean parameter that gives the user permission to remotely reset the server or power it down. Note that the SUPERVISOR_PRIV parameter overrides RESET_SERVER_PRIV if the value is specified as being on. If this parameter is not specified, then the current value is not changed.

VIRTUAL_MEDIA_PRIV—is a Boolean parameter that gives the user permission to access the virtual floppy functionality of the RILOE II. Leaving out this parameter will deny the user virtual floppy privileges, unless they have supervisory privileges.

IMPORTANT: The following parameters limit the address from which the user may log in. If the user attempts to log in from another address, the address will be refused as though the user has typed an incorrect password. Exactly one of the following parameters may be present but may be blank to indicate that there is no limit. (See the example for MOD_USER.) If the parameter is not blank, then the client addresses will be limited as indicated. If the parameter is not specified, the current value is not changed.

CLIENT_IP—specifies a single IP address that the user may use to connect with the RILOE II. CLIENT_IP has a maximum length of 50 characters and must be a complete numerical IP address. This data parameter is mutually exclusive to the CLIENT_RANGE and the DNS_NAME data parameters.

CLIENT_RANGE—specifies a range of addresses from which the user is allowed to access the RILOE II. CLIENT_RANGE has a maximum length of 50 characters. Two addresses are separated by a dash (-), and both addresses must be valid and complete TCP/IP numerical addresses. Any address that falls between them numerically will be accepted. This data parameter is mutually exclusive to the CLIENT_IP and the DNS_NAME data parameters.

DNS_NAME - specifies a DNS name with which the user logs into the RILOE II. DNS_NAME has a maximum length of 50 characters and is mutually exclusive to the CLIENT_IP and the CLIENT_RANGE data parameters.

MOD_USER Runtime Errors

The possible MOD_USER error messages include:

```
Login name is too long. Maximum length is 48 characters
Password is too short. Minimum length is 8 characters
Password is too long
User information is open for read-only access. Write access
is required for this operation
User login ID cannot be blank
Cannot modify user information for currently logged user
This user is not logged in
User login name was not found
```

GET_USER

The GET_USER command returns the user's information, excluding the password.

Example:

```
<RIBCL VERSION="2.0">  
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">  
    <USER_INFO MODE="read">  
      <GET_USER USER_LOGIN="username" />  
    </USER_INFO>  
  </LOGIN>  
</RIBCL>
```

GET_USER Parameters

USER_LOGIN—is the name that a user would type to log in to the RILOE II. It has a maximum length of 48 characters and can be an ASCII string containing any combination of printable characters. The USER_LOGIN parameter is case sensitive and must never be blank.

GET_USER Runtime Errors

The possible GET_USER error messages include:

```
User login name was not found  
User login ID cannot be blank
```

GET_USER Return Messages

A possible GET_USER return message would be:

```
<RESPONSE
  STATUS="0x0000"
  MSG="No Errors"

/>

<GET_USER
  USER_NAME="Admin User"
  USER_LOGIN= "username"
  SUPERVISOR_PRIV="N"
  LOGIN_PRIV="Y"
  REMOTE_CONS_PRIV="Y"
  RESET_SERVER_PRIV="N"
  VIRTUAL_MEDIA_PRIV="N"
  CLIENT_IP=""

/>
```

GET_ALL_USERS

The GET_ALL_USERS command requests that the RILOE II return a list of all of the valid user names that are currently in the user database. The user database must have been successfully opened with the USER_INFO command and must have been opened in read or write mode for this command to work.

Example:

```
<RIBCL VERSION="2.0">
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">
    <USER_INFO MODE="read">
      <GET_ALL_USERS/>
    </USER_INFO>
  </LOGIN>
</RIBCL>
```

GET_ALL_USERS Return Messages

An example of a successful request follows:

```
<RESPONSE
  STATUS="0x0000"
  MESSAGE='No Error' />

  USER_LOGIN="username"
  USER_LOGIN="user2"
  USER_LOGIN="user3"
  USER_LOGIN="user4"
  USER_LOGIN="user5"
  USER_LOGIN="user6"
  USER_LOGIN="user7"
  USER_LOGIN="user8"
  USER_LOGIN="user9"
  USER_LOGIN="user10"
  USER_LOGIN="user11"
  USER_LOGIN="user12"
/>
```

The following is an example of an unsuccessful request:

```
<RESPONSE
  STATUS = "0x0001"
  MSG = "Error Message" />
```

RIB_INFO

The RIB_INFO command is used to tell the firmware that the configuration of the RILOE II is about to be changed.

Example:

```
<RIB_INFO mode="write">
..... RIB_INFO commands .....
</RIB_INFO>
```

RIB_INFO Parameters

MODE—is a specific string and has a maximum length of 10 characters. It tells the RILOE II what you intend to do with the user information. Valid arguments are “read” and “write”. Write mode enables both reading and writing and other users will be unable to open the RILOE board information. Read mode is not able to change any RILOE board data. Read mode is assumed if the mode attribute is left out.

RIB_INFO Runtime Errors

There are no RIB_INFO errors.

MOD_NETWORK_SETTINGS

This command will modify certain network settings. This command is only valid inside a RIB_INFO block. The logged in user needs to have supervisory privilege and the mode of the containing RIB_INFO block must be “write”. All of these elements are optional, and may be left out. If an element is left out, then the current setting is preserved.

Example:

```
<RIBCL VERSION="2.0">
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">
    <RIB_INFO MODE="write">
      <MOD_NETWORK_SETTINGS>
        <ENABLE_NIC value="Yes"/>
        <SPEED_AUTOSELECT value="No"/>
        <FULL_DUPLEX value="Yes"/>
        <NIC_SPEED value="100"/>
        <DHCP_ENABLE value="Yes"/>
        <IP_ADDRESS value="255.255.255.255"/>
        <SUBNET_MASK value="255.255.0.0"/>
        <GATEWAY_IP_ADDRESS value="255.255.255.255"/>
        <DNS_NAME value="demorib.internal.net"/>
        <DOMAIN_NAME value="internal.net"/>
        <DHCP_GATEWAY value="No"/>
        <DHCP_DNS_SERVER value="No"/>
        <DHCP_STATIC_ROUTE value="No"/>
        <REG_WINS_SERVER value="No"/>
```

```
<HTTPS_PORT value="443" />
<HTTP_PORT value="80" />
<REMOTE_CONSOLE_PORT value="23" />
<PRIM_DNS_SERVER value="255.255.255.255" />
<SEC_DNS_SERVER value="255.255.255.255" />
<STATIC_ROUTE_1 DEST="255.255.0.0"
GATEWAY="255.0.0.0" />
<STATIC_ROUTE_2 DEST="255.255.0.0"
GATEWAY="255.0.0.0" />
<WEB_AGENT_IP_ADDRESS value="255.255.255.255" />
</MOD_NETWORK_SETTINGS>
</RIB_INFO>
</LOGIN>
</RIBCL>
```

MOD_NETWORK_SETTINGS Parameters

ENABLE_NIC—is used to enable or disable the NIC. The possible values are “Yes” or “No.” It is case-insensitive.

SPEED_AUTOSELECT—is used to automatically select the transceiver speed. The possible values are “Yes” or “No.”

FULL_DUPLEX—is used to select if the RIB is to support full-duplex or half-duplex mode. It is only applicable if **SPEED_AUTOSELECT** was set to “N.” The possible values are “Yes” or “No.”

NIC_SPEED—is used to set the transceiver speed if **SPEED_AUTOSELECT** was set to NO. The possible values are 10 or 100.

DHCP_ENABLE—is used to select if DHCP is enabled. The possible values are “Yes” or “No.”

IP_ADDRESS—is used to select the IP address for the RILOE II if DHCP is not enabled. If an empty string is entered, the current value is deleted.

SUBNET_MASK—is used to select the subnet mask for the RILOE II if DHCP is not enabled. If an empty string is entered, the current value is deleted.

GATEWAY_IP_ADDRESS—is used to select the default gateway IP address for the RILOE II if DHCP is not enabled. If an empty string is entered, the current value is deleted.

DNS_NAME—is used to specify the DNS name for the RILOE II. If an empty string is entered, the current value is deleted.

DOMAIN_NAME—is used to specify the domain name for the network where the RILOE II resides. If an empty string is entered, the current value is deleted.

DHCP_GATEWAY—specifies if the DHCP assigned gateway address is to be used. The possible values are “Yes” or “No.” This selection is only valid if DHCP is enabled.

DHCP_DNS_SERVER—specifies if the DHCP assigned DNS server is to be used. The possible values are “Yes” or “No.” This selection is only valid if DHCP is enabled.

DHCP_WINS_SERVER—specifies if the DHCP assigned WINS server is to be used. The possible values are “Yes” or “No.” This selection is only valid if DHCP is enabled.

DHCP_STATIC_ROUTE—specifies if the DHCP assigned static routes are to be used. The possible values are “Yes” or “No.” This selection is only valid if DHCP is enabled.

REG_WINS_SERVER—specifies if the RILOE II needs to register with the WINS server. The possible values are “Yes” or “No.” This selection is only valid if DHCP is enabled.

HTTPS_PORT—specifies the HTTPS (SSL) port number for the RILOE II.

HTTP_PORT—specifies the HTTP port number for the RILOE II.

REMOTE_CONSOLE_PORT—specifies the remote console port for the RILOE II.

PRIM_DNS_SERVER—specifies the IP address of the primary DNS server. This is only relevant if DHCP assigned DNS server address feature is disabled. If an empty string is entered, the current value is deleted.

SEC_DNS_SERVER—specifies the IP address of the secondary DNS server. This is only relevant if DHCP assigned DNS server address feature is disabled. If an empty string is entered, the current value is deleted.

TER_DNS_SERVER—specifies the IP address of the tertiary DNS server. This is only relevant if DHCP assigned DNS server address feature is disabled. If an empty string is entered, the current value is deleted.

PRIM_WINS_SERVER—specifies the IP address of the primary WINS server. This is only relevant if DHCP assigned WINS server address feature is disabled. If an empty string is entered, the current value is deleted.

SEC_WINS_SERVER—specifies the IP address of the secondary WINS server. This is only relevant if DHCP assigned WINS server address feature is disabled. If an empty string is entered, the current value is deleted.

STATIC_ROUTE_1, STATIC_ROUTE_2, and STATIC_ROUTE_3—are used to specify the destination and gateway IP addresses of the static routes. The following two parameters are used within the static route commands. If an empty string is entered, the current value is deleted.

DEST—specifies the destination IP addresses of the static route. This is only relevant if the DHCP assigned static route feature is disabled. If an empty string is entered, the current value is deleted.

GATEWAY—specifies the gateway IP addresses of the static route. This is only relevant if the DHCP assigned static route feature is disabled. If an empty string is entered, the current value is deleted.

WEB_AGENT_IP_ADDRESS—specifies the address for the Web-enabled agents. If an empty string is entered, the current value is deleted.

NOTE: The RILOE II is rebooted to apply the changes once MOD_NETWORK_SETTINGS has been closed.

MOD_NETWORK_SETTINGS Runtime Errors

A possible MOD_NETWORK_SETTINGS error message is:

RIB information is open for read-only access. Write access
is required for this operation

MOD_GLOBAL_SETTINGS

This command is used to change the Global Settings field in the RILOE II. RIB_INFO needs to be issued in write mode before this command. All of the parameters are optional.

Example:

```
<RIBCL VERSION="2.0">
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">
    <RIB_INFO MODE="write">
      <MOD_GLOBAL_SETTINGS>
        <SESSION_TIMEOUT value="60"/>
        <F8_PROMPT_ENABLED value="Yes"/>
        <HOST_KEYBOARD_ENABLED value="Yes"/>
        <REMOTE_CONSOLE_PORT_STATUS value="3"/>
        <POCKETPC_ACCESS value="Yes"/>
        <REMOTE_CONSOLE_ENCRYPTION value="Yes"/>
        <CIPHER_STRENGTH value="128"/>
        <HTTPS_PORT value="443"/>
        <HTTP_PORT value="80"/>
        <REMOTE_CONSOLE_PORT value="23"/>
        <SNMP_ADDRESS_1 value="123.124.125.126"/>
        <SNMP_ADDRESS_2 value="Test"/>
        <SNMP_ADDRESS_3 value="Test"/>
        <OS_TRAP value="Yes"/>
        <RIB_TRAPS value="No"/>
        <CIM_SECURITY_MASK="3"/>
      </MOD_GLOBAL_SETTINGS>
    </RIB_INFO>
  </LOGIN>
</RIBCL>
```

MOD_GLOBAL_SETTINGS Parameters

SESSION_TIMEOUT—determines the maximum session timeout value in minutes. The accepted values are from 0 to 120. If a value greater than 120 is specified, the SESSION_TIMEOUT will return an error.

HOST_KEYBOARD_ENABLED—determines if the host keyboard is enabled or disabled. The possible values are “Yes” or “No.”

F8_PROMPT_ENABLED—determines if the F8 prompt for ROM based configuration is displayed during POST. The possible values are “Yes” or “No.”

REMOTE_CONSOLE_PORT_STATUS—determines the configuration for the Remote Console port. The valid values for this setting are “0,” “1,” “2,” or “3,” which correspond to the port being set as 0 = No Change, 1 = Disabled, 2 = Automatic, or 3 = Enabled. In the Automatic setting, the Remote Console port is only enabled when a Remote Console session through a browser is in progress and is disabled otherwise.

POCKETPC_ACCESS—determines if the PocketPC access is allowed or not. The possible values are “Y” or “N” which enable and disable the access.

REMOTE_CONSOLE_ENCRYPTION—determines if the Remote Console Data Encryption is enabled or disabled. The possible values are “Yes” an “No”.

CIPHER_STRENGTH—determines the SSL Encryption strength. The possible values are “40” and “128” which enable 40-bit and 128-bit encryption respectively.

HTTPS_PORT—This parameter specifies the HTTPS (SSL) port number for the RILOE II. The RILOE II needs to be reset if the value is changed.

HTTP_PORT—This parameter specifies the HTTP port number for the RILOE II. The RILOE II needs to be reset if this value is changed.

REMOTE_CONSOLE_PORT—This parameter specifies the remote console port for the RILOE II. The RILOE II needs to be reset if this value is changed.

SNMP_ADDRESS_1—This element’s value has a maximum length of fifty characters. It is the address that will receive the traps that are to be sent to the user. It can be any valid IP address or DNS name.

SNMP_ADDRESS_2—This element's value has a maximum length of fifty characters. It is the address that will receive the traps that are to be sent to the user. It can be any valid IP address or DNS name.

SNMP_ADDRESS_3—This element's value has a maximum length of fifty characters. It is the address that will receive the traps that are to be sent to the user. It can be any valid IP address or DNS name.

OS_TRAP—This element indicates that the user should receive SNMP traps that were generated by the operating system. The possible values are “Yes” and “No”. If the value is not set then the default “No” is assumed and traps are not sent.

RIB_TRAP—This element indicates that the user should receive SNMP traps that were generated by the RIB. The possible values are “Yes” and “No”. If the value is not set then the default “No” is assumed and traps are not sent.

CIM_SECURITY_MASK—This element indicates the level of data returned to the CIM 7.0 request. The possible values are 0 = No Change, 1 = this corresponds to None (No Response to Request), 2 = this corresponds to Low (Name and Status Data Returned), 3 = this corresponds to Medium (RILOE II + Server Association), or 4 = This corresponds to High (All Identification Data Returned).

MOD_GLOBAL_SETTINGS Runtime Errors

The possible MOD_GLOBAL_SETTINGS error messages include:

RIB information is open for read-only access. Write access is required for this operation
The remote console port status value specified is invalid. It needs to be either 0, 1, 2 or 3
RIB information is open for read-only access. Write access is required for the operation
Invalid SSL Encryption Strength specified. The valid values are 40 and 128

CLEAR_EVENTLOG

This command will clear the RIB event log. The CLEAR_EVENTLOG command must display within a RIB_INFO element and RIB_INFO must be in write mode.

Example:

```
<RIBCL VERSION="2.0">  
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">  
    <RIB_INFO MODE="write">  
      <CLEAR_EVENTLOG/>  
    </RIB_INFO>  
  </LOGIN>  
</RIBCL>
```

CLEAR_EVENTLOG Parameters

There are no parameters for this command.

CLEAR_EVENTLOG Runtime Errors

A possible CLEAR_EVENTLOG error message is:

```
RIB information is open for read-only access. Write access  
is required for this operation
```

UPDATE_RIB_FIRMWARE

The UPDATE_RIB_FIRMWARE command copies the firmware upgrade file to the RILOE II, starts the upgrade process and reboots the board after the image has been flashed successfully. The UPDATE_RIB_FIRMWARE command must display within a RIB_INFO element and RIB_INFO must be in write mode. The RILOE II is reset after the firmware upgrade completes.

Example:

```
<RIBCL VERSION="2.0">
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">
    <RIB_INFO MODE="write">
      <UPDATE_RIB_FIRMWARE IMAGE_LOCATION="C:\cpqrb240.bin"/>
    </RIB_INFO>
  </LOGIN>
</RIBCL>
```

UPDATE_RIB_FIRMWARE Parameters

IMAGE_LOCATION—takes the full path filename of the firmware upgrade file.

UPDATE_RIB_FIRMWARE Runtime Errors

The possible UPDATE_RIB_FIRMWARE error messages include:

```
RIB information is open for read-only access. Write access
is required for this operation
Unable to open the firmware image update file
Unable to read the firmware image update file
The firmware upgrade file size is too big
The firmware image file is not valid
A valid firmware image has not been loaded
The flash process could not be started
IMAGE_LOCATION must not be blank
```

GET_FW_VERSION

The GET_FW_VERSION command will return the version and date of the firmware on the RILOE II.

Example:

```
<RIBCL VERSION="2.0">  
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">  
    <RIB_INFO MODE="read">  
      <GET_FW_VERSION/>  
    </RIB_INFO>  
  </LOGIN>  
</RIBCL>
```

GET_FW_VERSION Parameters

There are no parameters for this command.

GET_FW_VERSION Runtime Errors

There are no errors for this command.

INSERT_VIRTUAL_FLOPPY

This command copies a floppy image to the RILOE II. The INSERT_VIRTUAL_FLOPPY command must display within a RIB_INFO element and RIB_INFO must be in write mode.

Example:

```
<RIBCL VERSION="2.0">  
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">  
    <RIB_INFO MODE="write">  
      <INSERT_VIRTUAL_FLOPPY IMAGE_LOCATION="C:\test.img"/>  
    </RIB_INFO>  
  </LOGIN>  
</RIBCL>
```


INSERT_VIRTUAL_FLOPPY Parameters

IMAGE_LOCATION—takes the full path filename for the floppy image file.

INSERT_VIRTUAL_FLOPPY Runtime Errors

The possible INSERT_VIRTUAL_FLOPPY error messages include:

```
RIB information is open for read-only access. Write access
is required for this operation
IMAGE_LOCATION must not be blank
The Virtual Floppy image is invalid
Unable to open the virtual floppy image file
Unable to read the virtual floppy image file
The virtual floppy image file size is too big
No image present in the Virtual Floppy drive
Failed to allocate virtual floppy image space
```

EJECT_VIRTUAL_FLOPPY

This command ejects the virtual floppy image if one is inserted. The EJECT_VIRTUAL_FLOPPY command must display within a RIB_INFO element and RIB_INFO must be in write mode.

Example:

```
<RIBCL VERSION="2.0">
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">
    <RIB_INFO MODE="write">
      <EJECT_VIRTUAL_FLOPPY/>
    </RIB_INFO>
  </LOGIN>
</RIBCL>
```

EJECT_VIRTUAL_FLOPPY Parameters

There are no parameters for this command.

EJECT_VIRTUAL_FLOPPY Runtime Errors

The possible EJECT_VIRTUAL_FLOPPY error messages include:

```
RIB information is open for read-only access. Write access  
is required for this operation  
No image present in the Virtual Floppy drive
```

COPY_VIRTUAL_FLOPPY

The COPY_VIRTUAL_FLOPPY command copies a floppy image from the RILOE II to the local system. The COPY_VIRTUAL_FLOPPY command must display within a RIB_INFO element and RIB_INFO must be in write mode.

Example:

```
<RIBCL VERSION="2.0">  
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">  
    <RIB_INFO MODE="write">  
      <COPY_VIRTUAL_FLOPPY IMAGE_LOCATION="C:\test.img"/>  
    </RIB_INFO>  
  </LOGIN>  
</RIBCL>
```

COPY_VIRTUAL_FLOPPY Parameters

IMAGE_LOCATION—takes the full path filename for the location where the floppy image file needs to be copied.

COPY_VIRTUAL_FLOPPY Runtime Errors

The possible COPY_VIRTUAL_FLOPPY error messages include:

```
RIB information is open for read-only access. Write access  
is required for this operation  
IMAGE_LOCATION must not be blank  
Unable to open the virtual floppy image file  
Unable to write the virtual floppy image file  
No image present in the Virtual Floppy drive
```

GET_VF_STATUS

The GET_VF_STATUS command gets the Virtual Floppy drive status from the RILOE II. The GET_VF_STATUS command must display within a RIB_INFO element and RIB_INFO must be in write mode.

Example:

```
<RIBCL VERSION="2.0">
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">
    <RIB_INFO MODE="read">
      <GET_VF_STATUS/>
    </RIB_INFO>
  </LOGIN>
</RIBCL>
```

GET_VF_STATUS Parameters

No parameters are required for this command.

The following information is returned within the response:

```
BOOT_OPTION = BOOT_ALWAYS | BOOT_ONCE | NO_BOOT
WRITE_PROTECT_FLAG = YES | NO
IMAGE_INSERTED = YES | NO
```

GET_VF_STATUS Runtime Errors

There are no errors for this command.

SET_VF_STATUS

The SET_VF_STATUS command sets the Virtual Floppy drive status on the RILOE II. The SET_VF_STATUS command must display within a RIB_INFO element and RIB_INFO must be in write mode. All the parameters in the command are optional.

Example:

```
<RIBCL VERSION="2.0">
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">
    <RIB_INFO MODE="write">
      <SET_VF_STATUS>
        <VF_BOOT_OPTION="BOOT_ONCE"/>
        <VF_WRITE_PROTECT value="Yes"/>
      </SET_VF_STATUS>
    </RIB_INFO>
  </LOGIN>
</RIBCL>
```

SET_VF_STATUS Parameters

VF_BOOT_OPTION—specifies the boot option parameter for the virtual floppy. The possible values are **BOOT_ALWAYS**, **BOOT_ONCE** or **NO_BOOT**. The value is case-sensitive.

VF_WRITE_PROTECT—sets the write protect flag value for the virtual floppy. The possible values are “Y” or “N”.

SET_VF_STATUS Runtime Errors

The possible SET_VF_STATUS error messages include:

```
RIB information is open for read-only access. Write access
is required for this operation
An invalid virtual floppy option has been given
```

HOTKEY_CONFIG

The **HOTKEY_CONFIG** command configures the remote console hotkey settings on the RILOE II. The **HOTKEY_CONFIG** command must display within a **RIB_INFO** element and **RIB_INFO** must be in write mode. All of the sub-elements of the command are optional.

Upper case letters are not supported and they will be converted automatically to lower case. If either a double quote or a single quote is used, it must be different from the delimiter. CTRL sub-elements that are not present will not be modified. Specifying a blank string will remove the current value.

Example:

```
<RIBCL VERSION="2.0">
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">
    <RIB_INFO MODE="write">
      <HOTKEY_CONFIG>
        <CTRL_W value="CTRL,ALT,ESC"/>
        <CTRL_X value="L_SHIFT,F10,F12"/>
        <CTRL_Y value="" />
        <CTRL_T value="" />
        <CTRL_U value="" />
        <CTRL_V value="" />
      </HOTKEY_CONFIG>
    </RIB_INFO>
  </LOGIN>
</RIBCL>
```

HOTKEY_CONFIG Parameters

CTRL_W—specifies settings for the CTRL_W hotkey. The settings need to be separated by commas. For example, CTRL_W=**“CTRL,ALT,ESC”**. Up to five keystrokes can be configured for each hotkey.

CTRL_X—specifies settings for the CTRL_X hotkey. The settings need to be separated by commas. For example, CTRL_X=**“CTRL,ALT,ESC”**. Up to five keystrokes can be configured for each hotkey.

CTRL_Y—specifies settings for the CTRL_Y hotkey. The settings need to be separated by commas. For example, CTRL_Y=**“CTRL,ALT,ESC”**. Up to five keystrokes can be configured for each hotkey.

CTRL_T—specifies settings for the CTRL_T hotkey. The settings need to be separated by commas. For example, CTRL_T=**“CTRL,ALT,ESC”**. Up to five keystrokes can be configured for each hotkey.

CTRL_U—specifies settings for the CTRL_U hotkey. The settings need to be separated by commas. For example, CTRL_U=“CTRL,ALT,ESC”. Up to five keystrokes can be configured for each hotkey.

CTRL_V—specifies settings for the CTRL_V hotkey. The settings need to be separated by commas. For example, CTRL_V=“CTRL,ALT,ESC”. Up to five keystrokes can be configured for each hotkey.

HOTKEY_CONFIG Runtime Errors

The possible HOTKEY_CONFIG error messages include:

```
RIB information is open for read-only access. Write access
is required for this operation
The hotkey parameter specified is not valid
```

SERVER_INFO

The SERVER_INFO command is used to tell the firmware that the configuration of the RILOE II is about to be changed.

Example:

```
<SERVER_INFO mode="read">
..... SERVER_INFO commands .....
</SERVER_INFO>
```

SERVER_INFO Parameters

MODE—is a specific string parameter has a maximum length of ten characters. It tells the RILOE II what you intend to do with the server information. Valid arguments are “read” and “write”. If it is open in write mode, then both reading and writing are enabled. If it is open in read mode then this instance will not be able to perform any server actions.

SERVER_INFO Runtime Errors

A possible SERVER_INFO error is:

Mode parameter must not be blank

SET_HOST_POWER

The SET_HOST_POWER command sets the Virtual Power Button feature on the RILOE II. This is used to turn the server on or off, if the feature is supported. The SET_HOST_POWER command must display within a SERVER_INFO element and SERVER_INFO must be in write mode.

Example:

```
<RIBCL VERSION="2.0">  
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">  
    <SERVER_INFO MODE="write">  
      <SET_HOST_POWER HOST_POWER="Yes"/>  
    </SERVER_INFO>  
  </LOGIN>  
</RIBCL>
```

SET_HOST_POWER Parameters

HOST_POWER—sets the value to “Yes” or “No” to power on or power off the server.

SET_HOST_POWER Errors

The possible SET_HOST_POWER error messages include:

Server information is open for read-only access. Write
access is required for this operation
Virtual Power Button feature is not supported on this server
Host power is already ON
Host power is already OFF

GET_VPB_CABLE_STATUS

The GET_VPB_CABLE_STATUS command gets the Virtual Power Button cable status on the RILOE II. The GET_VPB_CABLE_STATUS command must display within a SERVER_INFO element and SERVER_INFO must be in write mode.

Example:

```
<RIBCL VERSION="2.0">  
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">  
    <SERVER_INFO MODE="read">  
      <GET_VPB_CABLE_STATUS/>  
    </SERVER_INFO>  
  </LOGIN>  
</RIBCL>
```

GET_VPB_CABLE_STATUS Parameters

There are no parameters for GET_VPB_CABLE_STATUS command.

GET_VPB_CABLE_STATUS Runtime Errors

The possible GET_VPB_CABLE_STATUS error messages include:

```
Virtual Power Button cable is attached  
Virtual Power Button cable is not attached
```


GET_HOST_POWER_STATUS

The GET_HOST_POWER_STATUS command gets the server power state from the Virtual Power Button cable on the RILOE II. The GET_HOST_POWER_STATUS command must display within a SERVER_INFO element and SERVER_INFO must be in write mode.

Example:

```
<RIBCL VERSION="2.0">
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">
    <SERVER_INFO MODE="read">
      <GET_HOST_POWER_STATUS/>
    </SERVER_INFO>
  </LOGIN>
</RIBCL>
```

GET_HOST_POWER_STATUS Parameters

There are no parameters for the GET_HOST_POWER_STATUS command.

GET_HOST_POWER_STATUS Runtime Errors

The possible GET_HOST_POWER_STATUS error messages include:

```
Host power is OFF
Host power is ON
```

RESET_SERVER

The RESET_SERVER command will reset the server if the server is turned ON. The RESET_SERVER command must display within a SERVER_INFO element and SERVER_INFO must be in write mode.

Example:

```
<RIBCL VERSION="2.0">  
  <LOGIN USER_LOGIN="adminname" PASSWORD="password">  
    <SERVER_INFO MODE="write">  
      <RESET_SERVER/>  
    </SERVER_INFO>  
  </LOGIN>  
</RIBCL>
```

RESET_SERVER Parameters

There are no parameters for the RESET_SERVER command.

RESET_SERVER Errors

The possible RESET_SERVER error messages include:

```
Server information is open for read-only access. Write  
access is required for this operation  
Server is currently powered off
```

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