

Oracle Integrated Lights Out Manager (ILOM) 3.0

Remote Redirection Consoles — CLI and Web
Guide



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Using This Documentation

This guide describes the setup and use of the Oracle Integrated Lights Out Manager (ILOM) 3.0 Remote Console feature for accessing a host console remotely.

Use this guide in conjunction with other guides in the Oracle ILOM 3.0 Documentation Library. This guide is intended for technicians, system administrators, and authorized Oracle service providers, and users who have experience managing system hardware.

- “Related Documentation” on page vii
- “Documentation Feedback” on page viii
- “Product Downloads” on page viii
- “Oracle ILOM 3.0 Firmware Version Numbering Scheme” on page ix
- “Support and Accessibility” on page x

Related Documentation

Documentation	Links
All Oracle products	http://www.oracle.com/documentation
Oracle Integrated Lights Out Manager (ILOM) 3.0 Documentation Library	http://www.oracle.com/pls/topic/lookup?ctx=ilom30

Documentation	Links
System management, single system management (SSM) security, and diagnostic documentation	http://www.oracle.com/technetwork/documentation/sys-mgmt-networking-190072.html
Oracle Hardware Management Pack 2.0	http://docs.oracle.com/cd/E19960-01/index.html
Note: To locate Oracle ILOM 3.1 documentation that is specific to your Sun server platform, see the Oracle ILOM section of the administration guide that is available for your server.	

Documentation Feedback

Provide feedback on this documentation at:

<http://www.oracle.com/goto/docfeedback>

Product Downloads

Updates to the Oracle ILOM 3.0 firmware are available through standalone software updates that you can download from the My Oracle Support (MOS) web site for each Sun server or Sun blade chassis system. To download these software updates from the MOS web site, see the instructions that follow.

▼ Download Product Software and Firmware

1. Go to <http://support.oracle.com>.
2. Sign in to My Oracle Support.
3. At the top of the page, click the Patches and Updates tab.
4. In the Patches Search box, select Product or Family (Advanced Search).
5. In the Product? Is field, type a full or partial product name, for example Sun Fire X4470, until a list of matches appears, then select the product of interest.
6. In the Release? Is pull down list, click the Down arrow.

7. In the window that appears, click the triangle (>) by the product folder icon to display the choices, then select the release of interest.
8. In the Patches Search box, click Search.
A list of product downloads (listed as patches) appears.
9. Select the patch name of interest, for example Patch 10266805 for the Oracle ILOM and BIOS portion of the Sun Fire X4470 SW 1.1 release.
10. In the right-side pane that appears, click Download.

Oracle ILOM 3.0 Firmware Version Numbering Scheme

Oracle ILOM 3.0 uses a firmware version numbering scheme that helps you to identify the firmware version you are running on your server or CMM. This numbering scheme includes a five-field string, for example, a.b.c.d.e, where:

- a - Represents the major version of Oracle ILOM.
- b - Represents a minor version of Oracle ILOM.
- c - Represents the update version of Oracle ILOM.
- d - Represents a micro version of Oracle ILOM. Micro versions are managed per platform or group of platforms. See your platform Product Notes for details.
- e - Represents a nano version of Oracle ILOM. Nano versions are incremental iterations of a micro version.

For example, Oracle ILOM 3.1.2.1.a would designate:

- Oracle ILOM 3 as the major version
- Oracle ILOM 3.1 as a minor version
- Oracle ILOM 3.1.2 as the second update version
- Oracle ILOM 3.1.2.1 as a micro version
- Oracle ILOM 3.1.2.1.a as a nano version of 3.1.2.1

Tip – To identify the Oracle ILOM firmware version installed on your Sun server or CMM, click System Information --> Versions in the web interface, or type `version` in the command-line interface.

Support and Accessibility

Description	Links
Access electronic support through My Oracle Support	http://support.oracle.com For hearing impaired: http://www.oracle.com/accessibility/support.html
Learn about Oracle's commitment to accessibility	http://www.oracle.com/us/corporate/accessibility/index.html

Oracle ILOM Web and CLI Remote Redirection Options

Description	Links
Learn about Oracle ILOM SP remote redirection.	<ul style="list-style-type: none">• “Oracle ILOM Remote Console” on page 1
Learn about the Oracle ILOM Storage Redirection command-line interface.	<ul style="list-style-type: none">• “Oracle ILOM Storage Redirection CLI” on page 2
Oracle ILOM CLI ommands for starting or stopping a host server console or for sending a break to the host server console.	“Starting and Stopping a Host Console” on page 3

Related Information

- [“Understanding Oracle ILOM Remote Console Features” on page 5](#)
- [“Setting Up the Oracle ILOM Remote Console for First-Time Use” on page 11](#)
- [“Launching and Redirecting KVMs Devices Using the Oracle ILOM Remote Console” on page 25](#)
- [“Understanding Oracle ILOM Storage Redirection CLI Features” on page 39](#)
- [“Setting Up Oracle ILOM Storage Redirection CLI for First Time Use” on page 43](#)
- [“Redirecting a Storage Device Using the Oracle ILOM Storage Redirection CLI” on page 53](#)

Oracle ILOM Remote Console

The Oracle ILOM Remote Console is supported on all Oracle Sun x86 processor-based servers. It is also supported on some SPARC processor-based servers. The Oracle ILOM Remote Console is a Java application that you can launch

from the Oracle ILOM web interface. When you use the Oracle ILOM Remote Console, you can remotely redirect and control the following devices on a remote host server:

- Keyboard
- Mouse
- Video console display
- Storage devices or images (CD/DVD, floppy device, ISO image)

The Oracle ILOM Remote Console enables the devices on your local client to behave as if they were directly attached to the remote host server. For instance, the redirection functionality enables you to perform any of the following tasks:

- Install software from your local media drive to a remote host server.
- Run command-line utilities on a remote host server from a local client.
- Access and run GUI-based programs on a remote host server from a local client.
- Remotely configure server features from a local client.
- Remotely manage server policies from a local client.
- Remotely monitor server elements from a local client.
- Perform almost any software task from a local client that you normally could perform while sitting at a remote host server.

The Oracle ILOM Remote Console supports two methods of redirection: video and serial console. Video redirection is supported on all Sun x86 processor-based servers and some Sun SPARC processor-based servers. Serial console redirection is supported on all SPARC processor-based servers. Serial console redirection is not currently supported on x86 processor-based servers.

For instructions for redirecting host devices using the Oracle ILOM Remote Console, see the following:

- [“Understanding Oracle ILOM Remote Console Features” on page 5](#)
- [“Setting Up the Oracle ILOM Remote Console for First-Time Use” on page 11](#)
- [“Launching and Redirecting KVMs Devices Using the Oracle ILOM Remote Console” on page 25](#)

Oracle ILOM Storage Redirection CLI

The Storage Redirection CLI in ILOM is supported on all Oracle Sun x86 processorbased servers. This CLI is also supported on some SPARC processor-based servers. However, the Storage Redirection CLI is not supported on Sun server SPs or chassis monitoring modules (CMMs) running ILOM 2.0. It is also not supported on

CMMs running ILOM 3.0; although, the CMM web interface still provides the download links to the Storage Redirection service and client CLI tools. Once the service and client tools are downloaded and running on your machine, they can be used for Storage redirection to a server module running ILOM 3.0.

The Storage Redirection CLI enables the storage devices (CD/DVD drive or ISO images) on your local client to behave as if they were directly attached to the remote host server. For instance, the redirection functionality enables you to locally perform these actions:

- Mount a storage device or image directly from your desktop to a remote SP host without launching the Oracle ILOM Remote Console Java application.
- Redirect media to use the `/HOST/console` for text-based console interaction.
- Write scripts to start and stop storage redirection on multiple SP host servers.

Note – The Storage Redirection CLI is limited to remote media control. If you need to remotely manage other devices on a remote host server (such as the keyboard, video display, or mouse), you should use the Oracle ILOM Remote Console. For more information about the Oracle ILOM Remote Console, see [“Oracle ILOM Remote Console” on page 1](#).

For more information about setting up and using Oracle ILOM Storage Redirection CLI, see:

- [“Understanding Oracle ILOM Storage Redirection CLI Features” on page 39](#)
- [“Setting Up Oracle ILOM Storage Redirection CLI for First Time Use” on page 43](#)
- [“Redirecting a Storage Device Using the Oracle ILOM Storage Redirection CLI” on page 53](#)

Starting and Stopping a Host Console

To start a serial console session to the host server from the Oracle ILOM CLI, console (r) role privileges are required in Oracle ILOM and the host server must be powered on.

To establish a serial console session to the host server from the Oracle ILOM CLI, type:

- `start /SP/console`

To send a break to the host console press the Escape key and type: B

To exit the serial console session, press these keys: ESC and (

Understanding Oracle ILOM Remote Console Features

The information in this topic describes Oracle ILOM Remote Console features.

Descriptions	Links
Learn about international keyboard support.	“International Keyboard Support” on page 5
Learn about managing multiple Remote Console sessions.	“Single or Multiple Management Views” on page 6
Learn about Remote Console default network port and protocols.	“Network Communication Ports and Protocols” on page 8
Learn about required sign-in authority.	“Sign-In Authentication” on page 9
Learn about securing Oracle ILOM Remote Console.	“Secure Remote Console” on page 9

Related Information

- [“Setting Up the Oracle ILOM Remote Console for First-Time Use” on page 11](#)
- [“Launching and Redirecting KVMs Devices Using the Oracle ILOM Remote Console” on page 25](#)

International Keyboard Support

As of Oracle ILOM 3.0.9, the Oracle ILOM Remote Console additionally supports the use of all characters on the following international keyboards:

- Swedish keyboard
- Swiss-French keyboard
- Finnish keyboard

Note – Prior to Oracle ILOM 3.0.9, the Oracle ILOM Remote Console did not support the use of all the international characters on these keyboards.

Single or Multiple Management Views

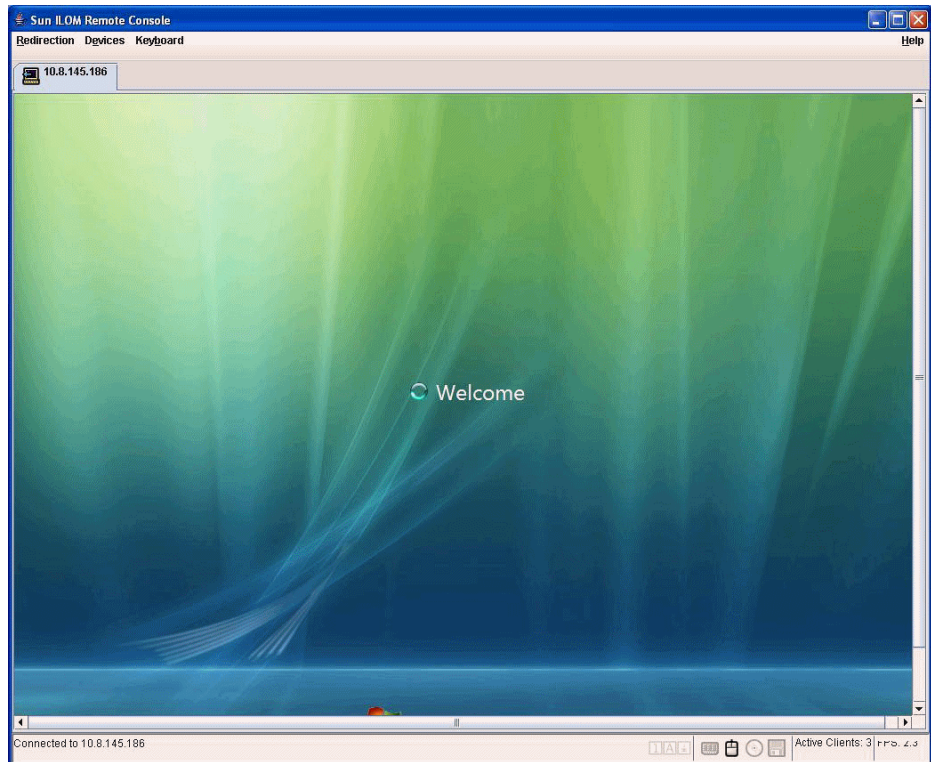
The Oracle ILOM Remote Console supports both single and multiple remote server management views.

Single and multiple server management views are currently supported on all x86 processor-based servers and some SPARC processor-based servers.

- Single remote server management view – You can launch the Oracle ILOM Remote Console to manage a single remote host server from one window and utilize the remote keyboard, video, mouse, storage (KVMS) features.

Single remote server management views are supported when you connect to the IP address of any server SP.

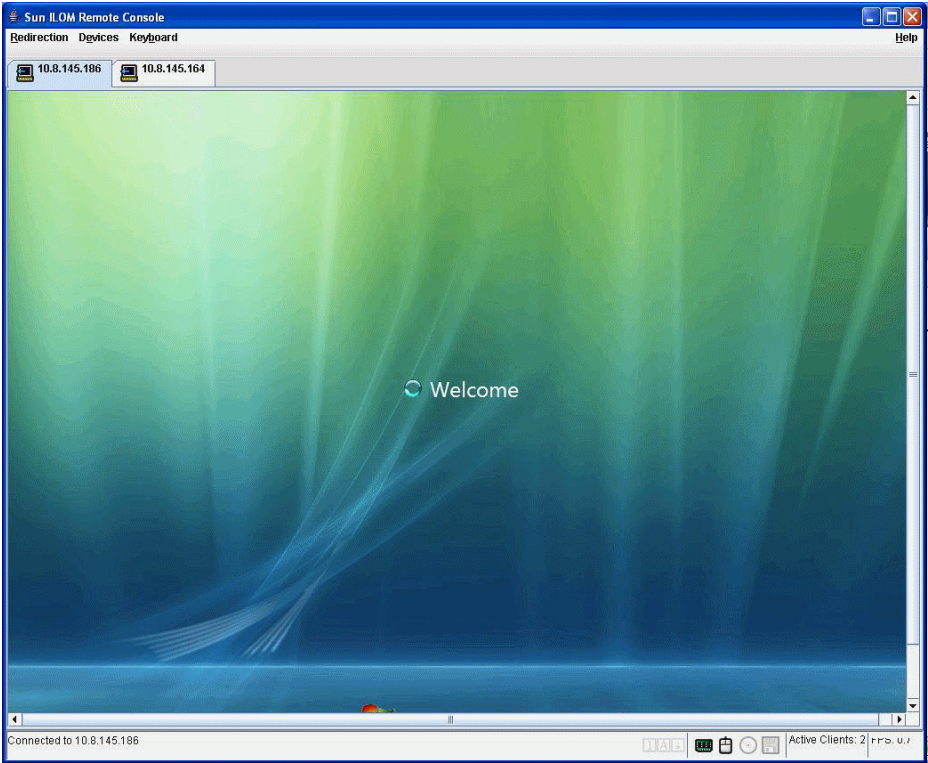
FIGURE: Single Server Management View



- Multiple remote server management views – You can launch the Oracle ILOM Remote Console to manage multiple remote host server views.

Multiple remote server management views are supported when you either: (1) add a new Oracle ILOM Remote Control session to manage another remote host server; or (2) connect to the IP addresses that are associated with an x86 chassis monitoring module (CMM).

FIGURE: Multiple Server Management Views



Network Communication Ports and Protocols

The Oracle ILOM Remote Console communicates to a remote host server SP using the following network ports and protocols.

TABLE: SP Oracle ILOM Remote Console Network Ports and Protocols

Port	Protocol	SP - Oracle ILOM Remote Console
5120	TCP	CD
5123	TCP	Diskette
5121	TCP	Keyboard and mouse

TABLE: SP Oracle ILOM Remote Console Network Ports and Protocols (*Continued*)

Port	Protocol	SP - Oracle ILOM Remote Console
5556	TCP	Redirection authentication
7578	TCP	Video
7579	TCP	SPARC servers only

Sign-In Authentication

When you launch the Oracle ILOM Remote Console from the Oracle ILOM web interface, you must sign in using a user account with Administrator user role profile privileges or Console (c) role privileges. The system will subsequently prompt you to re-enter the account each time you perform one of the following: start a redirection, stop a redirection, or restart a redirection.

Note – If the Single Sign On feature is disabled in Oracle ILOM, users with Administrator user role profile or Console (c) role privileges will be prompted to sign in to Oracle ILOM again using the Login dialog box. For additional information about the Single Sign On feature, refer to the *Oracle ILOM 3.0 Daily Management Concepts Guide*.

Secure Remote Console

As of Oracle ILOM 3.0.4 or later, a lock feature is available for the Oracle ILOM Remote Console that enhances your system security by enabling you to lock your computer when terminating a Oracle ILOM Remote Console session. Specifically, the lock behavior takes place either when you terminate an Oracle ILOM Remote Console session or when the managed network connection to the server is lost.

If you are running a Windows operating system on your host, you can enable the computer lock feature in Oracle ILOM by selecting Windows as your option. The Windows lock mode option works in conjunction with the standard Windows keyboard shortcut for locking the Windows operating system (Ctrl-Alt-Del K).

If you are running a Solaris or Linux operating system on your host, you can execute the computer lock behavior when the Oracle ILOM Remote Console terminates by implementing the custom lock mode feature in Oracle ILOM.

The custom lock mode feature in Oracle ILOM enables you to execute any system behavior that is tied to a predefined keyboard shortcut on your host operating system. To execute a custom keyboard shortcut behavior in Oracle ILOM, you must first define the behavior you want to take place on your host operating system with a keyboard shortcut. Then, to execute this behavior when the Oracle ILOM Remote Console terminates, you must specify the OS keyboard shortcut parameters in the custom KVMS lock mode feature in Oracle ILOM.

For more information, see [“Securing the Oracle ILOM Remote Console”](#) on page 18.

Setting Up the Oracle ILOM Remote Console for First-Time Use

Description	Links	Platform Feature Support
Identify the requirements for setting up Oracle ILOM Remote Console.	<ul style="list-style-type: none">• “Initial Setup Requirements (Oracle ILOM Remote Console)” on page 12	<ul style="list-style-type: none">• x86 system server SP• SPARC system server SP
Perform initial setup procedures.	<ul style="list-style-type: none">• “Configure KVMs Redirection Settings” on page 13• “Registering 32-bit JDK” on page 14	
Optionally, secure the Oracle ILOM Remote Console.	<ul style="list-style-type: none">• “Securing the Oracle ILOM Remote Console” on page 18	

Related Information

- [“Network Communication Ports and Protocols” on page 8](#)
- [“International Keyboard Support” on page 5](#)
- [“Oracle ILOM Remote Console” on page 1](#)
- [“Sign-In Authentication” on page 9](#)

Initial Setup Requirements (Oracle ILOM Remote Console)

Prior to performing the procedures in this section, ensure that the following requirements are met.

- You must have already preformed basic set up and network configuration for the server's ILOM service processor to the point that you can log in to Oracle ILOM as described in *Oracle ILOM 3.0 Daily Management Web Interface Procedures Guide*.
- You must have a user account with Administrator user role profile or Console (c) role privileges to use the Oracle ILOM Remote Console.
- The Oracle ILOM Remote Console supports two methods of redirection: video and serial console. Video redirection is supported on all Oracle Sun x86 processor-based servers, as well as some SPARC processor-based servers. Serial console redirection is supported on all SPARC servers, but it is currently not supported on x86 servers.
- To run the Oracle ILOM Remote Console, you must have the JRE 1.5 or higher (Java 5.0 or higher) software installed on your local client. To download the Java 1.5 Runtime Environment, go to <http://java.com>.
- The Oracle ILOM Remote Console is supported on your local client with the operating systems, web browsers, and JVM listed below:

TABLE: Supported Operating Systems, Web Browsers, and JVM

Operating System	Web Browser	Java Virtual Machine (JVM)
Oracle Solaris (9 and 10)	<ul style="list-style-type: none">• Mozilla 1.7.5 and above• Firefox 1.0 and above	<ul style="list-style-type: none">• 32-bit JDK
Linux (Red Hat, SuSE, Ubuntu, Oracle)	<ul style="list-style-type: none">• Mozilla 1.7.5 and above• Firefox 1.0 and above• Opera 6.x and above	<ul style="list-style-type: none">• 32-bit JDK
Microsoft Windows (98, 2000, XP, Vista) Note - For IPv6 networks, only Vista, Windows Server 2008 and Windows 7 clients are supported.	<ul style="list-style-type: none">• Internet Explorer 6.0 and above• Mozilla 1.7.5 and above• Firefox 1.0 and above• Opera 6.x and above	<ul style="list-style-type: none">• 32-bit JDK Note - For IPv6 networks, use JDK170b36 or higher.

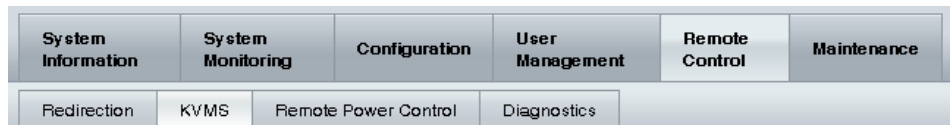
▼ Configure KVMs Redirection Settings

To configure Oracle ILOM Remote Console settings for video console remote KVMs management of host servers, follow these steps:

1. Log in to the Oracle ILOM SP web interface.

2. Click Remote Control --> KVMs.

The KVMs Settings page appears.



KVMs Settings

Configure the state of the Keyboard, Video, Mouse and Storage (KVMs) service. Select a mode for your local mouse to use while managing the host remotely. Select Absolute mouse mode if your host is running Windows OS or Solaris, or Relative mouse mode for Linux OS. The Service Processor must be reset for any change in mouse mode to take effect.

State: ☒ Enabled

Mouse Mode:

Note – The Remote Control second-level tab options that are shown in the preceding figure differ depending on your server. Likewise, the KVMs settings options on the KVMs Settings page differ depending on your Sun server. For more information, see the descriptions provided for the remote control settings in Step 3 of this procedure.

3. Use the options on the KVMs Settings page to specify the following remote control settings for managing a remote server.

Remote Control Setting	Applies To	Action
KVMS State	Video redirection	Click Enabled to enable the redirection of keyboard, video, mouse, and storage devices of the managed host. If the check box is left cleared, the KVMS device redirection will be disabled.
Mouse Mode Settings	Video redirection	<p>Select one of the following mouse mode settings:</p> <ul style="list-style-type: none"> • Absolute – Select Absolute mouse mode for best performance when you are using Oracle Solaris or Windows operating systems. Absolute is the default. • Relative – Select Relative mouse mode when you are using a Linux operating system. Note that not all Linux operating systems support Absolute mode. <p>Note - As of Oracle ILOM 3.0.4 and later versions of Oracle ILOM, you can toggle between the Relative and Absolute settings without having to restart the server SP. Changes take effect immediately in the Oracle ILOM Remote Console.</p>

Note – For serial console redirection, the KVMS setting is enabled during an active remote console session.

Registering 32-bit JDK

The initial setup procedures described in this section apply only to video redirection and the registration of the 32-bit JDK file. If you plan to redirect devices from a SPARC serial console, the initial setup tasks described in this section are not necessary.

- [“Register 32-bit JDK File Type When Using Windows Internet Explorer” on page 15](#)
- [“Register 32-bit JDK File Type When Using Firefox” on page 15](#)

▼ Register 32-bit JDK File Type When Using Windows Internet Explorer

If you will be using Windows Internet Explorer (IE) web browser to launch the Oracle ILOM Remote Console, you must register the 32-bit JDK file on your system before using Internet Explorer to launch the Oracle ILOM Remote Console.

Note – The JDK does not support Windows XP for IPv6 network environments, therefore launching the ILOM Remote Console from a Windows XP IPv6 client is not supported. For network environments using IPv6 and running Microsoft Windows operating systems, launch the ILOM Remote Console from a Microsoft Windows Vista, Windows Server 2008, or Windows 7 client using JDK170b36 or higher.

To register the 32-bit JDK file, follow these steps:

1. On the Windows client, open Windows Explorer (not Internet Explorer).
2. In the Windows Explorer dialog box, choose Tools --> Folder Options, and then the Files Types tab.
3. In the Files Types tab, do the following:
 - a. In the registered file type list, select the `JNLP` file type and click Change.
 - b. In the Open With dialog box, click Browse to select the 32-bit JDK file.
 - c. Click the “Always use the selected program to open this kind of file” check box.
 - d. Click OK, and then start the Storage Redirection service in the Oracle ILOM web interface.

▼ Register 32-bit JDK File Type When Using Firefox

If you will be using Mozilla Firefox web browser to launch the Oracle ILOM Remote Console, you must register the 32-bit JDK file on your system before using Firefox to launch the Oracle ILOM Remote Console.

To register the 32-bit JDK file, follow these steps:

1. Log in to the Oracle ILOM web interface for the server SP.
2. Click Remote Control --> Redirection.
The Launch Redirection page appears.

System Information	System Monitoring	Configuration	User Management	Remote Control	Maintenance
Redirection	KVMS	Remote Power Control	Diagnostics	Host Control	Host Boot Mode
					Keyswitch

Launch Redirection

Manage the host remotely by redirecting the system console to your local machine. Launch the Sun ILOM Remote Console to utilize the RKVMS features. Select 16-bit high-quality color redirection for fast connections, or 8-bit lower-quality color redirection for slower connections. Select serial to access the Managed Host's serial console.

- ☒ I want to see redirection in 16-bit
- ☐ I want to see redirection in 8-bit
- ☐ I want to see serial redirection

[Launch Redirection](#)

Storage Redirection

You can optionally redirect local CDROM storage devices or CDROM image files from your workstation to the host by using the non-graphical storage redirection utility. This consists of a background service process running on your local machine that manages and maintains redirection to the host. This service is Java Web Start based and can be started by clicking 'Launch Service' below.

[Launch Service](#)

A scriptable, command-line Java client application is used to issue commands to the Service Processor for starting and stopping redirection of local storage devices and/or image files to one or more ILOM-enabled hosts. Click 'Download Client' below and save as StorageRedir.jar locally, and get started by running 'java -jar StorageRedir.jar -h' from a local command window prompt.

[Download Client](#)

Note – Depending on your platform, the Launch Redirection page will offer different combinations of redirection options. If multiple options are presented, select the type of redirection that you want to use to remotely manage this host.

3. To specify how you want to see the redirected system console, click one of the radio buttons.

4. Click Launch Redirection.

A dialog box appears indicating the file type chosen to launch the program.



5. In the Java Start Web Program dialog box, do the following:

- a. Click `Open with...` to specify the 32-bit JDK file.
- b. Click the “Do this automatically for files like this from now on” check box.

Note – If a certificate warning message appears stating that the name of the site does not match the name on the certificate, click `Run` to continue.

The Oracle ILOM Remote Console window appears.

Securing the Oracle ILOM Remote Console

Description	Links	Platform Feature Support
Learn about the special considerations when enabling Remote Console lock.	<ul style="list-style-type: none">• “Special Considerations When Enabling the Oracle ILOM Remote Console Lock Option” on page 18	<ul style="list-style-type: none">• x86 system server SP• SPARC system server SP• CMM
Enable or disable Oracle ILOM Remote Console lock options from the web interface.	<ul style="list-style-type: none">• “Set the Oracle ILOM Remote Console KVMS Lock From the Web Interface” on page 19	
Enable or disable Oracle ILOM Remote Console lock options from the CLI.	<ul style="list-style-type: none">• “Set the Oracle ILOM Remote Console KVMS Lock From the CLI” on page 20	

Special Considerations When Enabling the Oracle ILOM Remote Console Lock Option

Review the following special considerations prior to enabling the KVMS lock mode option in Oracle ILOM.

Special Consideration	Description
Console user role is required to set lock option.	<p>To enable the Oracle ILOM Remote Console lock option in Oracle ILOM, you must have Console (c) role privileges associated with your user account.</p> <p>For more information about setting up a user account in Oracle ILOM with Console privileges, refer to the user management section in the <i>Oracle ILOM 3.0 Daily Management Web Procedures Guide</i> or the <i>Oracle ILOM 3.0 Daily Management CLI Procedures Guide</i>.</p>

Special Consideration	Description
A predefined keyboard shortcut on the OS is required to execute the custom lock mode feature.	Prior to enabling a custom keyboard shortcut in ILOM for when the Oracle ILOM Remote Console connection terminates, you must first define the keyboard shortcut behavior on your host operating system. For instructions for creating a keyboard shortcut on your host operating system, refer to the documentation supplied with your operating system.
The custom lock mode feature can be defined with up to four modifiers and one key.	When you specify the custom lock mode feature in Oracle ILOM, you can specify up to four modifiers and one key. A list of supported modifiers and keys that you can use to match your predefined OS keyboard shortcut appear in both the CLI KVMS help and the web interface KVMS page.
Lock behavior when running multiple Oracle ILOM Remote Console sessions.	If more than one Oracle ILOM Remote Console session is opened to the same SP, the Windows lock or custom keyboard shortcut behavior configured in Oracle ILOM will take place only when you close the last SP Oracle ILOM Remote Console session.

For instructions about how to configure the remote console lock option in Oracle ILOM, see:

- [“Set the Oracle ILOM Remote Console KVMS Lock From the Web Interface” on page 19](#)
- [“Set the Oracle ILOM Remote Console KVMS Lock From the CLI” on page 20](#)

▼ Set the Oracle ILOM Remote Console KVMS Lock From the Web Interface

Before You Begin

- To enable the Oracle ILOM Remote Console lock option in Oracle ILOM, you must have Console (c) role privileges associated with your user account.
- You must be running Oracle ILOM 3.0.4 or later on the server SP.

1. Log in to the Oracle ILOM SP or CMM web interface.

Note – When logging in to the CMM web interface, navigate to the SP target where you want to enable or disable the KVMS lock option for the Oracle ILOM Remote Console.

2. In the web interface page, click Remote Console --> KVMS.

The KVMS page appears displaying the options available for KVMS Settings and Host Lock Settings.

3. In the Host Lock Settings section of the KVMS page, perform one of the following tasks:

Task	Instructions
Enable the standard Windows host lock mode option.	<ul style="list-style-type: none">• In the Lock Mode list box, select Windows.
Enable the custom host lock mode feature.	<ol style="list-style-type: none">1. In the Lock Mode list, select Custom.2. In the Custom Lock Modifiers list, select up to four custom modifiers that match the keyboard shortcut modifiers that are predefined in your operating system.3. In the Custom Lock Key list, select the key that matches the keyboard shortcut key that is predefined in your operating system.
Disable the host lock mode feature.	<ul style="list-style-type: none">• In the Lock Mode list, select Disabled.

4. Click Save to apply the changes you specified.

▼ Set the Oracle ILOM Remote Console KVMS Lock From the CLI

Before You Begin

- To enable the Oracle ILOM Remote Console Lock option in Oracle ILOM, you must have Console (c) role privileges associated with your user account.
- You must be running Oracle ILOM 3.0.4 or later on the server SP.

1. Log in to the Oracle ILOM CLI SP or CMM.

Note – When logging in to the CMM CLI, navigate to the SP target where you want to enable or disable the KVMS lock option for the Oracle ILOM Remote Console.

2. To view all the possible properties associated with the management of the SP KVMS services, type:

-> **help /SP/services/kvms**

The following sample output appears:

```
/SP/services/kvms : Management of the KVMS service
Targets:

Properties:
    custom_lock_key : KVMS custom lock key
    custom_lock_key : Possible values = esc, end, tab, ins,
del, home, enter, space, break, backspace, pg_up, pg_down,
scrl_lck, sys_rq, num_plus, num_minus, f1, f2, f3, f4, f5, f6, f7,
f8, f9, f10, f11, f12, a-z, 0-9, !, @, #, $, %, ^, &, *, (, ), -,
_, =, +, ,, |, ~, \, [, {, ], }, ;, :, ', ", <, ., >, /, ?
    custom_lock_key : User role required for set = c

    custom_lock_modifiers : KVMS custom lock modifiers
    custom_lock_modifiers : Possible values = l_alt, r_alt,
l_shift, r_shift, l_ctrl, r_ctrl, l_gui, r_gui
    custom_lock_modifiers : User role required for set = c

    lockmode : KVMS lock mode
    lockmode : Possible values = disabled, windows, custom
    lockmode : User role required for set = c

    mousemode : KVMS mouse mode
    mousemode : Possible values = absolute, relative
    mousemode : User role required for set = c

    servicestate : KVMS service state
    servicestate : Possible values = enabled, disabled
    servicestate : User role required for set = a
```

3. Perform any of the following tasks using either the **cd**, **set**, or **show** commands to manage the SP KVMS target properties.

Task	Instructions
Navigate to the KVM target.	<ul style="list-style-type: none"> To navigate to the KVM target, type the following command: -> cd /SP/services/kvm <p>Note - You must navigate to the KVM target prior to enabling or disabling the KVM lock mode options.</p>
Display the KVM lock mode properties.	<ul style="list-style-type: none"> To display the KVM lock mode properties, type the following command: -> show <p>The target, properties, and commands that are associated with the management of the SP KVM service appear.</p>
Disable the Oracle ILOM Remote Console lock mode feature.	<ul style="list-style-type: none"> To disable the Oracle ILOM Remote Console lock mode feature, type the following command: -> set lockmode=disabled
Enable the standard Windows host lock mode feature.	<ul style="list-style-type: none"> To enable the standard lock mode feature on a Windows system, type the following command: -> set lockmode=windows
Enable the custom host lock mode feature.	<ul style="list-style-type: none"> To enable the custom lock mode feature on a Linux, Solaris, or Windows system, type following commands: -> set lockmode=custom -> set custom_lock_key=<specify a custom lock key> -> set lock_modifiers=<specify up to four custom lock modifiers> <p>Note - Each custom lock modifier specified must be separated by a comma.</p>

EXAMPLE: Enabled Custom Lock Mode

In this example, you have defined, in your host OS, the following custom keyboard shortcut sequence to log you off the operating system:

Shift-Control-Backspace

To execute this custom keyboard shortcut sequence when exiting an Oracle ILOM Remote Console session, the following KVMS properties would be set in the Oracle ILOM CLI:

```
/SP/services/kvms
  Targets:

  Properties:
    custom_lock_key = backspace
    custom_lock_modifiers = l_shift, l_ctrl
    lockmode = custom
    mousemode = absolute
    servicestate = enabled
```


Launching and Redirecting KVMs Devices Using the Oracle ILOM Remote Console

Description	Links	Platform Feature Support
Identify the requirements for launching and using the Oracle ILOM Remote Console.	<ul style="list-style-type: none"> • “Usage Requirements (Oracle ILOM Remote Console)” on page 27 	<ul style="list-style-type: none"> • x86 system server SP • SPARC system server SP • CMM
Identify the international languages supported by the Oracle ILOM Remote Console.	<ul style="list-style-type: none"> • “International Keyboard Support” on page 27 	
Perform these procedures to launch Oracle ILOM Remote Console and to manage a redirection session.	<ul style="list-style-type: none"> • “Launch the Oracle ILOM Remote Console” on page 28 • “Start, Stop, or Restart Device Redirection” on page 30 	
Perform these procedures to redirect the KVMS devices.	<ul style="list-style-type: none"> • “Toggle Keyboard and Mouse Control” on page 31 • “Control Keyboard Modes and Key Send Options” on page 31 • “Redirect Keyboard Input (Serial Redirection Only)” on page 32 • “Redirect Mouse Input (Video Redirection Only)” on page 33 • “Redirect Storage Media” on page 34 	
Perform this procedure when you want to create a redirection session for another remote server.	<ul style="list-style-type: none"> • “Add New Server Redirection Session” on page 37 	
Perform this procedure to exit Oracle ILOM Remote Console.	<ul style="list-style-type: none"> • “Exit the Oracle ILOM Remote Console” on page 37 	

Related Information

- [“Setting Up the Oracle ILOM Remote Console for First-Time Use” on page 11](#)
- [“Secure Remote Console” on page 9](#)

Usage Requirements (Oracle ILOM Remote Console)

Prior to performing the procedures in this section, ensure that the following requirements are met.

- You must have the Java Runtime Environment (1.5 or later) installed on your local system. To download the latest Java Runtime Environment, go to <http://java.com>.
- The 32-bit JDK file needs to be specified when starting the Oracle ILOM Remote Console as described in “[Launch the Oracle ILOM Remote Console](#)” on page 28. However, if you are using Windows Internet Explorer to launch the Oracle ILOM Remote Console for the first time, you must first register the 32-bit JDK file on your system. For more details, see “[Register 32-bit JDK File Type When Using Windows Internet Explorer](#)” on page 15.
- You must log in to the Oracle ILOM SP web interface using an Admin (a) or Console (c) role account. Either an Admin or Console role account is required to launch the Oracle ILOM Remote Console.
- You must have configured the Remote Control settings in the Oracle ILOM web interface. For instructions, see “[Configure KVMS Redirection Settings](#)” on page 13.

International Keyboard Support

The Oracle ILOM Remote System Console supports the use of the following international keyboard language layouts:

-
- | | | |
|---------------------------------|----------------|--------------|
| • Brazilian-Portuguese | • French | • Spanish |
| • Chinese | • German | • Japan (JP) |
| • Chinese -Traditional (Taiwan) | • Italian (IT) | • Russian |
| • English (US) | • Japanese | • Turkish |
| • Estonian | • Korean | |
-

▼ Launch the Oracle ILOM Remote Console

1. Log in to the Oracle ILOM web interface for the server SP.
2. Click Remote Control --> Redirection.

The Launch Redirection page appears.

System Information	System Monitoring	Configuration	User Management	Remote Control	Maintenance
Redirection	KVMS	Remote Power Control	Diagnostics	Host Control	Host Boot Mode
					Keyswitch

Launch Redirection

Manage the host remotely by redirecting the system console to your local machine. Launch the Sun ILOM Remote Console to utilize the RKVMS features. Select 16-bit high-quality color redirection for fast connections, or 8-bit lower-quality color redirection for slower connections. Select serial to access the Managed Host's serial console.

- ☒ I want to see redirection in 16-bit
- ☐ I want to see redirection in 8-bit
- ☐ I want to see serial redirection

Launch Redirection

Storage Redirection

You can optionally redirect local CDROM storage devices or CDROM image files from your workstation to the host by using the non-graphical storage redirection utility. This consists of a background service process running on your local machine that manages and maintains redirection to the host. This service is Java Web Start based and can be started by clicking 'Launch Service' below.

Launch Service

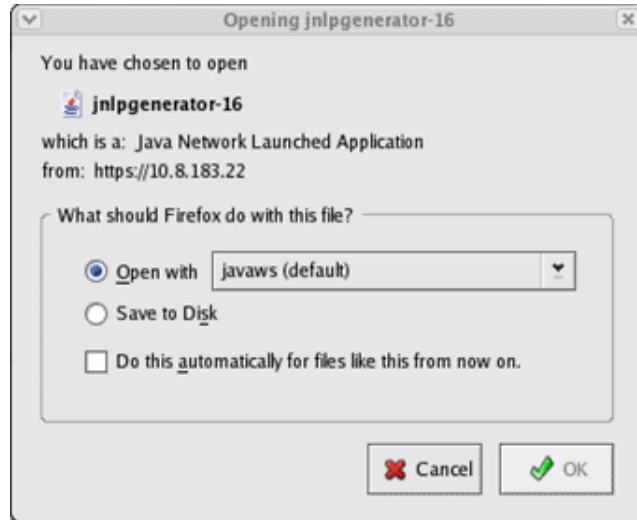
A scriptable, command-line Java client application is used to issue commands to the Service Processor for starting and stopping redirection of local storage devices and/or image files to one or more ILOM-enabled hosts. Click 'Download Client' below and save as StorageRedir.jar locally, and get started by running 'java -jar StorageRedir.jar -h' from a local command window prompt.

Download Client

Note – Depending on your platform, the Launch Redirection page will offer different combinations of redirection options. If multiple options are presented, select the type of redirection that you want to use to remotely manage this host.

3. To specify how you want to see the redirected system console, click one of the radio buttons.
4. Click **Launch Redirection**.

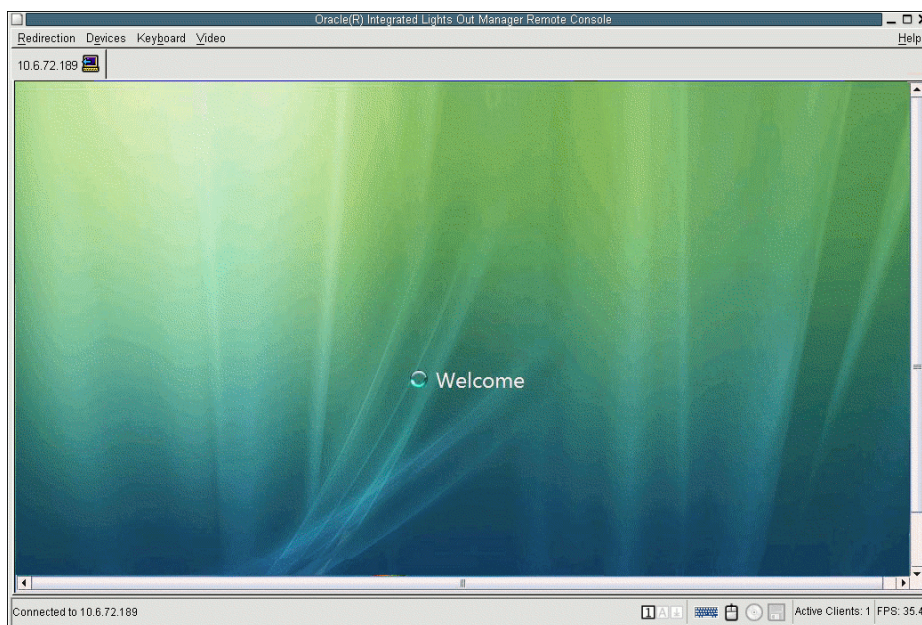
A dialog box appears indicating the file type chosen to launch the program.



5. In the Java Start Web Program dialog box do the following:
 - a. Click **Open with** and select the 32-bit JDK file.
 - b. Click the “Do this automatically for files like this from now on” check box.

Note – If a certificate warning message appears stating that the name of the site does not match the name on the certificate, click **Run** to continue.

The Oracle ILOM Remote Console window appears.



▼ Start, Stop, or Restart Device Redirection

1. In the Oracle ILOM Remote Console window, click the **Redirection** menu.
2. In the **Redirection** menu, specify, one of the following redirection options.

Option	Description
Start Redirection	Choose Start Redirection to enable redirection of devices. Start Redirection is enabled by default.
Restart Redirection	Choose Restart Redirection to stop and start redirection of devices. Typically, this option is used when a valid redirection is still established.
Stop Redirection	Choose Stop Redirection to disable the redirection of devices.

A confirmation message appears confirming that you want to change the redirection setting.

3. In the **Confirmation** message, click **Yes** to proceed or **No** to cancel the operation.

▼ Toggle Keyboard and Mouse Control

You can toggle control of your keyboard and mouse from the remote console application to the local client desktop using a keyboard sequence. This is especially useful when using *relative* KVMs mode in Oracle ILOM.

- **When the Oracle ILOM Remote Console window is displayed, use the following key sequences to toggle mouse and keyboard control to the remote console and back to the local client:**
 - To toggle keyboard control, type Alt-k.
 - To toggle mouse control, type Alt-m.

▼ Control Keyboard Modes and Key Send Options

Before You Begin

- A server redirection session must be active for the remote host server SP. For details, see [“Add New Server Redirection Session” on page 37](#).
- Device redirection must be started. For details, see [“Start, Stop, or Restart Device Redirection” on page 30](#).
- Keyboard redirection must be enabled. For details, see [“Redirect Keyboard Input \(Serial Redirection Only\)” on page 32](#).

To control keyboard modes and individual key send options, follow these steps:

1. **In the Oracle ILOM Remote Console window, click the Keyboard menu.**
2. **In the Keyboard menu, specify any of the following keyboard settings.**

Option	Description
Auto-keybreak Mode	Choose Auto-keybreak Mode to automatically send a keybreak after every key stroke. Use this option to help resolve keyboard problems over slow network connections. The Auto-keybreak Mode is enabled by default.
Stateful Key Locking	Choose Stateful Key Locking if your client uses stateful key locking. Stateful key locking applies to these three lock keys: Caps Lock, Num Lock, and Scroll Lock.
Left Alt Key* *Not available on Windows Client	Choose Left Alt Key to toggle the left Alt key on or off.
Right Alt Key* *Not available on Windows Client	Choose Right Alt Key to toggle the right Alt key on or off for non-U.S. keyboards. When enabled, this option enables you to type the third key character on a key. This keyboard option provides the same capabilities of an Alt Graph key.
F10	Choose F10 to apply the F10 function key (typically used in BIOS).
Control Alt Delete	Choose Control Alt Delete to send the Ctrl-Alt-Del sequence.
Control Space	Choose Control Space to send a Control-Space sequence to enable input on remote host.
Caps Lock	Choose Caps Lock to send the Caps Lock key to enable input with Russian and Greek keyboards.

Note – Not all of these keyboard settings apply during serial redirection.

▼ Redirect Keyboard Input (Serial Redirection Only)

Before You Begin

- This procedure applies only to serial console redirection.

- Although multiple users can connect to the system serial console, only one user at a time has write access to the console (that is, only one user can type commands into the system console). Any characters that other users type are ignored. This is referred to as a write lock, and the other user sessions are in read-only mode. If no other users are currently logged in to the system console, then you obtain the write lock automatically when you start keyboard redirection. If another user currently has write access to the console, you will be prompted to forcibly transfer write access away from the other session.
- A server redirection session must be active for the remote host server SP. For details, see [“Add New Server Redirection Session” on page 37](#).
- Device redirection must be started. For details, see [“Start, Stop, or Restart Device Redirection” on page 30](#).

To redirect a remote host server keyboard to your local client, follow these steps:

1. **In Oracle ILOM, click Remote Control --> KVMS.**
The KVMS Settings page appears.
2. **Click the KVMS Settings check box to enable the remote management state of the keyboard.**
The KVMS state is enabled by default.

▼ Redirect Mouse Input (Video Redirection Only)

Before You Begin

- Mouse redirection is supported only for video redirection settings.
- Configure your mouse settings to Absolute or Relative mouse mode. See [“Configure KVMS Redirection Settings” on page 13](#).
- A server redirection session must be active for the remote host server SP. For details, see [“Add New Server Redirection Session” on page 37](#).
- Device redirection must be started. For details, see [“Start, Stop, or Restart Device Redirection” on page 30](#).

To redirect a remote host server mouse to your local client, follow these steps:

1. **In Oracle ILOM, click Remote Control --> KVMS.**
The KVMS Settings page is displayed.

2. Click the KVMS State check box to enable the remote host management state of the mouse.

The KVMS state is set to Enabled by default.

▼ Redirect Storage Media

Before You Begin

- A server redirection session must be active for the remote host server SP. For details, see [“Add New Server Redirection Session” on page 37](#).
- Device redirection must be started. For details, see [“Start, Stop, or Restart Device Redirection” on page 30](#).
- For Oracle Solaris client systems, you must perform the following actions prior to redirecting storage devices:
 - If Volume Manager is enabled, you will need to disable this feature.
 - Assign root privilege to the processor that is running the Oracle ILOM Remote Console by entering these commands:

```
su to root
```

```
ppriv -s +file_dac_read pid_javarconsole
```

To redirect storage media (CD/DVD or ISO image) from your desktop to a host server, follow these steps:

1. In the Oracle ILOM Remote Console window, click the **Devices** menu.
2. In the **Devices** menu, perform the following actions:
 - a. Enable the appropriate storage device or image setting.

Option	Description
CD-ROM	Choose CD-ROM to enable the local CD device. This option causes your local CD-ROM drive to behave as though it were a CD device directly attached to the remote host server.

Floppy	Choose Floppy to enable the local floppy device. This option causes your local floppy drive to behave as though it were a floppy device directly attached to the remote host server.
CD-ROM Image	Choose CD-ROM Image to specify the location of a CD-ROM image on your local client or network share.
Floppy Image	Choose Floppy Image to specify the location of a floppy image on your local client or network share.

Note – Floppy storage media redirection is not supported on SPARC systems.

Note – If you are installing software from distribution media (CD/DVD), ensure that the media is inserted in the redirected drive. If you are installing software from an ISO image, ensure that the ISO image is stored on your local client or network shared file system.

A dialog appears prompting you to specify a storage drive location or image file location.

b. To specify the storage drive location or image file location, perform one of the following actions:

- In the Drive Selection dialog box, select or type a drive location, and then click OK.
- In the File Open dialog box, browse to the location of the image, and then click OK.

3. To reuse these storage settings on the host at a later time, click the Devices menu, and then Save as Host Default.

Note – The operation of a redirected CD drive or diskette can vary depending upon its state. For more information about understanding these different behaviors see the following section.

Interpreting CD and Diskette Redirection Behavior

Use the information in the following table to help identify different case scenarios in which the CD drive or diskette drive redirection functionality might behave during a Remote Console session.

Case	Status	DVD as Seen by Remote Host	Diskette as Seen by Remote Host
1	Remote Console application not started, or Remote Console started but DVD/diskette redirection not started.	DVD device present. No medium indication is sent to the host from Oracle ILOM when the hosts asks.	Diskette device present. No medium indication is sent to the host from Oracle ILOM when the host asks.
2	Remote Console application started with no medium present in the drive.	DVD device present. When the host asks, which might be automatic or when you access the device on the host, the remote client sends a status message. In this case, since there is no medium, the status is no medium.	Diskette device present. When the host asks (for example, you double-click a drive), the remote client sends a status message. In this case, since there is no medium, the status is no medium.
3	Remote Console application started with no medium, then medium is inserted.	DVD device present. When the hosts asks (automatic or manual), the remote client sends a status message as medium present and also indicates the medium change.	Diskette device present. When the host asks (manual), the remote client sends a status message as medium present and also indicates the medium change.
4	Remote Console application started with medium inserted.	Same as case 3.	Same as case 3.
5	Remote Console application started with medium present, then medium is removed.	Next command from the host will get a status message indicating medium not present.	Next command from the host will get a status message indicating medium not present.
6	Remote Console application started with image redirection.	Same as case 3.	Same as case 3.
7	Remote Console application started with image, but redirection is stopped (which is the only way to stop ISO redirection).	Driver knows DVD redirection stopped, so it sends a medium absent status on the next host query.	Driver knows DVD redirection stopped, so it sends a medium absent status on the next diskette query.
8	Network failure.	The software has a keep-alive mechanism. The software will detect keep-alive failure since there is no communication and will close the socket, assuming the client is unresponsive. Driver will send a no medium status to the host.	The software has a keep-alive mechanism. The software will detect unresponsive client and close the socket, as well as indicate to the driver that the remote connection went away. Driver will send a no medium status to the host.
9	Client crashes.	Same as case 8.	Same as case 8.

▼ Add New Server Redirection Session

1. **In the Oracle ILOM Remote Console window, click the Redirection menu, and then New Session.**

The New Session Creation dialog box appears.

2. **In the New Session Creation dialog box, type the IP address of a remote host server SP, and then click OK.**

The Login dialog box appears.

3. **In the Login dialog box, type a user name and password.**

A session tab for the newly added remote host server appears in the tab set of the Oracle ILOM Remote Console.

Note – The Login dialog box also asks you whether the new session is to be video redirection (which is supported on all x86 systems and some SPARC systems) or serial redirection (which is currently supported on SPARC systems). Consult your platform documentation for more information about which type of redirection is supported.

▼ Exit the Oracle ILOM Remote Console

To exit the Oracle ILOM Remote Console and close all remote server sessions, follow this step:

- **In the Oracle ILOM Remote Console window, click the Redirection menu, and then Quit.**

Understanding Oracle ILOM Storage Redirection CLI Features

The information in this topic describes Oracle ILOM Storage Redirection CLI features.

Descriptions	Links
Learn about using the Oracle ILOM Storage Redirection CLI for the first time.	“First-Time Use (Oracle ILOM Storage Redirection CLI)” on page 39
Learn about Oracle ILOM Storage Redirection CLI architecture.	“Storage Redirection CLI Architecture” on page 40
Learn about Oracle ILOM Storage Redirection CLI default network port.	“Default Network Communication Port” on page 41

Related Information

- [“Setting Up Oracle ILOM Storage Redirection CLI for First Time Use” on page 43](#)
- [“Redirecting a Storage Device Using the Oracle ILOM Storage Redirection CLI” on page 53](#)

First-Time Use (Oracle ILOM Storage Redirection CLI)

When you access the Storage Redirection CLI for the first time, you must sign in to the Oracle ILOM web interface to install the service and the client. After the service and client are installed on your system, you can subsequently start the service and launch the Storage Redirection CLI directly from a command window or terminal.

Note – You can, alternatively, choose to start the service directly from the Oracle ILOM web interface. If you choose to start the service from the Oracle ILOM web interface without installing it, you will need to subsequently access the Oracle ILOM web interface to start the service prior to launching the Storage Redirection CLI from a command window or terminal. For more information about how to install or start the service, see [“Setting Up Oracle ILOM Storage Redirection CLI for First Time Use”](#) on page 43.

Storage Redirection CLI Architecture

The Storage Redirection CLI consists of a Java Web Start service and a scriptable, Java command-line client. You must start the service and initially install the client from the Oracle ILOM web interface. The Storage Redirection service runs in the background of your local client and establishes the connection between your local client and the remote host server. After a connection is established, you can locally launch the Storage Redirection CLI from a command window or terminal. The Storage Redirection CLI enables you to issue commands to the service for starting and stopping storage redirection.

FIGURE: Storage Redirection Service and Client

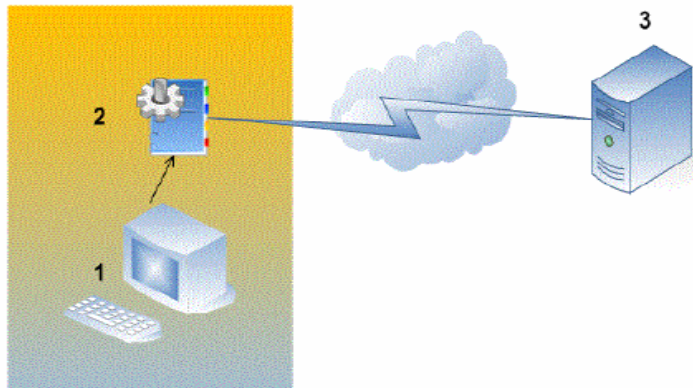


Figure Legend

- | | |
|---|--|
| 1 | Local client running Storage Redirection command-line client |
| 2 | Storage Redirection service running on local client |
| 3 | Remote host server |

Note – You can run only one instance of the Storage Redirection service on your local system at one time. However, you can launch multiple Storage Redirection CLIs by issuing the Storage Redirection command (`-jar StorageRedir.jar`) from a local command window or terminal.

For instructions about how to launch and use the Storage Redirection feature in Oracle ILOM, see:

- [“Setting Up Oracle ILOM Storage Redirection CLI for First Time Use” on page 43](#)
- [“Redirecting a Storage Device Using the Oracle ILOM Storage Redirection CLI” on page 53](#)

Default Network Communication Port

The default network communication port provided for Storage Redirection CLI is 2121. This default socket port enables the Storage Redirection CLI to communicate over the network with a remote host server SP. If you need to change the default network port, you must edit the `Jnlpgenerator-cli` file to manually override the default port number (2121).

For more information about how to edit the network port number that is referenced in the `Jnlpgenerator-cli` file, see [“Change the Default Storage Redirection Network Port: 2121” on page 45](#).

Setting Up Oracle ILOM Storage Redirection CLI for First Time Use

Task	Description	Platform Feature Support
Ensure that all requirements are met prior to performing the initial setup procedures in this section.	<ul style="list-style-type: none">• “Initial Setup Requirements (Oracle ILOM Storage Redirection CLI)” on page 44	<ul style="list-style-type: none">• x86 system server SP• SPARC system server SP
Change the default network port used for the Storage Redirection CLI.	<ul style="list-style-type: none">• “Change the Default Storage Redirection Network Port: 2121” on page 45.	
Start the Storage Redirection service on your system.	<ul style="list-style-type: none">• “Start the Storage Redirection Service Using the Mozilla Firefox Web Browser” on page 46- or -• “Start the Storage Redirection Service Using the Internet Explorer (IE) Web Browser” on page 48	
Download and install the Storage Redirection client.	<ul style="list-style-type: none">• “Download and Install the Storage Redirection Client” on page 51.	

Related Information

- [“Understanding Oracle ILOM Storage Redirection CLI Features”](#) on page 39
- [“Redirecting a Storage Device Using the Oracle ILOM Storage Redirection CLI”](#) on page 53

Initial Setup Requirements (Oracle ILOM Storage Redirection CLI)

Before you set up your system for storage redirection, the following prerequisites must be met.

- A connection is established from your local system to a remote host server SP Oracle ILOM web interface.
- Server module SP must be running Oracle ILOM 3.0 or later.
- The Java Runtime Environment (1.5 or later) is installed on your local system. To download the latest Java Runtime Environment, see <http://java.com>.

Note – If you do not have `JAVA_HOME` environment configured on your desktop, you might need to enter the full path.

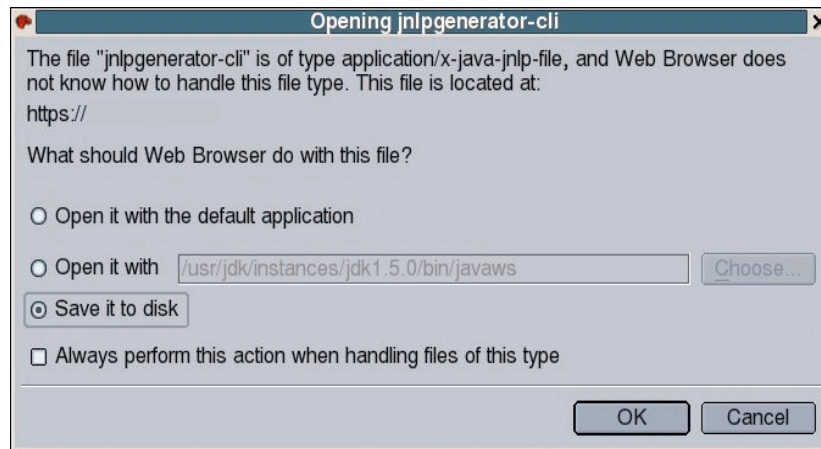
- The 32-bit Java Development Kit (JDK) file needs to be specified when you start the Storage Redirection service. You can choose (as described in the procedures) to initially save this file to disk and subsequently run this service directly from the command-line interface, or you can choose to initially open the file with the default application and subsequently start the service from the Oracle ILOM web interface prior to using the Storage Redirection properties from the CLI.
- Any user with a valid user account in Oracle ILOM can start or install the Storage Redirection service or client on his or her local system. However, after the initial setup for the Storage Redirection CLI is complete, you will be required to enter a valid Admin (a) or Console (c) role account to start or stop the redirection of a storage device (CD/DVD, or ISO image) on a remote server.
- The default network communication port provided for Storage Redirection CLI is 2121. This default socket port enables the Storage Redirection CLI to communicate over the network with a remote host server SP. If you need to change the default network port, you must edit the `Jnlpgenerator-cli` file to manually override the default port number (2121). For instructions for changing this port, see [“Change the Default Storage Redirection Network Port: 2121”](#) on page 45.

▼ Change the Default Storage Redirection Network Port: 2121

1. In the Oracle ILOM SP web interface, click Remote Control --> Redirection.
The Launch Redirection page appears.

2. Click Launch Service.

The Opening Jnlpgenerator-cli dialog box appears.



3. In the Opening Jnlpgenerator-cli dialog, select Save it to disk, and then click OK.

The Save As dialog box appears.

4. In the Save As dialog box, specify the location where you want to save the jnlpgenerator-cli file.

5. Open the jnlpgenerator-cli file using a text editor and modify the port number referenced in this file.

For example:

```
<application-desc>
<argument>cli</argument>
<argument>2121</argument>
</application-desc>
```

In the <application-desc> you can change the **second argument** to any port number that you want to use.

6. Save the changes you made and close the `jnlpgenerator-cli` file.
7. Use the `javaws` to start the Storage Redirection service from your local client.
- For example:
- ```
javaws jnlpgenerator-cli
```

---

**Note** – If you do not use the default port number provided, you must always identify the non-default port number in the Storage Redirection command-line interface when starting, stopping or viewing storage redirections.

---

# Starting the Storage Redirection Service

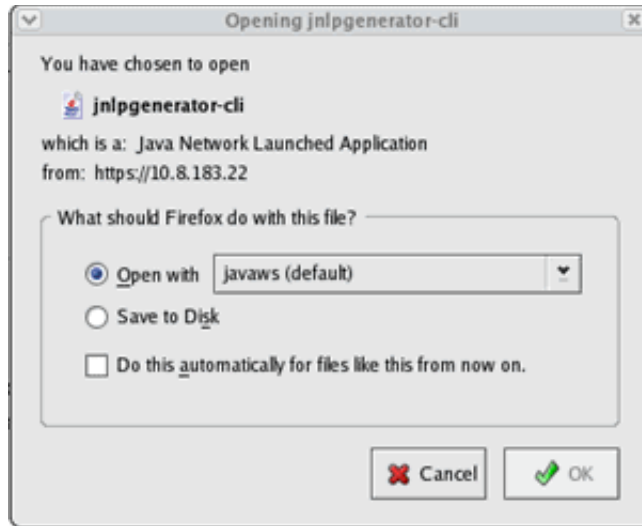
| Task                                                             | Description                                                                                                                                       | Platform Feature Support                                                                                |
|------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| Start the Storage Redirection Service using the Firefox browser. | <ul style="list-style-type: none"><li>• “Start the Storage Redirection Service Using the Mozilla Firefox Web Browser” on page 46</li></ul>        | <ul style="list-style-type: none"><li>• x86 system server SP</li><li>• SPARC system server SP</li></ul> |
| Start the Storage Redirection Service using the IE browser.      | <ul style="list-style-type: none"><li>• “Start the Storage Redirection Service Using the Internet Explorer (IE) Web Browser” on page 48</li></ul> |                                                                                                         |

## ▼ Start the Storage Redirection Service Using the Mozilla Firefox Web Browser

Follow these steps to specify the 32-bit JDK when starting the service for the Storage Redirection CLI using the Mozilla Firefox web browser.

1. **Log in to the Oracle ILOM SP web interface.**
2. **Click Remote Control --> Redirection --> Launch Service.**  
A dialog box appears indicating the file type chosen to start the service.





3. In the Opening jnlpgenerator-cli file dialog box, do the following:

a. Specify one of the following options for accessing the 32-bit JDK file.

- **Save to Disk** - To save the jnlpgenerator-cli file on your local system and run the service directly from a command line, select Save it to disk, and then click OK.

If you select this option, you will *not* need to subsequently sign in to the Oracle ILOM web interface to start the service. You will be able to start the service directly from a command window or terminal.

- **Open with...** - To run the service directly from the Oracle ILOM web interface, select Open it with javaws (default) (32-bit JDK file), and then click OK.

If you select this option, the jnlp file is not saved on your local system and you will need to subsequently sign in to the Oracle ILOM web interface to start the service prior to launching the Storage Redirection CLI.

b. (Optional) Select the “Do this automatically for files like this from now on” check box, and then click OK.

---

**Note** – To prevent the Opening Jnlpgenerator-cli dialog from reappearing each time you start the service from the Oracle ILOM web interface, you can select the “Do this automatically for files like this from now on” check box. However, if you choose to enable this option, you will no longer be able to display this dialog box when starting the service or installing the service from the Oracle ILOM web interface.

---

**Note** – If, in the future, you need to modify the default communication port number (2121) shipped with the Storage Redirection feature, you will need to display the Opening Jnlpgenerator-cli dialog to save and edit the jnlpgenerator-cli file on your system. In this instance, it is not recommended that you select the “Always perform this action when handling files of this type” check box. For more information about changing the default port number, see [“Change the Default Storage Redirection Network Port: 2121” on page 45.](#)

**4. Perform one of the following actions:**

| If you chose in Step 3 to:                                                                         | Perform these steps:                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>• Save the jnlpgenerator-cli file.</li></ul>                 | <ol style="list-style-type: none"><li>1. In the Save As dialog box, save the jnlpgenerator-cli file to a location on your local system.</li><li>2. To start the service from the command line, open a command window or terminal.</li><li>3. Navigate to the location where the jnlpgenerator-cli file is installed, then issue the javaws rconsole.jnlp command to start the service.<br/>For example:<br/>-&gt; <code>cd &lt;jnlp file location&gt;javaws rconsole.jnlp</code></li></ol> |
| <ul style="list-style-type: none"><li>• Run the service directly from the web interface.</li></ul> | <ul style="list-style-type: none"><li>• In the Warning Security dialog, click Run to start the Storage Redirection service.</li></ul>                                                                                                                                                                                                                                                                                                                                                      |

▼ **Start the Storage Redirection Service Using the Internet Explorer (IE) Web Browser**

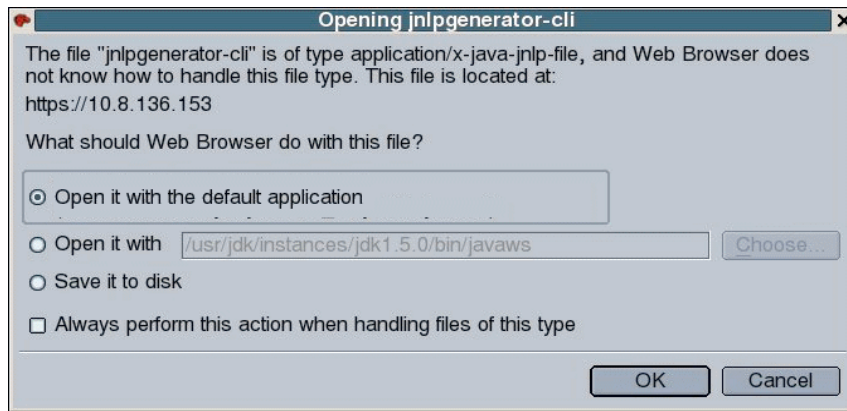
Perform the following steps *prior* to starting the service for the Storage Redirection CLI feature in Oracle ILOM. These steps describe how to start the Storage Redirection service after registering the 32-bit JDK file.

1. **Prior to starting the Storage Redirection service on your Windows system for the first time, you must register the 32-bit JDK file by following these steps:**
  - a. **On the Windows client, open Windows Explorer (not Internet Explorer).**
  - b. **In the Windows Explorer dialog box, click Tools --> Folder Options, and then click the Files Types tab.**
  - c. **In the Files Types tab, do the following:**
    - In the registered file type list, select the JNLP file type and click Change.

- In the Open With... dialog box, click Browse to select the 32-bit JDK file.
  - Select the “Always use the selected program to open this kind of file” check box.
  - Click OK, and then start the service for Storage Redirection in the Oracle ILOM web interface.
2. To start the Storage Redirection service (after registering the 32-bit JDK file), do the following:

- a. Log in to the Oracle ILOM SP web interface.
- b. Click Remote Control --> Redirection --> Launch Service.

The Opening Jnlpgenerator-cli dialog box appears.



- c. In the Opening Jnlpgenerator-cli dialog box, perform one of the following actions:
  - **Save it to disk** - To save the jnlpgenerator-cli file on your local system and run the service directly from a command line, select Save it to disk, and then click OK.  
 If you select this option, you will *not* need to subsequently sign in to the Oracle ILOM web interface to start the service. You will be able to start the service directly from a command window or terminal.
  - **Open with...** - To run the service directly from the Oracle ILOM web interface, select Open it with javaws (default) (32-bit JDK file), and then click OK.  
 If you select this option, the jnlp file is not saved on your local system and you will need to subsequently sign in to the Oracle ILOM web interface to start the service prior to launching the Storage Redirection CLI.

---

**Note** – To prevent the Opening Jnlpgenerator-cli dialog box from reappearing each time you start the service from the Oracle ILOM web interface, you can select the “Always perform this action when handling files of this type” check box. However, if you choose to enable this option, you will no longer be able to display this dialog box when starting the service or installing the service from the Oracle ILOM web interface.

---

---

**Note** – If, in the future, you need to modify the default communication port number (2121) shipped with the Storage Redirection feature, you will need to display the Opening Jnlpgenerator-cli dialog box to save and edit the `jnlpgenerator-cli` file on your system. In this instance, it is not recommended that you select the “Always perform this action when handling files of this type” check box. For more information about changing the default port number, see [“Change the Default Storage Redirection Network Port: 2121” on page 45](#).

---

**d. Perform one of the following actions:**

| If you chose in Step C to:                                                                        | Perform these steps:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>• Save the <code>jnlpgenerator-cli</code> file</li></ul>    | <ol style="list-style-type: none"><li>1. In the Save As dialog box, save the <code>jnlpgenerator-cli</code> file to a location on your local system.</li><li>2. To start the service from the command line, open a command window or terminal.</li><li>3. Navigate to the location where the <code>jnlpgenerator-cli</code> file is installed, then issue the <code>javaws rconsole.jnlp</code> command to start the service.<br/>For example:<br/><code>-&gt; cd &lt;jnlp file location&gt;javaws rconsole.jnlp</code></li></ol> |
| <ul style="list-style-type: none"><li>• Run the service directly from the web interface</li></ul> | <ul style="list-style-type: none"><li>• In the Warning Security dialog box, click Run to start the Storage Redirection service.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                         |

If the Storage Redirection service fails to start, an error message appears informing you of an error condition. Otherwise, if an error message did not appear, the service is started and is waiting for user input.

---

## ▼ Download and Install the Storage Redirection Client

Follow these steps to download and install the Storage Redirection client on your local system.

---

**Note** – The Storage Redirection client is a one-time client installation.

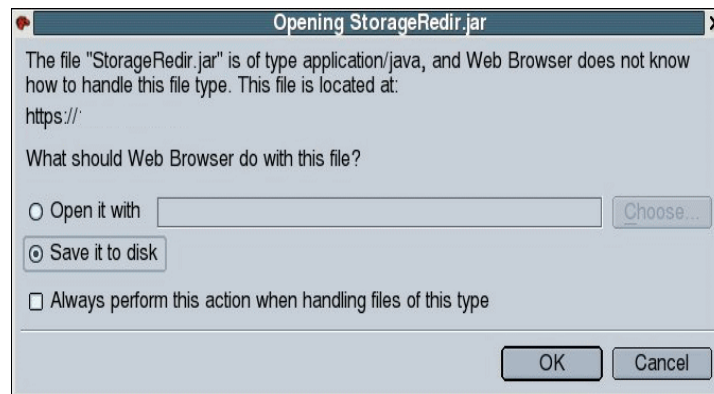
---

1. In the Oracle ILOM SP web interface, click Remote Control --> Redirection.

The Launch Redirection page appears.

2. Click Download Client.

The Opening StorageRedir.jar dialog box appears.



3. In the Opening StorageRedir.jar dialog box, click Save it to Disk, and then click OK.

The Save As dialog box appears.

---

**Note** – If you do not want the Opening StorageRedir dialog to reappear when installing the .jar file on other remote clients, you can select the “Always perform this action when handling files of this type” check box. However, if you choose to enable this option, you will no longer be able to display this dialog box (Opening StorageRedir) in the future when downloading the .jar file.

---

4. In the Save As dialog box, save the StorageRedir.jar file to a location on your local system.



# Redirecting a Storage Device Using the Oracle ILOM Storage Redirection CLI

---

| Description                                                                                                                  | Links                                                                                                                                                | Platform Feature Support                                                                                |
|------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| Ensure that all requirements are met before using the Storage Redirection CLI.                                               | <ul style="list-style-type: none"><li>• <a href="#">“Usage Requirements (Storage Redirection CLI)” on page 54</a></li></ul>                          | <ul style="list-style-type: none"><li>• x86 system server SP</li><li>• SPARC system server SP</li></ul> |
| Launch the Storage Redirection CLI.                                                                                          | <ul style="list-style-type: none"><li>• <a href="#">“Launch the Storage Redirection CLI Using a Command Window or Terminal” on page 55</a></li></ul> |                                                                                                         |
| If applicable, verify that Storage Redirection service is running.                                                           | <ul style="list-style-type: none"><li>• <a href="#">“Verify That the Storage Redirection Service Is Running” on page 56</a></li></ul>                |                                                                                                         |
| If applicable, display command-line Help; or learn more about the Storage Redirection command-line modes, syntax, and usage. | <ul style="list-style-type: none"><li>• <a href="#">“Display Storage Redirection CLI Help Information” on page 57</a></li></ul>                      |                                                                                                         |
| Redirect a storage device from the CLI.                                                                                      | <ul style="list-style-type: none"><li>• <a href="#">“Start Redirection of Storage Device” on page 58</a></li></ul>                                   |                                                                                                         |
| View a list of active storage devices.                                                                                       | <ul style="list-style-type: none"><li>• <a href="#">“View Active Storage Redirections” on page 59</a></li></ul>                                      |                                                                                                         |
| Stop the redirection of a storage device.                                                                                    | <ul style="list-style-type: none"><li>• <a href="#">“Stop Redirection of Storage Device” on page 60</a></li></ul>                                    |                                                                                                         |
| Learn about Storage Redirection CLI commands.                                                                                | <ul style="list-style-type: none"><li>• <a href="#">“Supported Storage Redirection Commands and Options” on page 60</a></li></ul>                    |                                                                                                         |

## Related Information

- [“Understanding Oracle ILOM Storage Redirection CLI Features” on page 39](#)

- [“Setting Up Oracle ILOM Storage Redirection CLI for First Time Use” on page 43](#)

---

## Usage Requirements (Storage Redirection CLI)

The following requirements must be met before you perform the procedures in this section.

- The Storage Redirection service must be started on your local system. If you installed the service on your local system, you can start it from a command window or terminal. If you did not install the service on your local system, you must start it from the Oracle ILOM web interface. For information about how to start or install the Storage Redirection service, see [“Starting the Storage Redirection Service” on page 46](#).

---

**Note** – You can only run one instance of the Storage Redirection service on your local system at one time.

---

- The Storage Redirection client (`StorageRedir.jar`) must be installed on your local system. For more information about how to install the Storage Redirection client, see [“Download and Install the Storage Redirection Client” on page 51](#).
- The Java Runtime Environment (1.5 or later) must be installed on your local system. To download the latest Java Runtime Environment, see <http://java.com>.
- A valid Oracle ILOM account with Administrator user role profile privileges is required to start or stop the redirection of a storage device (CD/DVD, or ISO image) on a remote server.

---

**Note** – Any user with a valid user account in Oracle ILOM can launch the Storage Redirection CLI (from a command window or terminal) and verify the status of the the service, or view the occurrence of an active storage redirection.

---

- On Windows systems, both uppercase drive letter 'C:\' and lowercase letter 'c:\' are accepted for CD-ROM and floppy image redirection. However, only uppercase drive letters ('D:\', 'A:\') are accepted for both CD-ROM drive and floppy drive redirection.
- For more information about the Storage Redirection command-line modes, syntax and usage, see [“Supported Storage Redirection Commands and Options” on page 60](#).



---

## ▼ Launch the Storage Redirection CLI Using a Command Window or Terminal

Prior to launching the Storage Redirection CLI, you must have started the Storage Redirection service. For instructions for launching the service, see [“Starting the Storage Redirection Service” on page 46](#).

### 1. Open a command-line interface.

For example:

- Windows systems: From the Start menu, click Run, type **cmd**, and then click OK.
- Solaris or Linux systems: Open a terminal window on the desktop.

### 2. Perform one of the following actions:

- To enter commands from an interactive shell mode, do the following:
  - a. **In the command-line interface, navigate to the directory where the Storage Redirection client (StorageRedir.jar) was installed using the `cd` command.**

For example:

```
cd <my_settings>/<storage_redirect_directory>
```

- b. **Enter the following command to launch the Storage Redirection CLI.**

```
java -jar StorageRedir.jar
```

For example:

```
C:\Documents and Settings\<redirectstorage>java -jar
StorageRedir.jar
```

The <storageredir> prompt appears.

---

**Note** – If you are using Windows, you must specify an uppercase letter for the target drive directory. For example, if you are using a DVD drive location, you need to specify `C:\` instead of `c:\`.

---

---

**Tip** – Oracle ILOM will not launch the Storage Redirection CLI if an extra space is entered in the command line. For example, there should be one space between `java` and `-jar` and one space between `-jar` and `StorageRedir.jar`.

---

- To enter commands from an non-interactive shell mode, do the following:
  - a. **In the command-line interface, enter the command to launch the Storage Redirection CLI (`java -jar StorageRedir.jar`) at the shell prompt (`$`).**

**\$ java -jar StorageRedir.jar**

---

**Note** – If you do not have a `JAVA_HOME` environment configured, you might need to use the full path to your Java binary. For example, if your JDK package was installed under `/home/user_name/jdk` then you would type:

`/home/user_name/jdk/bin/java -jar ...`

---

If the Storage Redirection CLI fails to launch, a detailed error message appears explaining the error condition. Otherwise, the Storage Redirection CLI is ready for user input.

---

**Note** – You can launch multiple Storage Redirection CLIs by issuing the Storage Redirection command (`-jar StorageRedir.jar`) from a local command window or terminal.

---

## ▼ Verify That the Storage Redirection Service Is Running

The following procedure assumes that you have already launched the Storage Redirection CLI from a command window or terminal. For instructions for launching the Storage Redirection CLI, see [“Launch the Storage Redirection CLI Using a Command Window or Terminal” on page 55](#).

- **Type the following command at the `<storageredir>` prompt to verify that the Storage Redirection service is active:**

**test-service**

For example:

```
<storageredir> test-service
```

Alternatively, you could enter this same command (`test-service`) using the non-interactive shell mode syntax. For more information, see [“Supported Storage Redirection Commands and Options” on page 60](#).

A message appears stating whether the service connection passed or failed.

---

**Note** – If the service connection fails, you will need to start the Storage Redirection service from the Oracle ILOM web interface or from a command window (if the service was installed) by issuing the `javaws rconsole.jnlp` command. For details, see [“Starting the Storage Redirection Service” on page 46](#).

---

## ▼ Display Storage Redirection CLI Help Information

The following procedure assumes that you have already launched the Storage Redirection CLI from a command window or terminal. For instructions for launching the Storage Redirection CLI, see [“Launch the Storage Redirection CLI Using a Command Window or Terminal” on page 55](#).

- Type the following command at the `<storageredir>` prompt to display the command-line help:

```
help
```

For example:

<storageredir> **help**

The following information about the command syntax and usage appears:

```
Usage:
 list [-p storageredir_port] [remote_SP]
 start -r redir_type -t redir_type_path
 -u remote_username [-s remote_user_password]
 [-p storageredir_port] remote_SP
 stop -r redir_type -u remote_username
 [-s remote_user_password] [-p storageredir_port] remote_SP
 stop-service [-p storageredir_port]
 test-service [-p storageredir_port]
 help
 version
 quit
```

Alternatively, you could enter this same command (**help**) using the non-interactive shell mode syntax. For more information, see [“Supported Storage Redirection Commands and Options” on page 60](#).

---

## ▼ Start Redirection of Storage Device

### Before You Begin

The following procedure assumes that you have already launched the Storage Redirection CLI from a command window or terminal. For instructions for launching the Storage Redirection CLI, see [“Launch the Storage Redirection CLI Using a Command Window or Terminal” on page 55](#).

---

**Note** – Commands shown in the following procedure should be entered as one continuous string.

---

- At the <storageredir> prompt, type the **start** command followed by the commands and properties for the redirection device type, path to device, remote SP user\_name and password, and the IP address of the remote SP.

For example:

```
<storageredir> start -r redir_type -t redir_type_path -u remote_username [-s
remote_user_password] [-p non_default_storageredir_port] remote_SP_IP
```

---

**Note** – On Windows systems, both uppercase drive letter 'C:\' and lowercase letter 'c:\' are accepted for CD-ROM and floppy image redirection. However, only uppercase drive letters ('D:\', 'A:\') are accepted for both CD-ROM drive and floppy drive redirection.

---

Alternatively, you could enter this same command (`start`) using the non-interactive shell mode syntax. For more information, see [“Supported Storage Redirection Commands and Options” on page 60](#).

---

**Note** – You must specify a valid Admin or Console role account (`-u remote_username [-s remote_user_password]`) to start the redirection of a storage device on a remote server. If you do not specify the password command (`-s remote_user_password`), the system will automatically prompt you for it.

---

---

## ▼ View Active Storage Redirections

### Before You Begin

The following procedure assumes that you have already launched the Storage Redirection CLI from a command window or terminal. For instructions for launching the Storage Redirection CLI, see [“Launch the Storage Redirection CLI Using a Command Window or Terminal” on page 55](#).

---

**Note** – Commands shown in the following procedure should be entered as one continuous string.

---

- **At the `<storageredir>` prompt, type the `list` command followed by the sub-commands and properties for any non-default storage redirection *ports* and the *IP addresses* of the remote host server SP.**

For example:

```
<storageredir> list [-p non_default _storageredir_port] remote_SP
```

Alternatively, you could enter this same command (`list`) using the non-interactive shell mode syntax. For more information, see [“Supported Storage Redirection Commands and Options” on page 60](#).

A list appears identifying the active storage redirections for each server SP specified.

---

## ▼ Stop Redirection of Storage Device

### Before You Begin

The following procedure assumes that you have already launched the Storage Redirection CLI from a command window or terminal. For instructions for launching the Storage Redirection CLI, see [“Launch the Storage Redirection CLI Using a Command Window or Terminal”](#) on page 55.

---

**Note** – Commands shown in the following procedure should be entered as one continuous string.

---

- At the `<storageredir>` prompt, type the `stop` command followed by the commands and properties for the: *storage device type*, *remote SP user name* and *password*, *storage redirection port*, and the *IP address* of the remote host server SP.

For example:

```
<storageredir> stop -r redir_type -u remote_username [-s remote_user_password] [-p non_default_storageredir_port] remote_SP
```

Alternatively, you could enter this same command (`stop`) using the non-interactive shell mode syntax. For more information, see [“Supported Storage Redirection Commands and Options”](#) on page 60.

---

**Note** – You must specify a valid Admin or Console role account (`-u remote_username [-s remote_user_password]`) to stop the redirection of a storage device on a remote server. If you do not specify the password command (`-s remote_user_password`), the system will automatically prompt you for it.

---

---

## Supported Storage Redirection Commands and Options

The Storage Redirection CLI supports both an interactive and non-interactive mode for entering commands. The interactive mode is useful when you need to enter a series of Storage Redirection commands. The non-interactive mode is useful when you need to run a batch procedure or script.

# Syntax

The syntax required for entering the Storage Redirection commands in either of these modes is as follows:

## ■ Interactive shell mode syntax

```
<storageredir> <command> <command options> <sub-commands> <sub-command options>
```

## ■ Non-interactive shell mode syntax

```
$ java -jar StorageRedir.jar <command> <command options> <sub-commands> <sub-command options>
```

| Command Name               | Description                                                                                                                  |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------|
| java -jar StorageRedir.jar | The java -jar command is used to launch the Storage Redirection client (StorageRedir.jar) from a command window or terminal. |
| storageredir               | The storagedir command performs all storage redirection operations.                                                          |

# Command Options

| Option Name | Description                                                          |
|-------------|----------------------------------------------------------------------|
| - h         | The - h command option displays the command-line Help information.   |
| - v         | The -v command option displays the Java command version information. |

# Sub-Commands

| Sub-Command Name | Description                                                                                                                                                                                                                       |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| list             | <p>The list sub-command provides a list of the currently active storage redirections on one or all remote SPs.</p> <p><b>Syntax usage example:</b></p> <pre>storageredir <b>list</b> [-p storageredir_port]<br/>[remote_SP]</pre> |

| Sub-Command Name | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| start            | <p>The start sub-command invokes the specified redirection between the local host and the remote host server. If the authentication password is not provided, the system will prompt for it.</p> <p><b>Syntax usage example:</b></p> <pre>storageredir <b>start</b> -r redir_type -t redir_type_path -u remote_username [-s remote_user_password] [-p storageredir_port] remote_SP</pre> <p><b>Note</b> - You must specify a valid Admin or Console role account in Oracle ILOM to start the redirection of storage device on a remote server.</p> |
| stop             | <p>The stop sub-command stops the specified redirection between the local host and the remote host server. If the authentication password is not provided, the system will prompt for it.</p> <p><b>Syntax usage example:</b></p> <pre>storageredir <b>stop</b> -r redir_type -u remote_username [-s remote_user_password] [-p storageredir_port] remote_SP</pre> <p><b>Note</b> - You must specify a valid Admin or Console role account in Oracle ILOM to stop the redirection of storage device on a remote server.</p>                         |
| test-service     | <p>The test-service sub-command verifies whether the Storage Redirection service connection is active on the local host.</p> <p><b>Syntax usage example:</b></p> <pre>storageredir <b>test-service</b> [-p storageredir_port]</pre>                                                                                                                                                                                                                                                                                                                |
| stop-service     | <p>The stop-service sub-command stops the Storage Redirection service connection to the remote host server.</p> <p><b>Syntax usage example:</b></p> <pre>storageredir <b>stop-service</b> [-p storageredir_port]</pre>                                                                                                                                                                                                                                                                                                                             |



# Sub-Command Options

| Sub-Command Option Name                     | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>-r <i>redir_type</i></code>           | <p>The <code>-r <i>redir_type</i></code> identifies the type of storage media being redirected.</p> <p>Valid device values for <i>redir_type</i> include:</p> <ul style="list-style-type: none"><li>• CD-ROM device<br/>Syntax: <code>-r cdrom</code></li><li>• CD-ROM image:<br/>Syntax: <code>-r cdrom_img</code></li><li>• Floppy device:<br/>Syntax: <code>-r floppy</code></li><li>• Floppy image:<br/>Syntax: <code>-r floppy_img</code></li></ul>        |
| <code>-t <i>redir_type_path</i></code>      | <p>The <code>-t <i>redir_type_path</i></code> identifies the full path to where the storage redirection media is stored or mounted.</p> <p>Example:</p> <p><code>-t /home/username/JRC_Test_Images/CDROM.iso</code></p>                                                                                                                                                                                                                                         |
| <code>-u <i>remote_username</i></code>      | <p>The <code>-u <i>remote_username</i></code> identifies the user name required to log in to the Oracle ILOM SP.</p> <p>Example:</p> <p><code>-u john_smith</code></p> <p><b>Note</b> - Any valid user account in Oracle ILOM can install or launch the Storage Redirection service or client on a local system. However, a valid Admin or Console role in Oracle ILOM is required to start or stop the redirection of a storage device on a remote server.</p> |
| <code>-s <i>remote_user_password</i></code> | <p>The <code>-s <i>remote_user_password</i></code> identifies the password required to log in to the Oracle ILOM SP.</p> <p>If this password command is not specified at the command line, the system will automatically prompt you for it.</p>                                                                                                                                                                                                                 |
| <code>-p <i>storageredir_port</i></code>    | <p>The <code>-p <i>storageredir_port</i></code> identifies the Storage Redirection communication port on the local host. The default port provided is 2121.</p> <p>Example:</p> <p><code>-p 2121</code></p>                                                                                                                                                                                                                                                     |



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