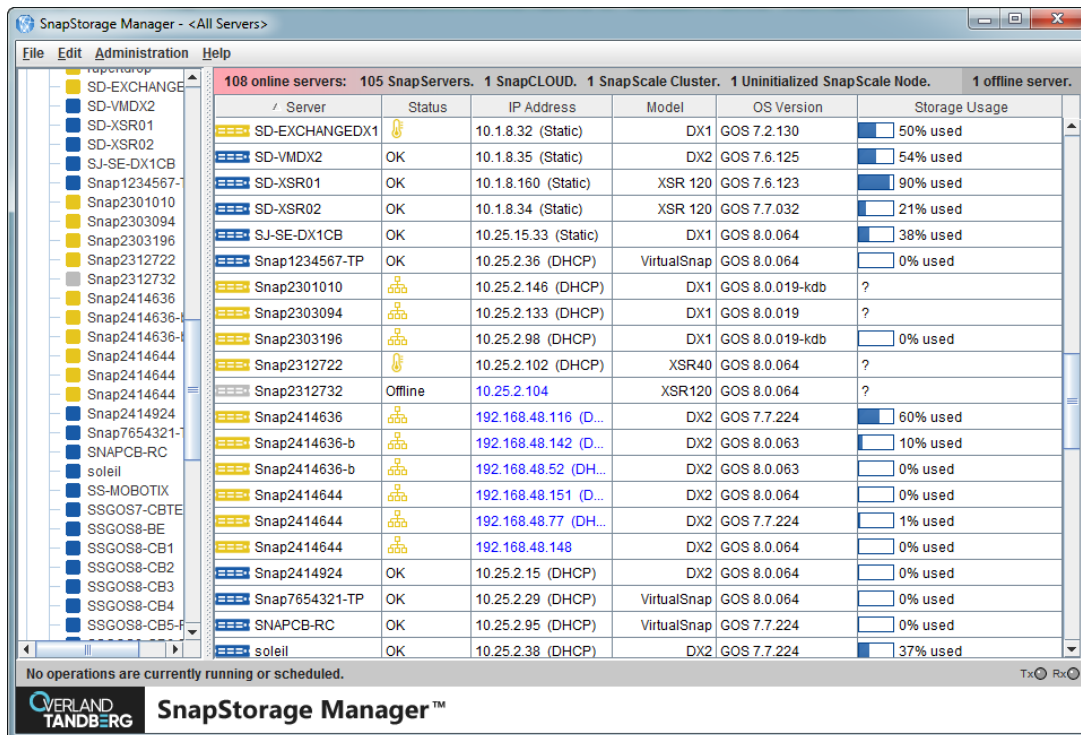


SnapStorage Manager™

Version 8.6 User Guide



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Preface

Audience and Purpose

This guide is intended for users charged with managing SnapServer appliances running GuardianOS 7.0 or higher, SnapCLOUD servers, or SnapScale nodes running RAINcloudOS on their network using SnapStorage Manager (SSM). It provides server tasks, tips on maximizing SSM functionality, and user scenarios. SnapStorage Manager is usually installed on a network computer in the same LAN as the SnapServers, SnapCLOUD servers, and SnapScale nodes it manages.

It is assumed that the administrator is familiar with the basic concepts and tasks of multi-system network administration.

Product Documentation and Software

The SnapStorage Manager product documentation is available at the Overland-Tandberg Knowledge Base:

<https://community.sphere3d.com/community/documentation>

The latest release of the SnapStorage Manager and other software is available online:

<http://docs.overlandstorage.com/snapserver>

Overland Technical Support

For warranty and general technical support information, see our [Contact Us](#) web page:

<http://www.overlandstorage.com/company/contact-us/index.aspx>

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To search for more service information, visit our [Knowledge Bases](#):

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(Translation: This is a Class A product based on the standard of the VCCI Council. If this equipment is used in a domestic environment, radio interference may occur, in which case, the user may be required to take corrective actions.)

Conventions

This document exercises several alerts and typographical conventions.

Convention	Description & Usage
 WARNING	A <i>Warning</i> contains information concerning personal safety. Failure to follow directions in the Warning could result in bodily harm or death.
WARNUNG	Eine <i>Warnung</i> enthält Informationen zur persönlichen Sicherheit. Das Nichtbeachten der Anweisungen in der Warnung kann zu Verletzungen oder zum Tod führen.
ADVERTISSEMENT	Un <i>avertissement</i> contient des informations relatives à la sécurité personnelle. Ignorer les instructions dans l'avertissement peut entraîner des lésions corporelles ou la mort.
 CAUTION	A <i>Caution</i> contains information that the user needs to know to avoid damaging or permanently deleting data or causing physical damage to the hardware or system.
 IMPORTANT	An <i>Important</i> note is a type of note that provides information essential to the completion of a task or that can impact the product and its function.
Item_name	Words in this special boldface font indicate the names of buttons or pages found in the Web Management Interface.
Ctrl-Alt-r	This type of format details the keys you press simultaneously. In this example, hold down the Ctrl and Alt keys and press the r key.
NOTE	A <i>Note</i> indicates neutral or positive information that emphasizes or supplements important points of the main text. A note supplies information that may apply only in special cases, for example, memory limitations or details that apply to specific program versions.
Menu Flow Indicator (>)	Words with a greater than sign between them indicate the flow of actions to accomplish a task. For example, Setup > User > Password indicates that you should click the Setup tab, then the User secondary tab, and finally the Password button to accomplish a task.
Courier Italic	A variable for which you must substitute a value.
Courier Bold	Commands you enter in a command-line interface (CLI).

Information contained in this guide has been reviewed for accuracy, but not for product warranty because of the various environments, operating systems, or settings involved. Information and specifications may change without notice.

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1

Overview

SnapStorage Manager (SSM) is a Java-based application that runs on all major client systems. SSM provides a single screen from which administrators can discover all GuardianOS SnapServers, SnapCLOUD servers, REO appliances, SnapSAN arrays, SnapScale clusters, and SnapScale Uninitialized nodes (that is, nodes that are not part of a SnapScale cluster) on their network.

Once found, an external application or browser can be used for management of the systems. Additionally, SSM can monitor, upgrade, restart, or shutdown one or more systems simultaneously.

This section is divided into sub-sections that provide the key processes and configuration options needed to maximize your usage of SnapStorage Manager:

Topics in Overview:

- [Tips and Requirements](#)
- [SnapStorage Manager Main Window](#)

Tips and Requirements

Consider the following technical tips and requirements when deploying SnapStorage Manager on the network.

Normalize Admin Passwords for Groups

Before you can configure a group of servers, the admin password for each server in the group must be entered. If the members in the group have different admin passwords, you need to remember and enter the password for each member. Normalizing the password for the admin account for each group member allows you to gain administrative access to all members in the group by entering just a single password.

Right-Click vs. Control-Click

This document uses the Windows convention of right-clicking in describing keyboard access to context-sensitive menus. Macintosh users should substitute control-click to achieve the same result.

SnapStorage Manager Main Window

The SnapStorage Manager main window allows an administrator instant access to all the supported systems on the network.

The screenshot displays the SnapStorage Manager interface with the following components:

- Server Status Bar:** Located at the top, it shows: 108 online servers: 105 SnapServers, 1 SnapCLOUD, 1 SnapScale Cluster, 1 Uninitialized SnapScale Node, 1 offline server.
- Groups List:** A vertical list on the left side showing various system groups like SD-EXCHANGE, SD-VMDX2, SD-XSR01, etc.
- Details List:** A central table displaying server details. The table has columns for Server, Status, IP Address, Model, OS Version, and Storage Usage.

Server	Status	IP Address	Model	OS Version	Storage Usage
SD-EXCHANGEDX1	OK	10.1.8.32 (Static)	DX1	GOS 7.2.130	50% used
SD-VMDX2	OK	10.1.8.35 (Static)	DX2	GOS 7.6.125	54% used
SD-XSR01	OK	10.1.8.160 (Static)	XSR 120	GOS 7.6.123	90% used
SD-XSR02	OK	10.1.8.34 (Static)	XSR 120	GOS 7.7.032	21% used
SJ-SE-DX1CB	OK	10.25.15.33 (Static)	DX1	GOS 8.0.064	38% used
Snap1234567-TP	OK	10.25.2.36 (DHCP)	VirtualSnap	GOS 8.0.064	0% used
Snap2312732	Offline	10.25.2.146 (DHCP)	DX1	GOS 8.0.019-kdb	?
Snap2303094	OK	10.25.2.133 (DHCP)	DX1	GOS 8.0.019	?
Snap2303196	OK	10.25.2.98 (DHCP)	DX1	GOS 8.0.019-kdb	0% used
Snap2312722	Offline	10.25.2.104	XSR120	GOS 8.0.064	?
Snap2414636	OK	192.168.48.116 (D...)	DX2	GOS 7.7.224	60% used
Snap2414636-b	OK	192.168.48.142 (D...)	DX2	GOS 8.0.063	10% used
Snap2414636-b	OK	192.168.48.52 (DH...)	DX2	GOS 8.0.063	0% used
Snap2414644	OK	192.168.48.151 (D...)	DX2	GOS 8.0.064	0% used
Snap2414644	OK	192.168.48.77 (DH...)	DX2	GOS 7.7.224	1% used
Snap2414644	OK	192.168.48.148	DX2	GOS 8.0.064	0% used
Snap2414924	OK	10.25.2.15 (DHCP)	DX2	GOS 8.0.064	0% used
Snap7654321-TP	OK	10.25.2.29 (DHCP)	VirtualSnap	GOS 8.0.064	0% used
SNAPCB-RC	OK	10.25.2.95 (DHCP)	VirtualSnap	GOS 7.7.224	0% used
soleil	OK	10.25.2.38 (DHCP)	DX2	GOS 7.7.224	37% used
- Operation Status Bar:** Located at the bottom, it shows: No operations are currently running or scheduled.

The SnapStorage Manager main screen is divided into four sections:

- **Server Status Bar** – Located at the top of the screen, it displays counts of online and offline servers. It gives a count of each type of Snap product that is online.
- **Groups List** – Located on the left, it provides a collapsible list of supported systems that can be sorted into groups for easier management.
- **Details List** – Located on the right, it is the main area and shows detailed information about each supported system.
- **Operation Status Bar** – Located at the bottom of the screen, it provides specific information about operations and transmissions (Tx/Rx).

Because it is a graphical interface, the main screen is able to convey large amounts of information using specialized SSM icons for each system type and their current statuses.

The Details List area contains several columns of information. Use the hidden option list (right-click the column header area) to make changes (see [Customize the SSM Interface on page 12](#)).

- Server
- Status
- OS
- Model
- IP Address
- OS Version
- Number
- Up-Time (D:H:M)
- Storage Usage
- Discovery State
- Configured
- Expansion Units
- Snap ECR
- New Column
- Delete Column
- Reset Columns

Server Icons

The **Server** column in the Details List of SnapStorage Manager has visual cues to the status and health of the systems on your network. The following color scheme applies to all icons you see on the SnapStorage Manager main window and any sub-windows that are displayed.

















Server Icon	Uninitialized Node Icon	SnapScale Cluster Icon	SnapCLOUD Icon	Description
				The system is online.
				One or more status indicators indicate a warning-level condition.
				One or more status indicators indicate a fault-level condition.
				The system is offline.

Status Icons


The **Status** column in the Details List uses the following icons to alert users to the different statuses on systems managed by SSM. These icons follow the usual alert color-coding and turn the appropriate color depending on the alert.

To check the status of a system, double-click the system name to open the Properties screen.

Icon	Description
Drive Status – Indicates whether a drive error has occurred. Double-click the system name to check the specific problem.	
	All disks are OK.
	A disk has a warning-level condition.



Icon	Description
	A disk has a fault-level condition or failed.
	Disk status is not available (system may be offline).
Ethernet Status – Indicates whether an error has occurred with a NIC. Double-click the system name to check the specific problem.	
	All Ethernet ports are OK.
	An Ethernet port has no link.
	An Ethernet port has failed, or one Ethernet port in a bonded pair has no link.
	NIC status is not available (system may be offline).
Power Supply Status – Indicates whether the power to the system has encountered a problem. Double-click the system name to check the specific problem.	
	All power supplies are OK.
	A power supply is missing, has failed, or is not plugged in.
	Power supply status is not available (system may be offline).
Fan Status – Indicates whether a fan on the system has encountered a problem. Double-click the system name to check the specific problem.	
	All fans are OK.
	A fan is missing or has failed.
	Fan status is not available (system may be offline).
System/CPU Temperature – Indicates whether the system or CPU temperature has changed to possibly harmful levels. Double-click the system name to check the specific problem.	
	System or CPU temperature is OK.
	System or CPU temperature is high.
	System or CPU temperature is critical.
	Temperature status is not available (system may be offline).

The Details List also displays a storage usage icon that shows what percentage of the space on the system's main volume is being used:

Icon	Description
	Storage Usage – The blue bar indicates how much of the storage space on the system's volumes and iSCSI disks has been used. The numerical usage percentage is shown to the right. If the maximum is almost reached, the usage text is shown in red. Offline systems display a question mark (?).

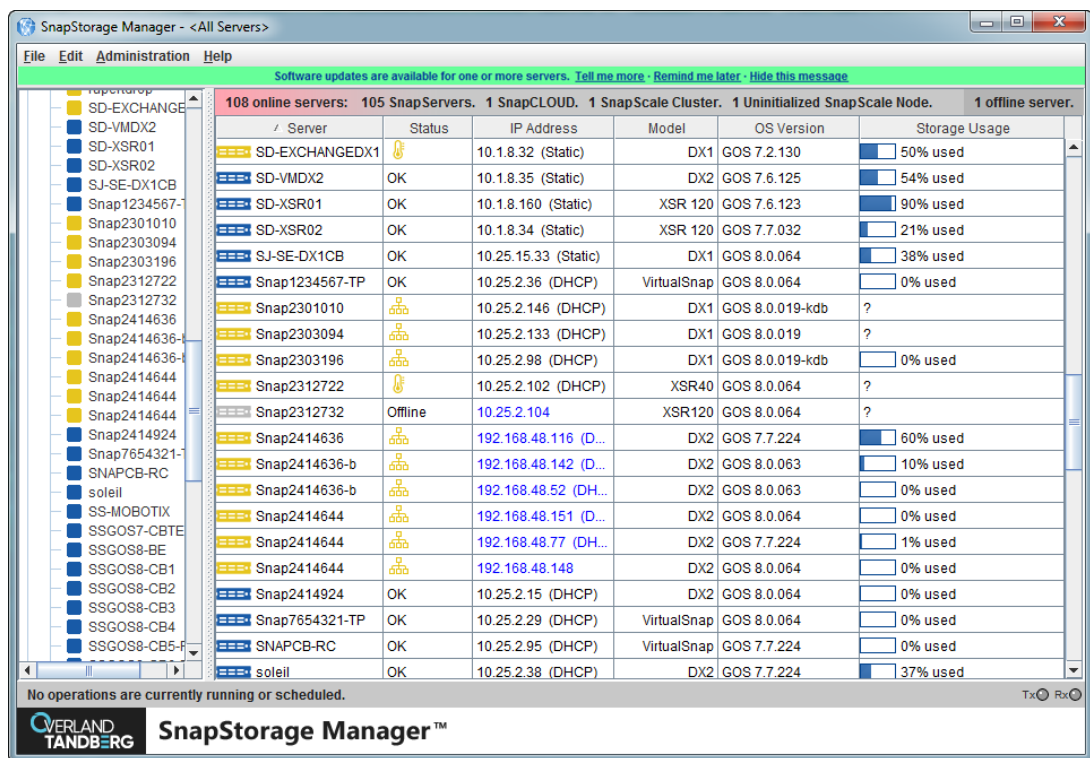
Communication Indicators

For all supported systems, the Status Bar displays two LED indicators that monitor the transmission of discovery packets. Discovery packets are used to monitor the status of systems that SSM is monitoring. The LED indicators are located at the bottom right of the screen. For more information about discovery packets, see [System Discovery on page 8](#).

Icon	Description
	“Tx” stands for “Transmit” and lights whenever SSM sends out a request for discovery information.
	“Rx” stands for “Receive” and lights whenever SSM receives a discovery packet.
	The mouseover tooltip displays the number of packets transmitted and received, respectively.

Software Update Notification Banner

A banner is displayed across the top of the GUI whenever OS updates are available for discovered systems.



NOTE: The Software Update Notification feature is enabled by default, but can be disabled from [Edit > Options](#).

The **Tell me more** link in the banner opens the **Server Software Updates** dialog box, listing the systems for which an update is available, the current OS version each of the systems is running, and the updated version available for each of the systems.

NOTE: You can choose to hide the banner by clicking the “Remind me later” or “Hide this message” link on the banner. When “Remind me later” is clicked, the system displays the banner after the next check for updates; when “Hide this message” is clicked, the system hides the banner for the specific update until a later version update is released.

SnapStorage Manager Features

SnapStorage Manager can be used to discover SnapServers, SnapCLOUD servers, REO appliances, SnapSAN arrays, SnapScale clusters, and SnapScale Uninitialized nodes. Status monitoring is available for SnapServers, SnapCLOUD servers, and Uninitialized nodes.

Topics in SnapStorage Manager Features:

- [Primary Features](#)
- [System Discovery](#)
- [About SSM Dialog Box](#)
- [Customize the SSM Interface](#)
- [SnapServer/SnapCLOUD Server Administration](#)

Primary Features

SnapStorage Manager provides a single management interface across all of your SnapServer devices. The following are the main features of SSM:

- [Discover Systems on the Network](#)
- [Launch External Administration](#)
- [Assign IP Addresses to SnapServers on a Network Without a DHCP Server](#)
- [Monitor System Status](#)
- [Software Update Notification](#)
- [Multiple Server Administration](#)

Discover Systems on the Network

SnapStorage Manager automatically discovers all supported systems on the same network segment and displays them in the main SSM window. Additionally, SSM discovers systems outside the local network if they have been added to the Remote Servers list. For more information, see [System Discovery on page 8](#).

Launch External Administration

The Web Management Interface is a browser-based application that allows you to perform a wide range of administrative tasks on a system-by-system basis. To launch this tool, right-click the system name or click the name and go to **Administration > Launch Web Management Interface**.

Assign IP Addresses to SnapServers on a Network Without a DHCP Server

By default, SnapServers and Uninitialized nodes are preconfigured to use DHCP to acquire an IP address at startup. If a SnapServer or Uninitialized node cannot find a DHCP server on the network, you may not be able to access the system. SSM discovers all SnapServers, Uninitialized nodes, and SnapScale clusters on its local subnet using a proprietary multicast communication mechanism.

To set a static IP address for a specific SnapServer or Uninitialized node, right-click the system name in the Details List and select **Set IP Address**.

Monitor System Status

The color coding of system and group names alerts administrators to warning and fault conditions on a system. To view detailed status information, double-click anywhere in the row in the Details List. See [Server Icons on page 3](#).

Software Update Notification

SnapStorage Manager is configured to check daily for available updates for both GuardianOS and SnapCLOUD, and to display an alert at the top of the Details List when updates are available.

To force SSM to check for available updates immediately, click **Administration > Check for Server Software Updates**. SSM connects to the remote software update server, searches for applicable updates for all of the discovered systems, and displays them in the Software Updates dialog box.

Multiple Server Administration

SnapStorage Manager can perform an upgrade, reboot, or shutdown on one or more servers simultaneously and report the status of operations. These tasks are handled by selecting multiple servers, logging on, and selecting the appropriate task under the **Administration** tab.

System Discovery

At SnapStorage Manager startup and once per minute afterward, SSM broadcasts a discovery request packet to its local subnet. Supported systems on the same network segment that receive discovery requests respond with a discovery packet containing information. All other discovery activity is performed using both direct communication (unicast) and a proprietary multicast communication mechanism that does not impact other systems on the network.

When SSM sends or receives discovery packets, status LEDs at the right on the Status Bar flash according to which activity is taking place. The LED labeled “**Tx**” flashes whenever SSM sends out a discovery request. The LED labeled “**Rx**” flashes whenever SSM receives a system discovery information packet.

You can add other supported systems that reside outside the local network segment by entering their IP addresses in the Remote Server List (**Edit > Remote Servers**). This includes SnapServers, SnapCLOUD servers, and Uninitialized nodes.

NOTE: SnapCLOUD servers can only be discovered via the Remote Server List.

If SSM has not been able to communicate with a discovered system (for example, the system is offline or has just been started), that system's IP address appears in blue and the Properties screen for that system shows Not Validated next to the IP address. Once SSM has successfully communicated with the system, the text color of the IP address changes to black, and Validated appears on the Properties screen.

Local Discovery

A *local system* is one that resides on the same network segment as the machine on which SnapStorage Manager is installed. Overland systems regularly send Multicast discovery information to their local network segment, other systems broadcast their presence once on startup, and all systems respond to discovery request broadcasts from SSM. SSM passively listens for Multicast or broadcast discovery information from supported systems and broadcasts a discovery request packet on the local network segment in three cases: (1) at startup; (2) once per minute; and (3) when the administrator manually refreshes the information by selecting **Edit > Refresh All**.

NOTE: SnapCLOUD servers cannot be discovered via local discovery and must be discovered via the Remote Server List.

Remote Discovery

A *remote system* is one that resides on a network segment different than the one on which SnapStorage Manager resides. SSM cannot hear discovery information broadcasts from remote systems until the administrator configures them on the Remote Servers list (see [Configure Remote System Discovery Example on page 9](#)).

SSM regularly queries SnapServers and SnapCLOUD systems on the Remote Servers list for discovery information. When discovered, remote systems return information about themselves and any other GuardianOS and SnapCLOUD systems they've discovered themselves on their local networks or through their own Snap Finder remote server lists. As a result, only one SnapServer or SnapCLOUD system needs to be added to the Remote Servers list per remote network to discover all remote SnapServers and SnapCLOUD systems on that network.

However, for systems not running SnapServers and SnapCLOUD systems, each system must be added individually to the Remote Servers list. Remote systems discovered in this manner display the letter **R** in the Discovery State column of the Details List of the SSM screen, along with the name of the discovering remote system, if applicable.

- You can add a SnapCLOUD server's external IP address (VIP) or global DNS name (if configured) if inbound ports UDP/2599 and TCP/9050 are enabled on the server's network security rules.
- You can add a SnapCLOUD server's internal IP address or internal DNS name (if configured) if its virtual network is accessible via site-to-site or client-to-site VPN.

NOTE: For instructions on displaying the Discover State column in the SSM screen, see [Details List on page 13](#).

Configure Remote System Discovery Example

For example, assume a remote network segment contains six systems:

- REO 4600 running the latest REO 4600 GUI (non-GuardianOS)
- SnapServer DX2 running GuardianOS 7.2
- SnapSAN S2000 running SnapSAN 4.3 GUI (non-GuardianOS)
- SnapServer 410 running GuardianOS 5.2

- SnapServer N2000 running GuardianOS 6.5
- SnapScale Cluster running RAINcloudOS 3.0

To enable SnapStorage Manager to discover all these remote systems, the IP address of just one SnapServer, SnapCLOUD server, or RAINcloudOS node/cluster needs to be entered in the Remote Servers list to discover all other GuardianOS-, SnapCLOUD-, and RAINcloudOS-based systems on the remote network segment. The systems not running GuardianOS, SnapCLOUD, or RAINcloudOS must be manually added. Using a SnapServer, SnapCLOUD server, or RAINcloudOS node/cluster as a remote discovery system makes the administrator's configuration task easier and reduces the network traffic required to refresh system status.

NOTE: SnapCLOUD servers on Microsoft Azure cannot discover other SnapCLOUD servers on its virtual network via Snap Finder, so those must be manually added.

For full interoperability, it is recommended that all SnapServers, SnapCLOUD servers, and SnapScale clusters/nodes on the network run the same version of the system software. If you have systems running different versions of the software on your network, use a system running the **most current** version as the remote discovery server/cluster/node.

Laptop SSM Installation and Remote System Discovery

Unexpected results may occur in instances where SnapStorage Manager is installed on a laptop that is moved from one network segment to another. In this situation, the systems that were previously in SSM's local segment are now in a remote segment, and since no remote system has been designated in that segment, SSM can no longer hear their discovery information broadcasts. Thus, when SSM is started up in the new location, these systems will display as offline.

Ensure All Systems Display Correctly in the SSM Screen

SnapStorage Manager offers three methods to ensure all systems display correctly in the SSM screen. The first option is the preferred method (available only if all systems are GuardianOS servers, RAINcloudOS nodes/clusters, and SnapCLOUD servers) because this method results in less network traffic than the other options; but any combination of methods can be used to suit your environment.

Procedure	Result
Add one GuardianOS (v. 2.6 or higher) server, SnapCLOUD server*, or RAINcloudOS node/cluster from every network segment (including the current local segment) to the Remote Servers List. This option is applicable only if all servers/nodes/clusters on the remote network are GuardianOS servers, SnapCLOUD servers, or RAINcloudOS nodes/clusters.	SSM sends out only a single DRP for each system on the Remote Servers List.
For other systems, manually add each system to the Remote Servers List.	SSM sends out a single DRP for each system on the Remote Servers List.
From SSM, select Edit > Options . Select the Auto-scan servers not on Remote Server list option, and click OK . This option instructs SSM to directly (and regularly) send DRPs to all previously discovered systems that are neither: (1) specified on the Remote Servers list, nor (2) resident on the same network segment as a system specified on the Remote Servers list.	SSM sends out one DRP for each previously discovered system, resulting in increased network traffic.

- * Adding a SnapCLOUD virtual machine to the remote server list will only discover the remote servers the SnapCLOUD server itself is configured for.

About SSM Dialog Box

To access the About information box in SSM, select **Help > About SnapStorage Manager**.



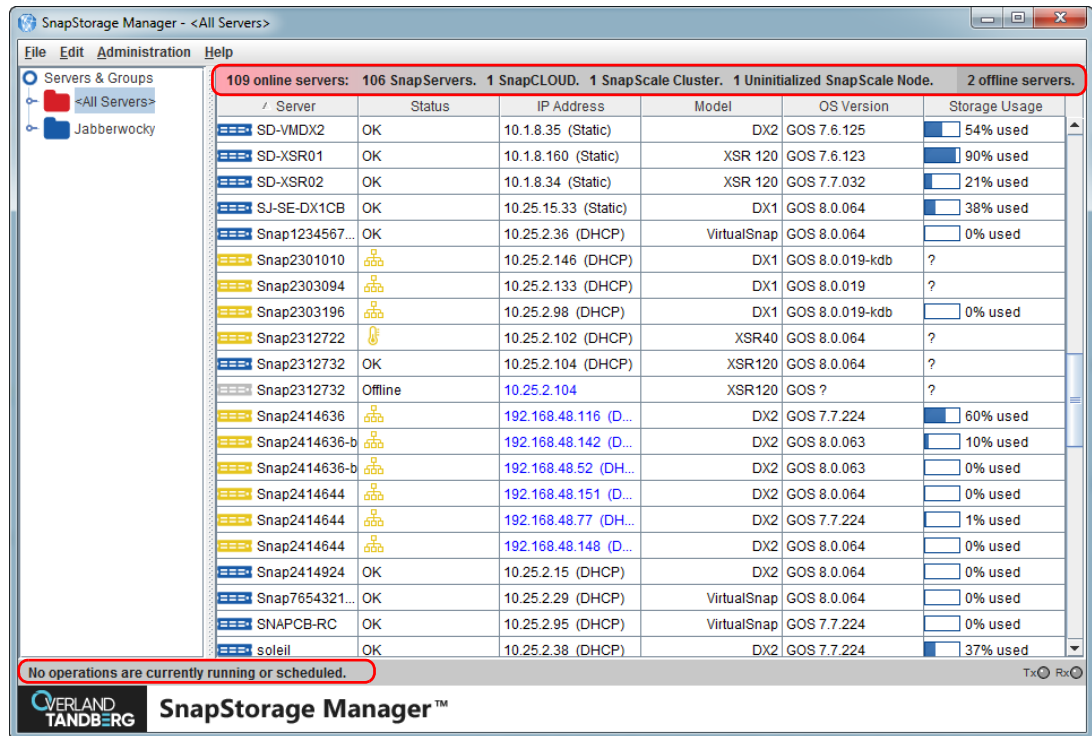
This dialog box provides the following information:

- SSM version number
- Related GuardianOS version number
- Contact information (phone and website)
- System Properties for the computer on which SSM is running

Click **OK** to clear.

Customize the SSM Interface

At startup, the SnapStorage Manager displays all Overland systems discovered on the local subnet as well as any remote supported systems manually configured by the administrator. The default group <All Servers> contains all the discovered systems. Additional groups can be created for easier administration.



The Operation Status Bar at the bottom shows the status of any running or scheduled operations. Operations are defined as administrative tasks (for example, OS update or system restart) that are run concurrently.

Groups

SnapStorage Manager allows administrators to organize systems into groups for ease of administration. Different groupings can be created, saved, and shared with other administrators. Clicking a group name or folder icon displays only the group's members in the Details List. Clicking the toggle to the left of the group folder icon shows all the systems under the name. Clicking it a second time closes the list.

Group Color Coding

The folder color of a group reflects the highest level of alert for any of the systems in the group.

NOTE: Only SnapServers, SnapCLOUD servers, or RAINcloudOS nodes/clusters display the warning and failure color codes. A group with only non-GuardianOS/SnapCLOUD/RAINcloudOS systems will be color-coded in blue.

Create, Populate, and Maintain Groups

Use either the context menu (right-click a group name) or, with a group name selected, use the Edit menu options to make changes. The active options change based on which item in the list is clicked.

In creating groups, you can perform the following operations:

Task	Procedure
To create a new group on the root	Right-click the Servers & Groups top level and select New Group . Enter a unique name in the dialog box that opens and click OK . The new group is added alphabetically to the root of the Groups List tree.
To create a new group inside another group	Right-click a group name and select New Group . Enter a unique name in the dialog box that opens and click OK . The new group is nested inside the original group.
To copy multiple systems from the Details List to a group	Select one or more system names from the Details list, and do one of the following: <ul style="list-style-type: none"> Right-click one of the highlighted rows and select Copy. Select a group, then right-click and select Paste. Click-and-drag one of the selected highlighted rows to the group.
To copy the contents of one group into another group	Right-click a group and select Copy . Then, right-click the target group and select Paste .
To rename a group	Right-click a group and then select Rename Group . Enter a unique name in the dialog box that opens, and click OK .
To delete a group	Right-click a group and then select Delete . In the confirmation dialog box that opens, click Yes .

Save and Distribute Groups

Administrators who manage systems from different machines may want to have the same group structures available from each SSM installation. Groups can be saved to an XML file by highlighting the group and selecting **File > Save Groups As**. By default, this file is saved to the home directory for your system.

For example, on a Windows machine, the location of the XML file in the default home directory would be similar to the following:

```
C:\Documents and Settings\username\ssm_groups.xml
```

To share groups, copy the XML files to an appropriate directory on any other machines used to manage systems. Alternatively, you can select **File > Open Groups** and navigate to the desired file.

Remove Offline Systems

Select **Edit > Remove Offline Servers** to remove offline systems from groups. An **Include all subgroups** check box on the Confirmation dialog allows you to remove offline systems from the subgroups of the selected group also. The subgroup removal option is checked by default and is disabled (grayed) if the selected group has no subgroups.

Details List

The data displayed in the Details List can be customized to accommodate different administrative interests.

Column Definitions

The Details List is divided into several different columns. Use the hidden menu (right-click the column heading area) to add or delete columns. The following table defines the properties shown in these columns:

Column	Description
Server	Lists the names of all discovered systems (servers, appliances, arrays, nodes, and clusters).
Status (icon on left)	<ul style="list-style-type: none"> • OK – All systems are functioning correctly (blue). • Offline – The system is offline (gray). • Alert Icon – Displays any warning (yellow) or fault (red) conditions for the selected SnapServer, SnapCLOUD server, or RAINcloudOS node/cluster. See Status Icons on page 3 for a list and description of the different icons.
IP Address	Displays the IP address and type (DHCP or Static) for the system.
Model	Displays the type of system hardware (such as XSR120 or DX2)
OS Version	Displays the OS type (GOS, REO, SAN, ROS, or SnapCLOUD) and version number.
Storage Usage	Shows a percentage bar and the numerical percentage of the amount of storage space used.
OS*	Displays the operating system name of the system.
Number*	Displays the unique server number of the selected system.
Up-Time (D:H:M)*	Displays how long a system has been up and running, in days, hours, and minutes.
Discovery State*	Displays the date and time the listed system's DRP was received by SSM.
Configured*	Displays whether or not the system has gone through the initial configuration process. Displays yes, no, and partial.
Expansion Systems*	Displays the number and type of expansion units attached to a system.
Snap ECR*	Displays the Snap Encrypted Continuous Replication™ version supported. S: (sources supported) and T: (targets supported).

* These columns not shown in the default display. Must be added manually using the right-click menu.

Customize the Details List

Use the following procedures to customize the information displayed in the Details List:

Task	Description
To sort the Details List according to a column	Click a column header. The Details List sorts according to the contents of the column in ascending order. To sort in descending order, click the column header again.
To resize a column header	Hover the cursor over the right border of the column header you want to resize until the double-headed arrow appears, and then click and drag the border to the desired width.
To normalize the size and contents of all column headers	Right-click any column header and click Reset Columns . The original factory set columns, properties, and order are restored.

Task	Description
To load a different property into a column	Right-click a column and select a different property.
To create a new column	Right-click a column, and select New Column . The clicked column is duplicated. Right-click the new column, and select a different property (see “ Column Definitions ”).
To delete a column	Right-click a column header and select Delete Column .

SnapServer/SnapCLOUD Server Administration

From the SnapStorage Manager menu, select **Administration > Administer Servers**. You are prompted to enter the user name and password.

NOTE: A password must be set on the “admin” user to perform many of the following operations on SnapCLOUD servers.

If servers within a group have different passwords, you will have to remember and enter each password before you can administer the group. For ease of administration, configure servers within a group with the same password.

Tip: Configure the servers within a group with the same password to access them easily.

Three administrative tasks are listed in the left-hand pane:

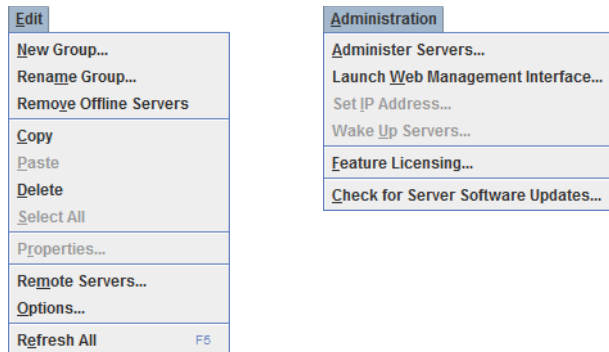
- **OS Update** (need to enter the OS file by browsing)
- **Restart**
- **Shutdown**

Select an option and click **Apply**. The interface provides feedback on the progress.

3

SSM Dialog Boxes Reference

This section describes some of the SnapStorage Manager dialog boxes and their usage associated with the **Edit** and **Administration** menu options:



Edit Menu Dialog Boxes:

While most options have simple dialog boxes, the following **Edit** menu items have additional options in their dialog boxes:

- [\(Server\) Properties](#)
- [Remote Servers](#)
- [Options](#)

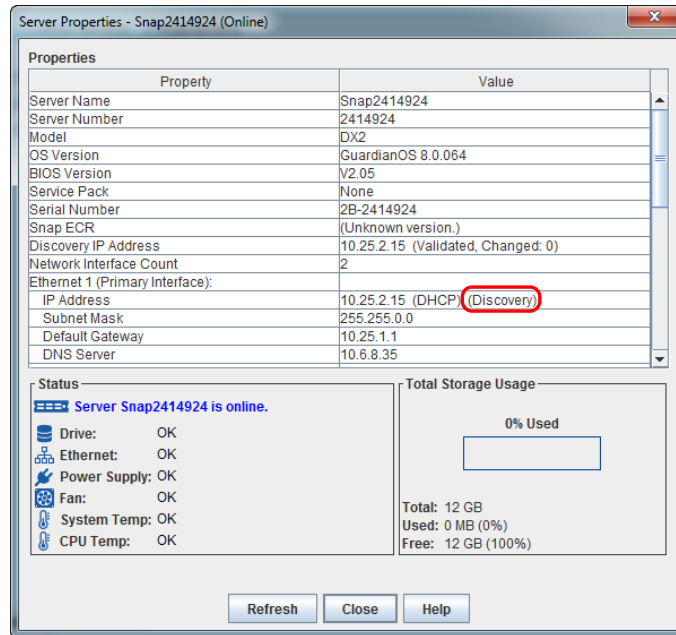
Administration Menu Dialog Boxes:

These special Administration menu and sub-menu options apply to SnapServers and SnapCLOUD servers only:

- [Administering Servers](#)
 - [OS Update](#)
 - [Restart](#)
 - [Shutdown](#)
 - [Apply to Servers Dialog Box](#)
- [Launch Web Management Interface](#)
- [Set IP Address](#) (includes Uninitialized nodes)
- [Wake Up Servers](#)
- [Feature Licensing](#)
- [Check for Server Software Updates](#)

(Server) Properties

The **Server Properties** dialog box (select **Edit > Properties** or right-click the server name) provides a summary of system specifications and status data.



Graphic Indicators (GuardianOS only)

In the Status section of the dialog box, icons on the left of the list of items provide a quick visual status indicator. See [Server Icons on page 3](#) and [Status Icons on page 4](#) for details.

Discovery IP Address

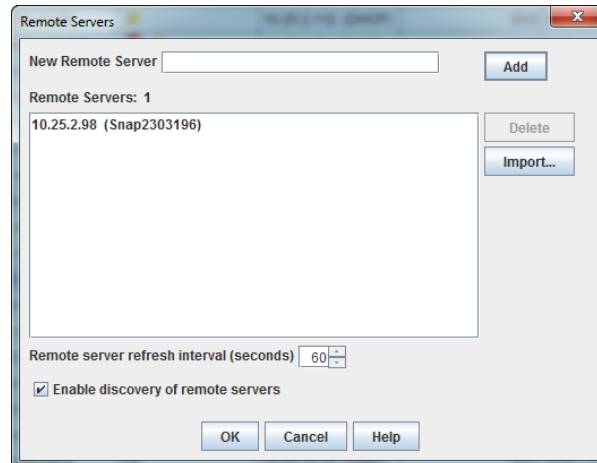
The text **(Discovery)** is placed next to the IP address used to discover the system. See [Discover Systems on the Network on page 7](#).

Total Storage Usage (GuardianOS/SnapCLOUD/RAINcloudOS only)

For SnapServers and SnapCLOUD servers, the percentage refers only to capacity that has been allocated to existing volumes and iSCSI disks; unallocated RAID capacity is not included. For RAINcloudOS clusters, the percentage refers to the storage usage of the entire cluster. See [Communication Indicators on page 5](#).

Remote Servers

Select **Edit > Remote Servers** to open a dialog box used to add systems that reside outside the network segment on which SnapStorage Manager resides. See [Discover Systems on the Network on page 7](#).



The options in this dialog box are covered in detail in the following sections.

Add Remote Systems

Enter the system's IP address, fully-qualified name, or server/cluster name in the **New Remote Server** field and click **Add**.

- If you entered the IP address, it appears in the **Remote Servers** list, with the system name in parentheses (if resolved).
- If you entered the server/cluster name, it appears in the **Remote Servers** list, with the IP address in parentheses (if resolved).
- If SSM cannot find the remote system you entered, **unresolved** appears in the **Remote Servers** list after the name or IP address.
- You can add a SnapCLOUD server's external IP address (VIP) or global DNS name (if configured) if inbound ports UDP/2599 and TCP/9050 are enabled on the VM's network security rules.
- You can add a SnapCLOUD server's internal IP address or internal DNS name (if configured) if its virtual network is accessible via site-to-site or client-to-site VPN.

The current number of remote servers/clusters is listed above the **Remote Servers** list. The maximum allowed remote servers/clusters is 5000.

Delete a Remote System

NOTE: The servers will be deleted immediately without requiring a confirmation.

In the **Remote Servers** list, select one or more remote systems and click **Delete**.

Adjust the Remote System Refresh Interval

Adjust the refresh interval to a setting between 30 and 90 seconds.

Toggle Discovery of Remote Systems

Click the **Enable discovery of remote servers** check box to turn the discovery of remote servers ON/OFF.

Import a Remote Server List

Remote server/cluster names and/or IP addresses can be imported from a text file. Within the text file, each system and IP address can be designated either by entering one system per line, or by entering multiple names separated by a space, a comma, or a semi-colon. Blank lines and lines beginning with the number sign (#) are ignored.

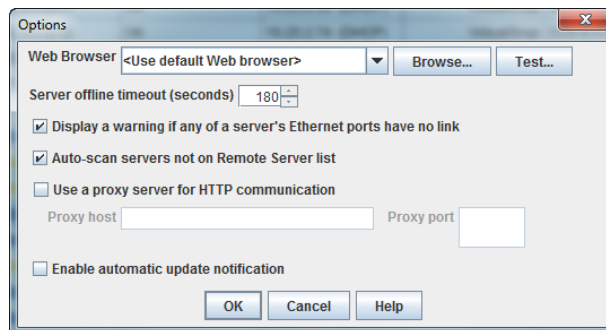
NOTE: If the remote systems are being imported and would make the **Remote Servers** list greater than 5000 systems, SSM displays a prompt to truncate the list being imported.

To import a list, click the **Import** button, navigate to the appropriate text file, and click **OK**.

The remote servers list will be added to the existing list, ignoring duplicate systems.

Options

Clicking **Edit > Options** opens a dialog box that allows for the configuration of SnapStorage Manager general options.



The configurable SSM options let you:

- Specify and test the Web browser that SSM uses.
- Set the period (in seconds) following the receipt of the last discovery packet after which a system will then be considered offline.
- Specify whether SSM displays a warning if any Ethernet port does not have a link (GuardianOS and RAINcloudOS only).
- Instruct SSM to directly scan all systems including those not on the **Remote Server** list.
- Configure an HTTP proxy server to access the Internet by entering a proxy host and proxy port.
- Enable/disable automatic notification of OS updates (SnapServers and SnapCLOUD servers only).

Specify a Web Browser

You can specify the Web browser you would like SnapStorage Manager to use to display the Web Management Interface and the SSM online help system.

- Click **Browse** to navigate to and select the executable for your chosen browser.
- Click **Test** to open the Overland Storage Customer Support page in your chosen browser.

Adjust the System Offline Timeout Setting

SSM constantly updates the Device List with fresh data it receives from systems that reside on its local network segment and are specified on the Remote Servers list. SSM considers a system offline if no communication occurs for the specified timeout period. (The default timeout period is 180 seconds.) If SSM receives no communication from a system during the timeout period, it displays that system as offline in the Details List of the main SSM screen. Adjust this interval to a setting between 120 and 300 seconds as appropriate for your network conditions.

Display No-Link Status Warnings for Ethernet Ports

NOTE: Applies to GuardianOS and RAINcloudOS only.

SSM is set by default to display a warning status if one of a system's Ethernet ports has no link. With this feature activated, you can quickly see all systems with no-link status Ethernet ports (such as, unplugged Ethernet cables). You may wish to disable the no-link status feature if you have systems with only one connected Ethernet port. To disable the feature, uncheck the **Display warning if any of a server's Ethernet ports has no link** check box, and click **OK**.

Activate Auto-scanning of All Remote Systems

When SnapStorage Manager is installed on a laptop that is moved from one network segment to another, some remote systems may appear to be offline when they are in fact online. The **Auto-scan servers not on Remote Servers list** option ensures that discovery works properly by sending discovery request packets to each system discovered in a previous session; this solution does, however, increase network traffic. To activate auto-scanning, select the check box and click **OK**.

Use an HTTP Proxy Server

In environments that use an HTTP proxy server to access the Internet, SSM must be configured to use the proxy for update notification or accessing the web online help. Check **Use a proxy server for HTTP communication**, enter the name or IP address of the proxy server in the **Proxy host** field, and enter the port used by the proxy server in the **Proxy port** field.

Enable Automatic Update Notification

NOTE: This feature is only available for SnapServer and SnapCLOUD servers.

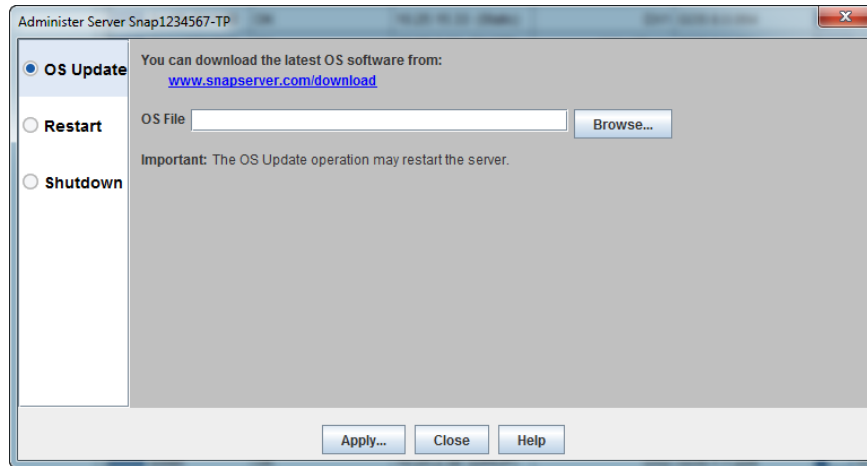
SSM is configured by default to check daily for available updates to SnapServer and SnapCLOUD servers. When an update is found for discovered servers, an alert displays in a banner at the top of the SSM main window. The **Tell me more** link in the banner opens the **Software Updates** dialog, listing systems for which an update is available, the version of OS each system is currently running, and the version of the update available.

NOTE: You can choose to hide the banner by clicking the **Remind me later** or **Hide this message** link on the banner. When **Remind me later** is clicked, the system displays the banner after the next check for updates; when **Hide this message** is clicked, the system hides the banner for the specific update until a later version is released.

To disable this feature, uncheck the **Enable Automatic Update Notification** check box and click **OK**.

Administering Servers

This dialog box is the starting point for updating the OS, restarting, and shutting down GuardianOS and SnapCLOUD servers.



To launch this feature:

1. Select **one or more servers** from the Details List.
2. Select **Administration > Administer Servers**.
3. At the Login dialog box, enter the **User Name** and **Password** for each server.
If more than one server uses the same User Name and Password, you only have to enter the information once. All similar configured servers will automatically be logged into.
4. Choose the **option** you want to use:
 - [OS Update](#)
 - [Restart](#)
 - [Shutdown](#)

OS Update

1. In the left column, verify that the default **OS Update** option is selected.
2. Browse to where the **latest OS update file** has been saved.
If you haven't downloaded the OS update yet, use the blue web link to access the downloadable file.
3. Select the update file and click **Apply**.
4. At the Apply to Server dialog box, choose the options desired.
See [Apply to Servers Dialog Box](#) for details about the options.

The selected servers are updated.

Restart

1. In the left column, click **Restart** and then click **Apply**.
2. At the Apply to Server dialog box, choose the options desired.
See [Apply to Servers Dialog Box](#) for details about the options.

The selected servers are restarted.

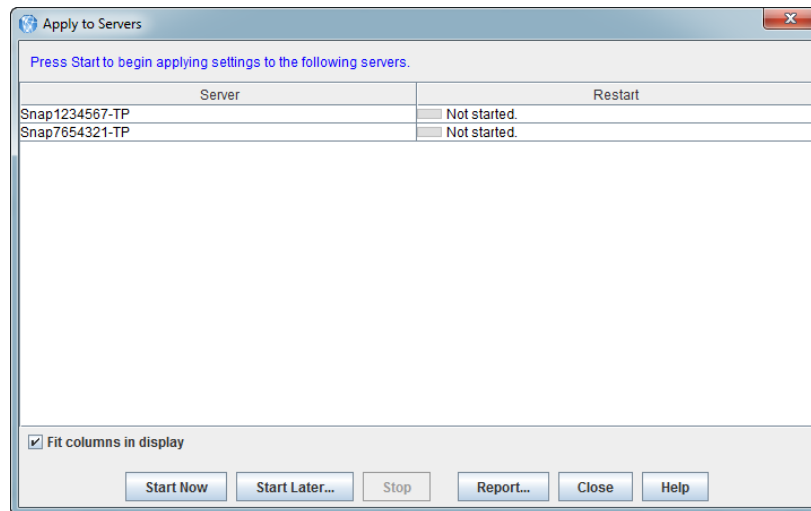
Shutdown

1. In the left column, click **Shutdown** and then click **Apply**.
2. At the Apply to Server dialog box, choose the options desired.
See [Apply to Servers Dialog Box](#) for details about the options.

The selected servers are shut down.

Apply to Servers Dialog Box

When administering GuardianOS or SnapCLOUD server settings (see [Administering Servers](#) on [page 21](#)), clicking **Apply** opens this dialog box. It lists operations to be performed on a group of GuardianOS and SnapCLOUD servers.

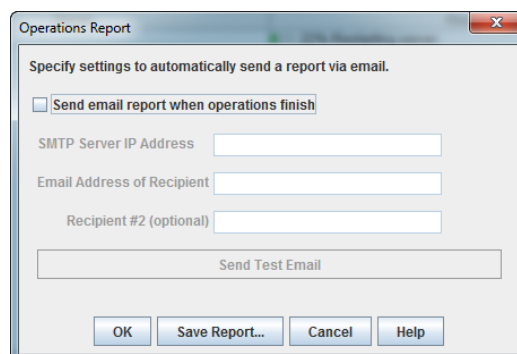


- **Start Now** – Applies the chosen option immediately. The interface informs you of the progress (via a progress bar) and result of the operations.
- **Start Later** – An Apply Schedule dialog box opens to select the date and time to apply this option. Click **OK** to schedule the event.

NOTE: The status bar in the main screen displays the status of the scheduled operations. While operations are scheduled to run, no other multiserver administration is possible.

To cancel the schedule before it occurs, repeat the steps and click **Stop** in the Apply to Servers dialog box. Click **Yes** to confirm the cancellation,

- **Report** – This opens the Operations Report dialog box.



Do one of the following:

- To set up the email report delivery for this and all future operations, complete the fields provided and click **OK**.
- To save an operations report for the completed operation, click **Save Report**. The report will be saved as a CSV file to a location of your choice.

Improve the Readability of the Display

When working with a large number of settings or servers, use the following methods to improve the readability of the display.

Method	Description
Fit Columns in Display	When selected (default), this option resizes column widths to fit in the current size of the window. All columns are visible, but text within columns may be clipped. When deselected, column widths expand to fit the width of its contents, but some columns may not be visible.
Resizing columns	To resize a column, hover the cursor over the border between column headers, and then click and drag to the desired width

Launch Web Management Interface

When only one system is selected in the Details List, this option can be used to launch the Web Management Interface for that server.

Set IP Address

NOTE: [Set IP Address](#) is only available for SnapServers and Uninitialized nodes that are configured for DHCP and have not received an IP address from a DHCP server.

By default, SnapServers and Uninitialized nodes are preconfigured to use DHCP to acquire an IP address at startup. If a Uninitialized node cannot find a DHCP server on the network, it will default to a “ZeroConf” IP address (169.254.*.*) and you may not be able to see the server on your network. In this case, **Set IP Address** can be used to assign a fixed (static) IP address to the server.

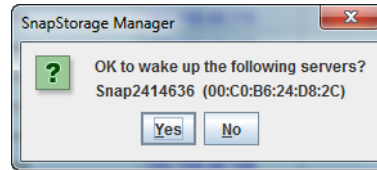
NOTE: Servers running GuardianOS 6.0 and earlier versions will show 10.10.10.10 as the IP address in this case rather than a ZeroConf address.

Set a Server’s or Uninitialized Node’s IP Address

1. In the SSM main screen, select a server/uninitialized **node**.
2. Right-click the server/node, and select **Set IP Address**.
3. Enter the **IP address** and **subnet mask** in the TCP/IP Addressing fields.
Optionally, you may also specify the default gateway, domain name server, domain name, and WINS server as appropriate.

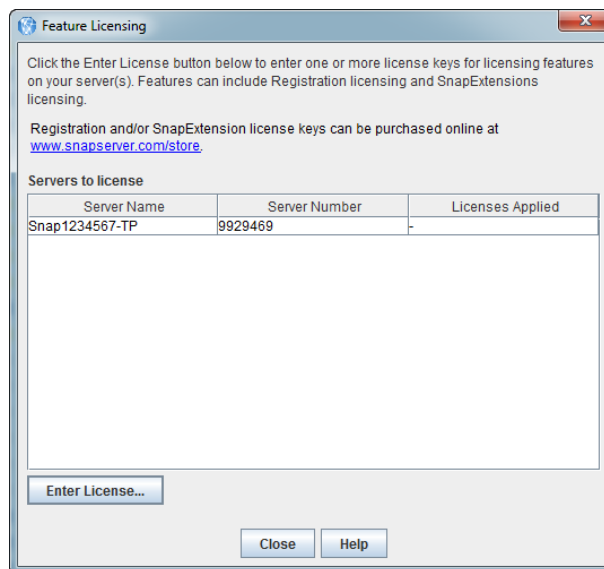
Wake Up Servers

Use this feature to wake up one or more servers that are sleeping.



Feature Licensing

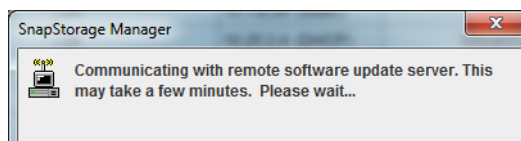
Select **Administration > Feature Licensing** to apply SnapExtension license keys to one or more SnapServer and SnapCLOUD servers. There is no limit to the number of licenses that can be entered using this dialog box. Click **Enter License**, then enter one or more license keys per line (or separated by spaces), and click **OK**. This feature is only available with GuardianOS v 4.0 or later and SnapCLOUD.



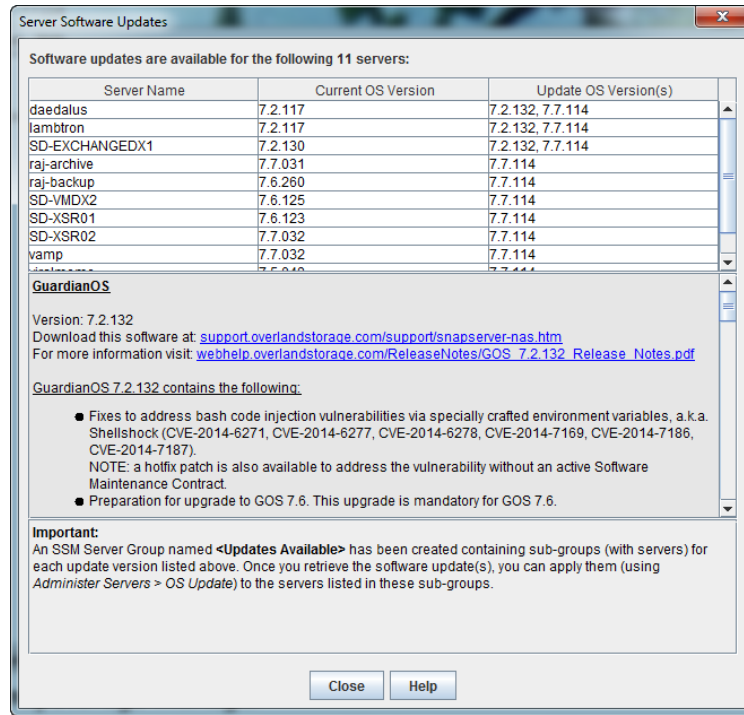
The Feature License dialog box does not display any pre-existing SnapExtension licenses. Only licenses that have been applied while the current dialog box is open will be displayed.

Check for Server Software Updates

When you select **Administration > Check for Server Software Updates**, the SnapStorage Manager connects with a remote server to determine if any of SnapServers or SnapCLOUD servers it is monitoring have new software updates available.



The resulting dialog box lists all of the systems that SSM has discovered that have updates available, and provides the following information about the systems:



Property	Description
Server Name	Name of the system that has an update available.
Current OS version	Version of the OS currently running on the system.
Update OS versions	Most recent version of the OS to which the system can be updated.

Apply Software Updates

1. To download the available OS update, click the **Download this software at:** web link.
2. Apply the software **update**.

For SnapServer and SnapCLOUD servers, SSM creates a special SSM Server Group in the left panel called **<Updates Available>**. It contains all the systems for which each update is applicable. Multiple OS updates may be possible for a given server. Apply the software update to the systems in this folder following the normal update procedure.

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