



CHAPTER 4

Installing and Managing the Cisco SRE-V Software

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This chapter provides instructions for installing and managing the Cisco SRE-V software.



Note

- If you purchased Cisco SRE-V Option 1, a blank Cisco SRE Service Module, you must download and install the Cisco SRE-V software. For Cisco SRE-V options, see [Figure 1-3](#).
 - Microsoft Windows software is not available for download from Cisco.com. You must install your own version of the Microsoft Windows Server 2003 or Microsoft Windows Server 2008 software.
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This chapter contains the following sections:

- [Understanding RAID Options, page 4-1](#)
- [Downloading the Cisco SRE-V Software, page 4-4](#)
- [Installing the Cisco SRE-V Software—Clean Install, page 4-5](#)
- [Entering and Exiting the VMware vSphere Hypervisor DCUI, page 4-7](#)
- [Uninstalling the Cisco SRE-V Software, page 4-8](#)
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Understanding RAID Options

When installing the Cisco SRE-V application on a Cisco SRE 900 Service Module, you can choose to store data files on local Redundant Array of Inexpensive Disks (RAID). The available RAID mode options are: RAID 1, RAID 0, and non-RAID.

**Note**

RAID is *not supported* on the Cisco SRE 700 Service Module. It is supported on the Cisco SRE 900 Service Module only.

RAID 1

RAID 1 creates a mirrored set of disk drives, where the data in both the disk drives is identical. See [Figure 4-1](#).

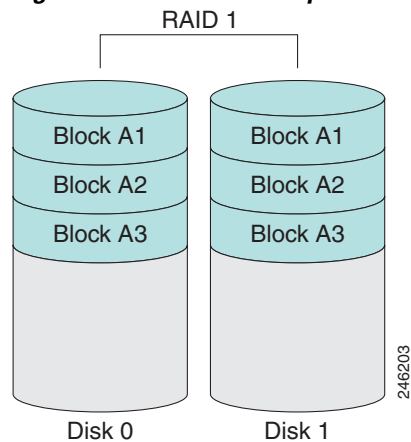
RAID 1 provides high availability. If one disk drive fails, the other disk drive takes over, preserving the datastore.

RAID 1 supports fault tolerance and hot-swapping. When one disk drive fails, you can remove the faulty disk drive and replace it with a new disk drive. See the [“Hot-Swapping the Faulty RAID 1 Disk Drive”](#) section on page 7-3.

However, compared to RAID 0, there is less storage space because half of the total potential disk storage space (465 GB) is available and there is a small impact on performance.

[Figure 4-1](#) shows that in RAID 1, the data in Disk 0 and Disk 1 is identical (mirrored).

Figure 4-1 RAID 1 Option—Data in Disk 0 and Disk 1 Is Identical



RAID 0

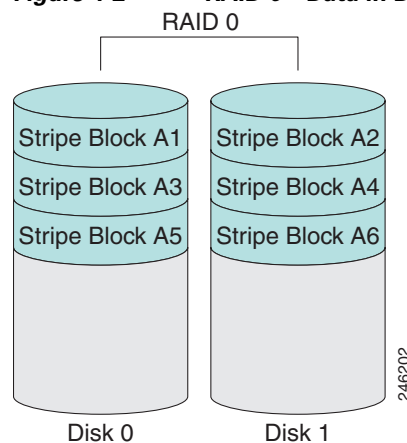
With RAID 0, the data is stored evenly in stripe blocks across two disk drives without redundancy (mirroring). The data in both the disk drives is different. See [Figure 4-2](#).

Compared to RAID 1, RAID 0 provides additional storage because both the disk drives (927 GB) are used to store data. The performance is improved by two times because the read and write operation occurs in parallel within the two disk drives.

However, there is no fault tolerance, error checking, or hot-swapping. If one disk drive fails, the data in the entire array is destroyed. Because there is no error checking or hot-swapping, the array is susceptible to unrecoverable errors.

[Figure 4-2](#) shows that in RAID 0, the data in Disk 0 and Disk 1 is different. The data is evenly divided across Disk 0 and Disk 1 without redundancy.

Figure 4-2 RAID 0—Data in Disk 0 and Disk 1 Is Different



Non-RAID

When the disk drives of a computer are not configured as RAID, the computer is in non-RAID mode. Non-RAID mode is also referred to as Just a Bunch of Disks or Just a Bunch of Drives (JBOD). Non-RAID mode does not support fault tolerance, error checking, hot-swapping, or redundancy.

Table 4-1 provides a summary of the RAID options.

Table 4-1 Summary of RAID Options

Options	Description	Advantages	Disadvantages
RAID 1	Mirrored set of disk drives, where the data in both the disks is identical.	<ul style="list-style-type: none"> • High availability • Fault tolerance • Hot-swapping 	<ul style="list-style-type: none"> • Storage—465 GB • Small performance impact
RAID 0	Data is stored evenly in stripe blocks across two or more disks without redundancy (mirroring). The data in both the disk drives is different.	<ul style="list-style-type: none"> • Storage—927 GB • Double performance 	<ul style="list-style-type: none"> • No error checking • No fault tolerance • No hot-swapping • No redundancy
Non-RAID	Disk drives of a computer are not configured as RAID. Also referred to as JBOD.	<ul style="list-style-type: none"> • Portable 	<ul style="list-style-type: none"> • No error checking • No fault tolerance • No hot-swapping • No redundancy

Related Topics

- [Entering the RAID Management Command Environment, page 7-1](#)
- [Hot-Swapping the Faulty RAID 1 Disk Drive, page 7-3](#)
- [Downloading the Cisco SRE-V Software, page 4-4](#)

Downloading the Cisco SRE-V Software

Before you begin downloading the Cisco SRE-V software, do the following:

- Make sure that you have the IP address or name of the FTP server in which you want to store the Cisco SRE-V software package file.
- Verify that the FTP server is accessible.

To download the Cisco SRE-V software, complete the following steps:

Step 1 Go to <http://www.cisco.com/go/ucse>, click **Download Software**, and then download the Cisco SRE-V files:

- For Cisco SRE 700 Service Module, download the following .zip file:
sre-v-k9.SPA.smv.1.5.1.zip
- For Cisco SRE 900 Service Module, download the following .zip file:
sre-v-k9-r.SPA.smv.1.5.1.zip

where r in the file name stands for RAID. RAID is supported on the Cisco SRE 900 Service Module only.

**Note**

If you use a file extractor tool designed for Windows, such as WinZip, you must disable CR/LF conversion of tar files. For example, in WinZip 9.0, choose **Configuration > Miscellaneous**, and then uncheck **TAR file smart CR/LF conversion**.

- Step 2** Extract the zip files to an FTP server. All files to be installed must reside in the same directory.
- Step 3** Install the Cisco SRE-V software. See the “[Installing the Cisco SRE-V Software—Clean Install](#)” section on page 4-5 or the “[Upgrading the Cisco SRE-V Software](#)” section on page 4-10 as appropriate.

Related Topics

- [Understanding RAID Options](#), page 4-1
- [Installing the Cisco SRE-V Software—Clean Install](#), page 4-5
- [Upgrading the Cisco SRE-V Software](#), page 4-10

Installing the Cisco SRE-V Software—Clean Install

**Caution**

Do not use this procedure if you have a previous version of Cisco SRE-V software installed in your system. If you do, you will lose all data. To upgrade to the next version, use the upgrade procedure. See the “[Upgrading the Cisco SRE-V Software](#)” section on page 4-10.

**Note**

- Cisco SRE-V software installation takes approximately 10 minutes. Depending on your network speed, the installation time can vary.
- To view the status of the Cisco SRE-V installation, from the host-router CLI, enter the **service-module sm slot/0 status** command, as shown in the following example:

```
Router# service-module sm 1/0 status
```

Before you begin installing the Cisco SRE-V software, see the “[Understanding RAID Options](#)” section on page 4-1.

To install the Cisco SRE-V software on the Cisco SRE Service Module, complete the following steps.

SUMMARY STEPS

1. **enable**
2. **service-module sm slot/0 install url url**
or
service-module sm slot/0 install url url argument disk-cfg-mode={raid1 | raid0 | nonraid}
3. [**service-module sm slot/0 status**]
4. **exit**

DETAILED STEPS

	Command or Action	Purpose
Step 1	<pre>enable <password></pre> <p>Example:</p> <pre>Router> enable Router> <password> Router#</pre>	Enables privileged EXEC mode. Enter your password if prompted.
Step 2	<pre>service-module sm slot/0 install url url</pre> <p>or</p> <pre>service-module sm slot/0 install url url argument disk-cfg-mode={raid1 raid0 nonraid}</pre> <p>Example of Cisco SRE 900 Service Module:</p> <pre>Router# service-module sm 2/0 install url ftp://server.com/dir/sre-v-k9-r.SPA.smv.1.5.1.pkg Loading galactica-whql#\$.1/solaria/1.5.1/raid/sre-v-k9-r. SPA.smv.1.5.1.pkg Delete the installed Cisco SRE-V Software and proceed with new installation? [no]: yes Loading solaria/1.5.1/raid/sre-v-k9-r.SPA.smv.1.5.1.pkg.i ninstall.sre ! [OK - 5994/4096 bytes]</pre> <pre>Service module installation ios_version 15.1(3.22)M0.6, ios_image c2951-universalk9-mz pkg_name sre-v-k9-r.spa.smv.1.5.1.pkg key_file sre-v-k9-r.spa.smv.1.5.1.key helper_file sre-v-installer.spa.smv.1.5.1 pid SM-SRE-900-K9</pre> <pre>Check target platform capabilities cpu 1865 Please select disk configuration (-1 = nonraid, 0 = raid0, 1 = raid1) [-1]:</pre> <p>or</p> <pre>Router# service-module sm 2/0 install url ftp://server.com/dir/sre-v-k9-r.SPA.smv.1.5.1.pkg argument disk-cfg-mode=raid1</pre> <pre>Router# service-module sm 2/0 install url ftp://server.com/dir/sre-v-k9-r.SPA.smv.1.5.1.pkg argument disk-cfg-mode=raid0</pre> <pre>Router# service-module sm 2/0 install url ftp://server.com/dir/sre-v-k9-r.SPA.smv.1.5.1.pkg argument disk-cfg-mode=nonraid</pre>	<p>Starts the installation of the Cisco SRE-V application. After you enter the install command, you are prompted to choose a disk configuration (RAID mode). The disk configuration options are: 1, 0, or -1.</p> <ul style="list-style-type: none"> • 1 is RAID 1 mode. • 0 is RAID 0 mode. • -1 is non-RAID mode <p>For information about RAID options, see the “Understanding RAID Options” section on page 4-1.</p> <p>or</p> <p>Starts the installation of the Cisco SRE-V application in the specified RAID mode. The RAID mode options are: RAID 1, RAID 0, or non-RAID. For information about RAID options, see the “Understanding RAID Options” section on page 4-1.</p> <p>Note RAID is <i>not supported</i> on the Cisco SRE 700 Service Module. RAID is supported on the Cisco SRE 900 Service Module only.</p> <ul style="list-style-type: none"> • <i>slot/port</i>—Position of the target module in the router chassis. For Cisco SRE Service Module, always use 0 for the port number. Applications are installed into the service module through this port. The slash (/) is required between the slot and port number. • <i>url url</i>—Specifies the URL, as defined in RFC 2396 of the server and directory on which the application packages and Tcl script are located. The URL should point to the .pkg file on the FTP server. <p>In the url, you can choose to use the username and password of the FTP server. For example:</p> <pre>ftp://username:password@server.com/dir/ sre-v-k9-r.SPA.smv.1.5.1.pkg.</pre>

	Command or Action	Purpose
Step 2 (continued)	<p>Example of Cisco SRE 900 Service Module With FTP Credentials in the URL:</p> <pre>Router# service-module sm 2/0 install url ftp://username:password@server.com/dir/sre-v-k9-r .SPA.smv.1.5.1.pkg</pre>	<ul style="list-style-type: none"> • raid1—Installs Cisco SRE-V in RAID 1 mode. For more information, see the “RAID 1” section on page 4-2. • raid0—Installs Cisco SRE-V in RAID 0 mode. For more information, see the “RAID 0” section on page 4-3. • nonraid—Installs Cisco SRE-V in non-RAID mode. For more information, see the “Non-RAID” section on page 4-3.
Step 3	<p>[service-module sm slot/0 status]</p> <p>Example:</p> <pre>Router# service-module sm 2/0 status</pre>	(Optional) Monitors progress of the installation.
Step 4	<p>exit</p> <p>Example:</p> <pre>Router# exit</pre>	Exits privileged EXEC mode.

After you successfully install Cisco SRE-V 1.5, and you session into the service module, the console interface is displayed. The console interface allows you to access the VMware vSphere Hypervisor™ DCUI to perform Cisco SRE-V configuration. See “Entering and Exiting the VMware vSphere Hypervisor DCUI” section on page 4-7.

If you are a first-time user of the VMware vSphere Hypervisor™, use **root** for the username; and for the password, leave the field empty. After you login, we recommend that you change the password.

Related Topics

- [Entering and Exiting the VMware vSphere Hypervisor DCUI, page 4-7](#)
- [Understanding RAID Options, page 4-1](#)
- [Downloading the Cisco SRE-V Software, page 4-4](#)
- [Uninstalling the Cisco SRE-V Software, page 4-8](#)

Entering and Exiting the VMware vSphere Hypervisor DCUI

To enter or exit from the VMware vSphere Hypervisor™ DCUI, do the following:

- Step 1** Use the **service-module sm slot/0 session** command to session into the Cisco SRE Service Module, as shown in the following example:
- ```
Router# service-module sm 2/0 session
SRE-Module#
```
- The DCUI Welcome page appears.
- Step 2** If you are a first-time user of the VMware vSphere Hypervisor™, use **root** for the username; and for the password, leave the field empty. After you login, we recommend that you change the password.
- Step 3** To exit from the DCUI, press **Ctrl + Shift + 6 + x**. The router prompt appears.

**Step 4** From the router prompt, enter the **disconnect** command to disconnect from the DCUI, as shown in the following example:

```
Router# disconnect
```

**Step 5** At the confirmation prompt, press **Enter** to confirm the disconnect operation.

## Uninstalling the Cisco SRE-V Software

To uninstall the Cisco SRE-V software from the Cisco SRE Service Module, complete the following steps.



### Caution

This procedure erases the disk on the Cisco SRE Service Module and removes the application keys.

### SUMMARY STEPS

1. **enable**
2. **service-module sm slot/0 uninstall**
3. **exit**

### DETAILED STEPS

|        | Command or Action                                                                                                               | Purpose                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Step 1 | <pre>enable &lt;password&gt;</pre> <p><b>Example:</b><br/> <pre>Router&gt; enable Router&gt; &lt;password&gt; Router#</pre></p> | <p>Enables privileged EXEC mode.</p> <p>Enter your password if prompted.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Step 2 | <pre>service-module sm slot/0 uninstall</pre> <p><b>Example:</b><br/> <pre>Router# service-module sm 2/0 uninstall</pre></p>    | <p>Uninstalls the SRE-supported application from the specified Cisco SRE Service Module.</p> <p>This command completely erases the disk on the Cisco SRE Service Module and removes the application keys. It does not remove the application licenses.</p> <ul style="list-style-type: none"> <li>• <i>slot/port</i>—Position of the target module in the router chassis. For Cisco SRE Service Module, always use 0 for the port number. Applications are installed into the service module through this port. The slash (/) is required between the slot and port number.</li> </ul> <p><b>Note</b> Uninstallation is not complete until the “uninstall complete” message is displayed on the router console. To verify the status of the Cisco SRE-V uninstallation, from the host-router CLI, enter the <b>service-module sm slot/0 status</b> command.</p> |

|        | Command or Action                            | Purpose                          |
|--------|----------------------------------------------|----------------------------------|
| Step 3 | <code>exit</code>                            | Returns to privileged EXEC mode. |
|        | <b>Example:</b><br>Router# <code>exit</code> |                                  |

**Related Topic**

- [Downloading the Cisco SRE-V Software, page 4-4](#)

## Verifying Software Installation or Uninstallation

To view the status of the Cisco SRE-V installation or uninstallation, from the host-router CLI, enter the **service-module sm slot/0 status** command, as shown in the following example:

```
Router# service-module sm 1/0 status
Service Module is Cisco SM1/0
Service Module supports session via TTY line 67
Service Module is in Steady state
Service Module heartbeat-reset is enabled
Getting status from the Service Module, please wait..
Cisco SRE-V Software 1.5.1.0
VMware ESXi 4.1.0 build-348481 running on SRE

Module resource information:
 CPU Frequency: 1860 MHz
 Memory Size: 4067 MB
 Disk 0 Size: 500108 MB
 Disk 1 Size: 500108 MB
 Disk 2 Size: 1955 MB

No install/uninstall in progress
```

**Related Topics**

- [Installing the Cisco SRE-V Software—Clean Install, page 4-5](#)
- [Uninstalling the Cisco SRE-V Software, page 4-8](#)

# Upgrading the Cisco SRE-V Software

To upgrade the Cisco SRE-V software, complete the following steps:

- 
- Step 1** Download the appropriate version of the Cisco SRE-V upgrade software. See the “[Downloading the Cisco SRE-V Software](#)” section on page 4-4.
- Step 2** Use the **service-module sm slot/0 install url url argument keep-ds** command to install the Cisco SRE-V software, as shown in the following example:

```
Router# service-module sm 2/0 install url
ftp://server.com/dir/sre-v-k9-r.SPA.smv.1.5.1.pkg argument keep-ds
```

where *url* is the server and directory on which the application packages and Tcl script are located. The URL should point to the .pkg file on the FTP server.

In the url, you can choose to use the username and password of the FTP server. For example:

```
Router# service-module sm 2/0 install url
ftp://username:password@server.com/dir/sre-v-k9-r.SPA.smv.1.5.1.pkg argument keep-ds
```



---

**Note** After the upgrade, the content in the disk is retained but you must reconfigure the VMware vSphere Hypervisor™, and then add the virtual machines to the inventory.

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## Related Topics

- [Cannot View Datastores, page 7-8](#)

# Downgrading the Cisco SRE-V Software from Release 1.5 to 1.1

Before you begin the downgrade process, do the following:

- Export the virtual machines to a remote location.

To downgrade from Cisco SRE-V 1.5 to Cisco SRE-V 1.1, complete the following steps:

- 
- Step 1** Download the Cisco SRE-V 1.1 software. See the “[Downloading the Cisco SRE-V Software](#)” section on page 4-4.
- Step 2** Use the **service-module sm slot/0 install url url** command to install the Cisco SRE-V 1.1 software, as shown in the following example:

```
Router# service-module sm slot/0 install url
ftp://server.com/dir/sre-v-k9.smv.1.1.1.pkg
```

where *url* is the server and directory on which the application packages and Tcl script are located. The URL should point to the .pkg file on the FTP server. In the url, you can choose to use the username and password of the FTP server. For example:

```
Router# service-module sm slot/0 install url
ftp://username:password@server.com/dir/sre-v-k9.smv.1.1.1.pkg
```

- Step 3** Choose the RAID mode that you want enabled. During the installation process, you are prompted to choose a disk configuration (RAID mode). The disk configuration options are: 1, 0, or -1.
- 1 is RAID 1 mode.
  - 0 is RAID 0 mode.
  - -1 is non-RAID mode.
- The service module reboots and the Cisco SRE-V 1.1 software is installed.
- Step 4** Reconfigure the VMware vSphere Hypervisor™.
- Step 5** Import the virtual machines that you had exported.
- 

## Installing Other Cisco Applications on the Cisco SRE Service Module

Before you begin, do the following:

- Export the virtual machines to a remote location.

To install other Cisco applications on the Cisco SRE Service Module, complete the following steps:

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- Step 1** Download the application that you want to install on the Cisco SRE Service Module.
- Step 2** Download the hardware utility. The hardware utility is used to change the SATA mode from AHCI to IDE.
- Step 3** Use the **service-module sm slot/0 install url url/sm-hw-uti1.1.1.x argument sata-mode=ide** command to change the SATA mode from AHCI to IDE:

```
Router# service-module sm slot/0 install url url/sm-hw-uti1.1.1.x argument
sata-mode=ide
```

- Step 4** Use the **service-module sm slot/0 install url application\_url** command to install the software, as shown in the following example:

```
Router# service-module sm slot/0 install url application_url.pkg
```

where *url* is the server and directory on which the application packages and Tcl script are located. The URL should point to the .pkg file on the FTP server.

The service module reboots and the application is installed.

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# Installing the VMware vSphere Hypervisor Patch or Update Release

VMware vSphere Hypervisor™ patches and update releases are available periodically on an as-needed basis from Cisco.com.

To install the VMware vSphere Hypervisor™ patch or update release, complete the following steps:

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**Step 1** Download the patch or update release (as appropriate) from Cisco.com.



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**Note** Do not download the patch or update release from VMware.

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**Step 2** Use the update utility provided by VMware to install the patch or update release.

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