

Software Content Repository Tool 3.0 Guide

Software Content Repository Tool 3.0

vCenter Configuration Manager 5.3

vCenter Configuration Manager 5.4 and 5.4.1

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About This Book

The *VMware vCenter Configuration Manager Software Content Repository Tool Guide* provides information on the following topics.

- Prepare the host machine for components and tools.
- Install and configure components and tools.
- Use the tool to download patch content.
- Troubleshoot errors that might occur.

Intended Audience

This document contains information intended for system administrators who must patch machines in their network.

To use the information in this book effectively, you must have a basic understanding of how to configure network resources. You also must fully understand your network's topology and resource naming conventions.

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Introduction to the Software Content Repository Tool

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The Software Content Repository (SCR) Tool is a standalone Java client software application that builds a repository of UNIX and Linux patches and automatically downloads operating system (OS) vendor patch content to the repository.

The SCR Tool downloads patch content from vendor Web sites, which you use to patch UNIX and Linux machines. These files include patch signature files (.pls), and OS vendor patch content files (.rpm, .gz, .tar, .zip) used in the patching background processes. Deploy package files (.plp) are included and used for patch deployment on Mac OS X. The .plp files contain the vendor patch, which is extracted through configuration of the replication script.

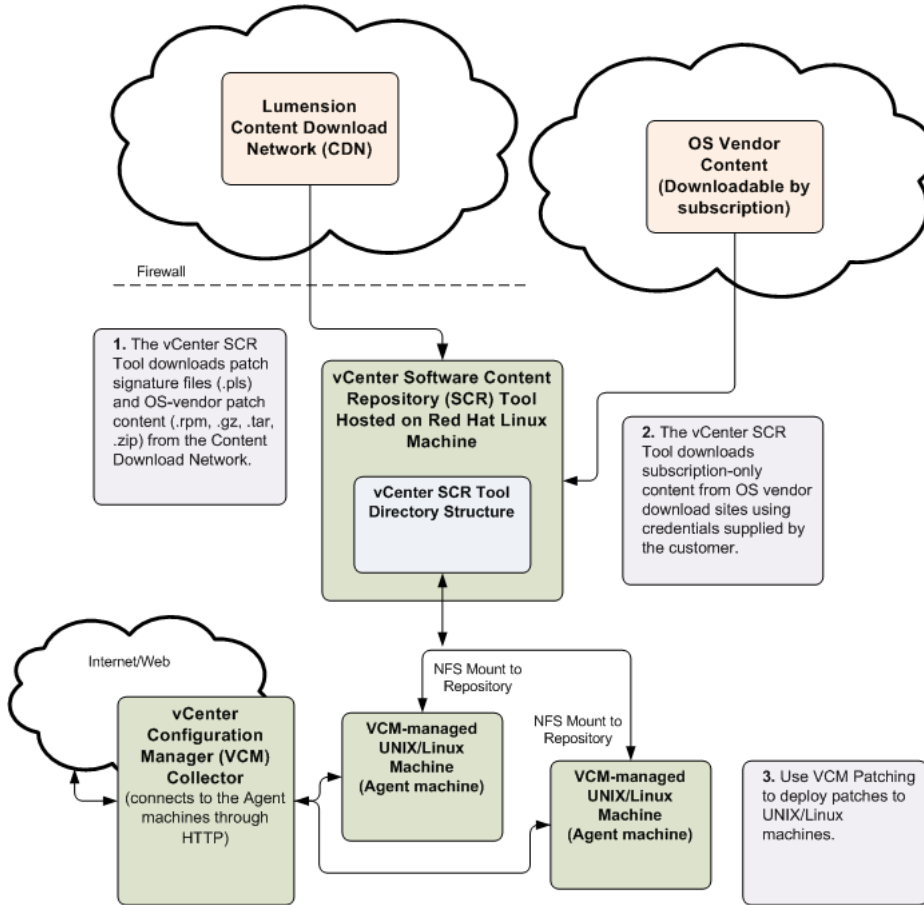
You run the SCR Tool on a host machine. On another machine designated as a VMware vCenter Configuration Manager (VCM) Collector, you must use the VCM Patching functionality to deploy patches to the VCM-managed (agent) machines.

To ensure that all patch dependencies are met when VCM deploys the patches, the SCR Tool downloads all of the necessary patches, except for patches that have been superseded. VCM Patching handles all dependencies when the patches are deployed. If the patch was available when the SCR Tool was installed and configured, the patch downloads. If the patch was not available, or the SCR Tool was not installed and configured, the patch will not be available. If the patch is still available from the OS vendor, it will be available for download using the SCR Tool patch replication process.

The SCR Tool is not used in patch assessments or deployments. The SCR Tool also does not assess the machine configuration or the downloaded patch content that is used for patch deployment.

The SCR Tool downloads the patch signature files and OS-vendor patch content from the Content Download Network (CDN), and downloads subscription-only content from the OS Vendor Content Web site. The patches are accessible to the VCM-managed machines through an NFS mount to the repository on the machine that hosts the SCR Tool. You then use VCM to deploy the patches to the managed machines.

Figure 1–1. How to Downloads Patches with the SCR Tool



After you download patches from the vendor Web site, you must use VCM to assess your UNIX and machines. For information about assessments, see the *VCM Installation and Getting Started Guide* and the VCM online Help.

To deploy the patches to UNIX and Linux machines, you must use the machine group mapping in VCM Patching. For information about patching, see the *VCM Installation and Getting Started Guide* and the VCM online Help.

Preparing for SCR Tool Installation

Before you install the SCR Tool, you must complete several prerequisite tasks.

This chapter includes the following topics:

- ["Install the VCM Agent on the Machines to be Managed" on page 9](#)
- ["Select and Prepare the Host Machine" on page 9](#)
- ["Establish User Credentials" on page 10](#)
- ["Ensure Access to External Sites" on page 11](#)

Install the VCM Agent on the Machines to be Managed

To obtain UNIX and Linux patches for deployment, VCM-managed machines connect to the machine that hosts the SCR Tool using an NFS mount. VCM Patching is used to deploy the patches to the managed machines.

The VCM-managed machines that can connect to the machine that hosts the SCR Tool include Solaris, Red Hat, HP-UX, AIX, SUSE, and Mac OS X.

Prerequisites

Verify that your platforms meet the system requirements. System requirements for all platforms are described in the *VCM Hardware and Software Requirements Guide*.

Procedure

1. From the platform to be managed by VCM, access the VMware Web download site or locate the VCM installation CD.
2. Install the VCM agent on the platform.

Installation instructions are described in the *VCM Installation and Getting Started Guide*.

Select and Prepare the Host Machine

The SCR Tool must be hosted on a 32-bit Red Hat Enterprise Linux AS/ES machine. After the host machine meets all of the requirements, the machine can run as a guest in a virtualized environment.

IMPORTANT The host machine must be used exclusively to run the SCR Tool and serve as the patch repository.

To download content for each supported platform to support patch deployment, the minimum recommended storage is 810GB. Estimated storage requirements are as follows.

Table 2–1. Host Support for Patch Storage on Platforms

Supported Platform	Minimum Storage Required for Patch Content Files and Payload
AIX	130GB
HP-UX	15GB
Mac OS X	210GB
Red Hat *	70GB
Solaris	325GB
SUSE	60GB

* Red Hat 3 content is no longer available for bulk download from Red Hat. If you need Red Hat 3 content, manually download the patches you need and place them in the `getPackage` directory, or copy them from the existing SCR 2.0 payload directories. You need the `.rpm` files for Red Hat 3, but you do not need the `.pls` and `.plp` files.

Procedure

- Select a 32-bit Red Hat Enterprise Linux AS/ES machine to use as the host for the SCR Tool.
- Remove any non-Oracle Java versions.
- Verify that the host machine has Internet access.
- Verify that the host machine has adequate storage to download content for each supported platform to support patch deployment to all of the platforms.
- Verify that the host machine has Oracle Java Runtime Environment (JRE) version 1.6 or later installed, 32-bit only.
- Verify that the host machine has Oracle Java Cryptography Extension (JCE) Unlimited Strength Jurisdiction Policy Files corresponding to the JRE version installed.
The JCE is required for the encryption of credentials to the OS vendor sites.
- Verify that the host machine has sufficient memory for the replication scripts.
Linux replication scripts require up to 2GB of memory. All other platforms require 1GB by default.
- Allow additional memory for the overhead of host OS operations, which vary depending on your environment.

As the patch content increases due to downloads and storage of patch content files and payload, monitor the available disk space on the host machine to avoid disk space issues. The content to be stored grows over time as new patches and content is released.

Verify that your platforms meet the system requirements. System requirements for all platforms are described in the *VCM Hardware and Software Requirements Guide*.

Establish User Credentials

To download OS-vendor subscription-only content for Red Hat, Solaris, SUSE, and HP-UX machines, you must establish user credentials to the OS vendor sites.

Procedure

1. Contact the vendor to obtain a subscription to patch content.
2. Establish your login and password to the vendor site.

Ensure Access to External Sites

You must ensure that the SCR Tool can access the sites from which it will download patches and payload.

Depending on the platform supported, the SCR Tool must have access to the following sites.

Table 2–2. Access from SCR Tool to External Sites

Platform	SCR Tool must Access
All platforms	* http://configuresoft.cdn.lumension.com/configuresoft * http://novell.cdn.lumension.com/ * https://a248.e.akamai.net/f/60/59258/2d/
Red Hat	http://xmlrpc.rhn.redhat.com/XMLRPC
SUSE	https://you.novell.com/update/ https://nu.novell.com/repo/\$RCE/
Solaris	https://getupdates.oracle.com/
HP-UX	https://itrc.hp.com/service/ https://ftp.itrc.hp.com/wpsl

* For sites that are hosted by Akamai, use the URL instead of the resolved IP address. Sites hosted by Akamai might change IP addresses based on location.

Installing the SCR Tool

This information provides instructions on how to install the SCR Tool.

This chapter includes the following topics:

- ["Install the SCR Tool Software" on page 13](#)
- ["Download the Java Runtime Environment" on page 14](#)
- ["Test the Java Runtime Environment Installation" on page 14](#)
- ["Download and Install the Java Cryptography Extension" on page 14](#)

To support the patch file and payload downloads and storage, and patch deployment, you must install and test the required software:

- SCR Tool software
- Java Runtime Environment
- (Optional) Java Cryptography Extension

Install the SCR Tool Software

You must install the Software Content Repository Tool software on the host machine.

Prerequisites

Complete the preparatory tasks described in ["Preparing for SCR Tool Installation" on page 9](#).

Procedure

1. Access the Download VMware vCenter Configuration Manager Web site at http://downloads.vmware.com/d/info/datacenter_downloads/vmware_vcenter_configuration_manager/5_0.
2. Select the **Drivers & Tools** tab.
3. Expand and select **VMware Configuration Manager Tools**.
4. (Optional) In the Components section, select **Show Details** and verify the version of the Software Content Repository Tool is 3.0.
5. Click **Download**.
6. Unzip the SCR Tool files from `SCR-3.0-configuresoft-unix.tar.gz` to the directory where the application files will reside on the host machine.

The default installation directory is `SCR-3.0`.

After you extract the SCR Tool files, a root directory is created that contains subdirectories and files for the supported UNIX and Linux platforms. This guide refers to the root directory as `<scr_root>`.

Download the Java Runtime Environment

You must download the Java Runtime Environment (JRE) to the machine that hosts the SCR Tool.

Prerequisites

Access <http://www.java.com/en/download/manual.jsp>.

Procedure

1. Download and install Java Runtime Environment (JRE) version 1.6 or later.
Use the platform-specific link to display detailed installation instructions for your platform.

Test the Java Runtime Environment Installation

You must test the Java Runtime Environment installation on the Red Hat host machine.

Prerequisites

Access <http://www.java.com/en/download/help/testvm.xml>.

Procedure

1. Verify that the JRE is installed.
2. (Optional) Open a terminal session on the host machine and run the following command to display the currently installed version of Java: `java -version`.

Download and Install the Java Cryptography Extension

The Java Cryptography Extension (JCE) is required only for HP-UX, Red Hat, Solaris, and SUSE. Use JCE if you need to encrypt passwords when you use third-party credentials in the replication scripts that are used to download patch content.

You must download and install the Java Cryptography Extension (JCE) installation on the host machine.

IMPORTANT If multiple Java SE (Standard Edition) Development Kit (JDK) or JRE installations exist on the same machine, make sure you update the correct JDK or JRE instance.

Prerequisites

Access <http://java.sun.com/javase/downloads>.

Procedure

1. Click **Other Downloads** and **Download**.
If the download page does not automatically detect your Java version, you might have to manually locate the correct JCE package.
2. In the JCE zip file, locate `README.txt`.
3. Follow the instructions in the `README.txt` to install the JCE.

Configuring the Host Machine

Configuring the Red Hat machine to host the SCR Tool involves several tasks. This information provides instructions on how to configure the host machine.

This chapter includes the following topics:

- ["Review the Directory Structure" on page 15](#)
- ["Grant Permission to the Repository" on page 16](#)
- ["Update the Replication Scripts" on page 16](#)
- ["Connect the VCM-Managed Machines to the SCR Tool" on page 21](#)
- ["Set Logging Levels and Output File Names" on page 21](#)

Review the Directory Structure

In the SCR root directory, subdirectories are created and organized by platform type and payload. You must verify that the correct files exist in the required locations.

To determine which .pls files to use for patch assessments, the SCR Tool processes the file named `unixpatching2.xml`, which contains the .lst files used in the assessments.

Procedure

1. Open the SCR Tool root directory.

The default root directory is named `SCR-3.0`. Because the execution of the replication scripts is based on relative paths under the root directory, you can modify the root directory name.

2. Verify that the .pls files are stored in the directories for each platform.

The directories include `./aix`, `./hpux`, `./osx`, `./redhat-nca*`, `./solaris`, and `./suse-nca*`.

IMPORTANT Do not delete the patch signature (.pls) files. These files are used to confirm whether the patches are available. Patch signature files are stored in the platform subdirectories defined by the replication script parameter `<SCR_output_folder>`.

3. Verify that the directories whose names begin with "payload" contain the platform vendor patch files and the .plp files.

The new content architecture places some patches in alternate locations.

Patches	Location
Red Hat	RedHat/getPackage/
SUSE	SUSE/rpm/[architecture]/

The SCR Tool downloads content based on the schedule you establish. After the SCR Tool downloads the content from the Content Download Network (CDN), the individual payload directories must contain the patch content.

- Verify that the Mac OS X payload folders contain .plp files only, which embed the vendor patches. If `-extractOSX true` is defined in the replication script for Mac OS X, the physical vendor patch appears.

For more information, see:

- ["Update the Replication Scripts" on page 16](#)
- ["Download the Patch Content" on page 23](#)
- ["Schedule Downloads" on page 24](#)

Grant Permission to the Repository

To access and update the replication scripts, the host machine must have execute permission for all of the repository application files. You run a command on the host machine to grant this permission.

Procedure

- From the host machine `<scr_root>` directory, open a terminal session.
- Change to the SCR root directory and run `chmod -R a+x **/*`.
- Change the working directory to `<scr_root>/bin`.

Update the Replication Scripts

Replication scripts are used during the download process to replicate the patch content on the host machine.

The supplied replication scripts contain user credentials, environment settings, and java calls that the SCR Tool uses to download the patch content for each supported platform.

Replication scripts are named in this format: `start_<platform>_replication.sh`.

Each replication script is configured to require between 512MB of RAM (minimum) and 2GB (maximum).

Prerequisites

- If you run multiple scripts simultaneously on a single machine, verify that the machine has sufficient memory to support each process. Insufficient memory might cause errors.
- Update the replication script for each platform to change options, including the path, platform, distribution, architecture, third-party credentials, extract parameter, output file, and input file path. You can use any combination of platform, distribution, and architecture.

Procedure

1. Access the directory named `<scr_root> SCR-3.0/bin` and locate the UNIX and Linux replication scripts.

Platform	Shell Script Name
Red Hat	<code>start_redhat_replication.sh</code>
AIX	<code>start_aix_replication.sh</code>
HP-UX	<code>start_hp_replication.sh</code>
SUSE	<code>start_suse_replication.sh</code>
Solaris	<code>start_sol_replication.sh</code>
Mac OS X	<code>start_osx_replication.sh</code>

2. Obtain an encrypted password by using `lumension_encryptor_tool`.
 - a. At the root directory prompt, enter: `# ./lumension_encryptor_tool.sh`.
The encryptor tool returns the string, "MyPassword".
 - b. Enter your password twice, and ignore any strings returned by the encryptor tool.
 - c. When the encryptor tool returns the encrypted password string, copy the string into the encrypted password field of the same string in the replication script:

```
-thirdparty -user <username> -pwd <encrypted password>
```



CAUTION Modify only the command line parameters listed here. These parameters are the only ones that can be modified in a typical installation environment.

You can now update the command line parameters in the replication scripts for the platforms used. See ["Replication Script Parameters" on page 18](#).

For information about automating a process to run the scripts by using OS schedulers, such as `cron` or `at`, see ["Managing Patch Content with the SCR Tool" on page 23](#).

Replication Script Parameters

Use the replication script parameters to customize the scripts that are used during the download process to replicate the patch content on the host machine. The following parameters are available.

- `-checkPayload <true|false>`

Enables the SCR Tool to audit and verify payload content for `.pls` files. If the `.pls` files do not match the `.pls` or `.plp` files, this option causes the SCR Tool to download or replace the payload files.

This parameter defaults to `false` if not included on the command line or not explicitly set to `true`. The value is set to `TRUE` by default in each replication script.

- If `false`, or not provided, the SCR Tool downloads and loops through each new or modified `.pls` file. The process downloads any payload data, which includes `.plp` files and vendor patch files that correspond to each downloaded `.pls` file.
 - If `true`, the SCR Tool validates every payload file for every `.pls` file, whether it is new, modified, or unchanged.
- `-folder <SCR_output_folder>`

Defines the root folder where the SCR Tool output is stored. By default, this folder is `/tmp/SCR/download`. The SCR Tool automatically creates the subdirectory tree under the root output folder.

- The platform architecture directory `<SCR_output_folder>/<platform>/<architecture>` contains the `.pls` files.
 - The payload platform architecture directory `<SCR_output_folder>/<payload>/<platform>/<architecture>` contains the patch content files, such as `.plp`, `.zip`, `.rpm`, `.htm`, and `.jar` files.
- `-platform <platform_name> -dist <distribution> -arch <architecture1>,<architecture2>`

The `-platform` and `-arch` parameters are required and specify the patch content to be downloaded. For Red Hat and SUSE platforms, the `-dist` parameter is also required.

The `-arch` parameter value must include one or more valid architecture strings for the specified platform or platform and distribution combination. Multiple architectures must be comma-delimited without spaces.

Table 4–1. Replication Script Parameters

-platform	-dist	-arch
AIX		POWERPC
HP_UX		PA_RISC, ITANIUM
OSX		X86,PPC
LINUX	REDHAT	X86,X86_64
LINUX	SUSE	X86,X86_64
SOLARIS		X86,SPARC

- `-thirdparty -user <username> -pwd <encrypted password>`

You must supply these parameters for platforms that require third-party credentials to download subscription patch content directly from the OS vendor. You must always supply the `-user` parameter for OS vendors that require credentials for content. For Solaris, this parameter is required only when the patch is available with a subscription to Oracle.

If a vendor offers entitled and non-entitled content, the non-entitled content is provided through the CDN site managed by Akamai, and the entitled content is provided by the OS vendor. Some OS vendors might require the password as part of the URL for content retrieval.

For HP-UX, you must add these parameters.

On the Java command line in replication scripts that require third-party credentials, the `-thirdparty` parameter must always accompany the `-user` and `-pwd` parameters.

When processing platforms whose vendors require subscription credentials, the `-pwd` parameter expects an encrypted password. A script named `lumension_encryptor_tool.sh` is provided in `<scr_root>/bin`, and used to encrypt the password.

The encryption script accepts a clear text password and returns a 32-bit character encrypted string to be used as the argument to the `-pwd` parameter. Use the encrypted password returned from the password encryptor tool.

- `-extractOSX <true|false>`

For the Mac OS X platform only. When executed, this parameter specifies to extract the embedded `.dmg` vendor patch files from the corresponding `.plp` files. When used with any other platform, this parameter has no effect.

- `-configlog <config_log_file_path>`

This parameter specifies an output file, which contains a list of command line parameters and values. These values reflect the parameter configuration used during the last or current execution of the SCR Tool, and can be used to troubleshoot problems.

- `-proxyServer`

Proxy server IP address.

- `-proxyPort`

Proxy server port.

- `-proxyUser`

User ID for proxy server authentication.

- `-proxyPwd`

Encrypted password for the proxy server. This password is generated using the `lumension_encryptor_tool.sh` script.

- `-Djava.util.logging.config.file=<logging_config_file_path>`

This parameter specifies the input file path to a custom application logging configuration file. The configuration file specifies the logging granularity and output log file path. Additional information is described in ["Set Logging Levels and Output File Names" on page 21](#).

- `-channels`

Specifies the channels of content to download so that you can manage content according to environment needs. You enter these parameters into the replication script as a comma separated variable list.

For example, for Red Hat: `-channels es-4,server-5`

By default, excluding this switch enables all channels. By adding this switch, you can limit the duplication of content during the download by specifying only the patches or packages that apply to your environment. Duplicate content primarily affects Linux distributions.

Table 4-2. Replication Script Channels

Platform	Channel
RedHat	as-4 es-4 ws-4 client-5 server-5
SUSE	SUSE9 SLED10 SLES10 SLED11 SLES11
Solaris	sol8 sol9 sol10
HP-UX	11_11 11_23 11_31
AIX	5_1 5_2 5_3 6_1 technologylevel_aix51 technologylevel_aix52 technologylevel_aix53 technologylevel_aix61
OSX	10_4 10_5 10_6 applications

- `-dependencyCheck <true|false>`

Turns off dependent RPM download for Linux platforms.

- When set to true, downloads all of the dependent RPMs recursively. During the initial replication, which is performance intensive, this process downloads each package and dependencies.
- When set to false, downloads only the RPMs declared in the OS vendor errata. This process might cause the SCR Tool to miss some dependent packages during the replication from the OS vendor. This option is the default value.

Connect the VCM-Managed Machines to the SCR Tool

To establish communication between the managed machines and the host machine, you must connect the VCM-managed machines to the SCR Tool.

Procedure

For each specific platform type, you can use these methods to connect the managed machines to the SCR Tool.

- Create a mount point to the respective platform directory on the host machine that contains the patch payload for the platform.
- Use a remote command to mount the VCM-managed machine at the time of patch deployment.
- Use a remote command to FTP the files to the machine when the patches are deployed.

Set Logging Levels and Output File Names

The SCR Tool provides flexible logging settings and properties.

You can specify custom logging levels and output file names for each execution of the SCR Tool by using the `-Djava.util.logging.config.file` command line parameter.

Procedure

1. Copy the `<scr_root>/bin/logging.properties` file to a new file that you can customize.
For example: `logging.properties.aix`
2. In the SCR replication script, change the `-Djava.util.logging.config.file` command line parameter to refer to the new logging properties file.
3. Open the new logging properties file.
4. Set the `FileHandler.level`.

By default, all scripts log data to the same filename pattern at the INFO logging level. The logging values include several levels:

- SEVERE
- WARNING (valid, but not used)
- INFO (recommended for production)
- CONFIG (valid, but not used)
- FINE (debug)
- FINER (debug)
- FINEST (debug)

- To customize log file names, change the output `log_filename_pattern` parameter.

The entry resembles: `java.util.logging.FileHandler.pattern = <log_filename_pattern>`

- Verify that the `<log_filename_pattern>` entry includes the path.

For example: `../logs/scr-messages-rh-%g.log`.

To help generate distinct filenames automatically, you can use these special substitution variables:

Variable	Description
/	Local path name separator.
%t	System temporary directory.
%h	Value of the "user.home" system property.
%g	Generated number to distinguish rotated logs.
%u	Unique number to resolve conflicts.
%%	Translates to a single percent sign "%".

- To select where the log stream is written, change the `handlers=<handler_name>` property.

Valid values are written to the file handler log file or the console handler `stderr` output.

- `java.util.logging.FileHandler`
- `java.util.logging.ConsoleHandler`

- To increase or decrease the number of bytes written to the log files before they rotate, update this statement.

```
java.util.logging.FileHandler.limit=<bytes>
```

- To specify the maximum number of log files to retain before overwriting the oldest, update this statement.

```
java.util.logging.FileHandler.count=<log_file_count>
```

- Set the file handler log file.

```
java.util.logging.FileHandler.append = true
```

When set to true, the SCR Tool attempts to append the last used log file. When set to false, the SCR Tool rolls over to write to a new log file.

Managing Patch Content with the SCR Tool

5

The SCR Tool downloads patch content files from the Content Download Network (CDN), which is managed by Akamai, the hosted content service provider. The SCR Tool obtains any additional patches from the Red Hat, AIX (IBM), SUSE, HP-UX, and Solaris vendor sites and saves those patches in your defined directories.

The SCR Tool performs delta downloads, which means that after the first download, successive downloads retrieve only the differences in patch content that occurred since the last download. When the files download, the patch source, CDN, Vendor, and other information is written to the log files.

IMPORTANT Do not delete the patch signature (.pls) files. These files are used to confirm whether the patches are available. Patch signature files are stored in the platform subdirectories defined by the replication script parameter `<SCR_output_folder>`.

This chapter includes the following topics:

- ["Download the Patch Content" on page 23](#)
- ["Schedule Downloads" on page 24](#)
- ["Maintain the Software Content Repository" on page 25](#)

Download the Patch Content

You must download patch content onto the Red Hat host machine for deployment of those patches to the supported VCM-managed machines.

Procedure

1. Run the updated replication scripts by using `crontab`.
You can use `crontab` to specify a schedule for executing the shell commands.
2. Open a terminal session from the directory defined as `<SCR_output_folder>`.
3. Run the commands to interactively track the progress of the download.

```
date; df -k ; du -k | grep -i [Vendor_Name]
```

When the patch download process is finished, use VCM Patching to patch the UNIX machines.

Schedule Downloads

You can use OS schedulers, such as `cron` or `at`, to automate the process to run the replication scripts. This configuration is preferred since the download process might require more than one execution of the replication script to retrieve all content for any given vendor.

If multiple platforms connect to the same repository, you must schedule the replication scripts to run separately for each platform. The SCR Tool does not provide embedded scheduling.

Procedure

1. In the `<scr_root>/bin` directory, create a file that contains a list of all platforms for which you have a content subscription.
2. Comment out the platforms that are not necessary or for which you do not have a subscription.
3. Run the command to create a file to schedule the script replication.

```
vim start_all_nix_replication.sh
```

4. Add content to the file to replicate all platforms.

Omit entries for unused platforms.

```
#!/bin/sh
echo Running start_aix_replication.sh
./start_aix_replication.sh
echo Running start_hp_replication.sh
./start_hp_replication.sh
echo Running start_osx_replication.sh
./start_osx_replication.sh
echo Running start_rh_replication.sh
./start_redhat_replication.sh
echo Running start_sol_replication.sh
./start_sol_replication.sh
echo Running start_suse_replication.sh
./start_suse_replication.sh
```

5. Set the mode of the script to executable.

```
chmod +x start_all_nix_replication.sh.
```

6. In `/etc/cron.daily`, create a new file.

```
vim SCR
```

7. Add content to the file to begin the replication process.

```
#!/bin/sh
cd [<scr_root>/bin]
echo "### Get all new unix content"
./start_all_nix_replication.sh
```

8. Set the mode of the file to executable.

```
chmod +x SCR
```

The script will execute daily and automatically synchronize your content.

Maintain the Software Content Repository

To maintain the repository and performance, you must monitor the log files and activities.

Prerequisite

Before you run the replication scripts or schedule downloads, verify that the host machine has adequate disk space available as described in ["Select and Prepare the Host Machine" on page 9](#).

Procedure

1. Monitor the size of the log files.
 - If you specified a rotation in the log file properties, the log file content does not require cleanup.
 - If you did not specify a rotation, you must clean up the log file content so that it does not consume unnecessary amounts of memory.
2. Review the activities logged in the platform specific files named `logging.properties.<platform>`.
A separate log file is used for each platform type. For example: `logging.properties.aix`.

Troubleshooting the SCR Tool

SCR Tool troubleshooting information provides procedures for diagnosing and fixing problems that you might encounter when you use the SCR Tool or download patch content.

This chapter includes the following topics:

- ["Out of Memory Error" on page 27](#)
- ["Content Download Network Connection Error" on page 28](#)
- ["Connection to Red Hat Account Fails" on page 28](#)
- ["Download from Red Hat Fails" on page 29](#)
- ["Mismatch in Number of Patches" on page 30](#)
- ["OS Vendor Does Not Accept Credentials" on page 30](#)
- ["OS Vendor Errors" on page 30](#)
- ["Patch Download Errors" on page 31](#)
- ["Invalid Patches Cause the Download to Fail" on page 32](#)
- ["HTTP Errors Are Not Marked as SEVERE" on page 32](#)
- ["Connection Refused Errors" on page 33](#)
- ["Null Pointer Exception Errors" on page 34](#)

Out of Memory Error

Insufficient host memory might cause the SCR Tool to report that the system is out of memory.

Problem

The SCR Tool reports a `OutOfMemoryErrorChange` error.

Cause

If you run multiple batch files simultaneously on a single machine, the machine might not have sufficient RAM to support each process.

Solution

Ensure that your machine has enough memory to run the replication scripts. Each replication script is configured to require between 512MB of RAM minimum and 2GB maximum.

Content Download Network Connection Error

The connection between the SCR Tool and the Content Download Network (CDN) might drop occasionally.

Problem

The SCR Tool cannot connect to the CDN.

Cause

The host machine on which the SCR Tool is installed cannot connect to the Internet.

Solution

1. Verify that the host machine can connect to the Internet.
2. Ping the address of the CDN server, which is contained in the logs.
3. If pinging the server is not successful, determine whether a host resolution problem exists, or determine if blocks exist in your firewall, and take appropriate action.

Connection to Red Hat Account Fails

When Red Hat account information changes, you must resynchronize the Software Content Repository Tool with the Red Hat Repository and update the replication scripts to use the new account information.

Problem

The SCR Tool connection to the Red Hat repository fails.

Cause

Red Hat account information has changed.

Solution

You must synchronize the Software Content Repository Tool with the Red Hat Repository.

1. Select the SCR output folder and delete all of the `SystemId*.xml` files.

For example:

```
cd PatchRepo/Repos/unix
rm SystemId*.xml
```

The path to the `unix` folder is located in the replication script, and is defined using the `-folder` parameter. For example: `-folder /PatchRepo/Repos`.

2. Log in to your Red Hat network download site.
3. Locate any systems that were created by SCR whose names begin with `redhat-nca*` and delete them.
4. On the host machine where the SCR Tool is installed, from the `<scr_root>/bin` directory, open the replication script and verify that it is updated with the new username and encrypted password.
5. Run the replication script again.

Download from Red Hat Fails

If you change or delete source machine information at Red Hat Network, patch download fails until you reset the Software Content Repository Tool so that correct source machine information is synchronized with the Red Hat Repository.

Problem

The log in to Red Hat succeeds, but patch download fails with an error similar to the following.

```

FINE: Login Response XML is Server ID = Auth User ID = Auth Server Time =
Auth Expire = Auth = Channel = []
Aug 17, 2011 3:45:19 PM com.lumension.scr.pojo.SCPackage download
FINE: Downloading filegetPackage/mailman-2.1.5.1-34.rhel4.6.i386.rpm
Aug 17, 2011 3:45:19 PM com.lumension.scr.rhn.RHNRPMFile download
FINE: Downloading RPM file /patchRepo/repos2/RedHat/getPackage/mailman-
2.1.5.1-34.rhel4.6.i386.rpm
Aug 17, 2011 3:45:19 PM com.lumension.scr.client.StandaloneSCRepositoryClient
download
SEVERE: Package Download Exception
com.lumension.scr.exception.SCRException: Primary patch file failed download:
RHSA-2007:0779-04 getPackage/mailman-2.1.5.1-34.rhel4.6.i386.rpm
    at com.lumension.scr.pojo.SCPackage.download(SCPackage.java:472)
    at com.lumension.scr.client.StandaloneSCRepositoryClient
.download(StandaloneSCRepositoryClient.java:389)
    at com.lumension.scr.client.StandaloneSCRepositoryClient
.process(StandaloneSCRepositoryClient.java:328)
    at com.lumension.scr.client.StandaloneSCRepositoryClient
.main(StandaloneSCRepositoryClient.java:429)

```

Cause

Source machine information has been changed or deleted on Red Hat Network (RHN).

Solution

Resynchronize the Software Content Repository Tool with the Red Hat Repository.

1. Select the SCR output folder and delete all of the `SystemId*.xml` files.

For example:

```

cd PatchRepo/Repos/unix
rm SystemId*.xml

```

The path to the `unix` folder is located in the replication script, and is defined using the `-folder` parameter. For example: `-folder /PatchRepo/Repos`.

2. Run the replication script manually or let it run automatically on schedule.

Mismatch in Number of Patches

The number of patches on the vendor download site exceed the number of patches verified by the host machine.

Problem

A mismatch appears to exist in the number of patches available to the SCR Tool versus the patches listed by the vendor.

Cause

The host machine verifies only the security patches recommended by the vendor. Because not all of the patches on the vendor download site are security related, the number of patches available to the SCR Tool are a subset of the total number of available patches.

A true mismatch can occur if a patch signature list (.pls) file was downloaded but the replication script stopped executing before the payload finished downloading.

Solution

1. Rerun the replication script.
2. If a patch appears to be missing, delete the corresponding .pls file for the missing patch, and download the content again.

OS Vendor Does Not Accept Credentials

When you attempt to connect to the Content Download Network, the OS vendor does not accept your login credentials.

Problem

The OS vendor does not accept your credentials.

Cause

Your credentials might be outdated, or the password might have changed.

Solution

1. Verify with the vendor that your credentials to the vendor's site are valid.
2. Check that the correct user is defined in the replication script.
3. If the password has changed, encrypt the password in the replication script again.

OS Vendor Errors

When you attempt to connect to the Content Download Network, the OS vendor download site reports an error.

Problem

When you attempt to download content, an error occurs on the OS vendor download site. For example:

```
Mar 24, 2011 3:33:19 PM sun.net.www.protocol.http.HttpURLConnection  
getInputStream
```

```

FINE: HYPERLINK "mailto:sun.net.www.MessageHeader@1a4e8a118"
sun.net.www.MessageHeader@1a4e8a118 pairs: {null: HTTP/1.1 401 Authorization
Required}{Date: Thu, 24 Mar 2011 21:35:03 GMT}{Server: Apache}{X-RHN-Fault-
Code: -33}

```

Cause

Errors might occur when:

- You attempt to use the `-channels` parameter in a replication script but you are not entitled to use the command.
- An excessive number of concurrent logins to the OS vendor site exist at the time of download.

Solution

- If multiple users in your environment are manually connected to these download sites, wait until they are finished before you connect.
- Limit user connections to the OS vendor download site during replication, and restart the replication process again.

Patch Download Errors

When you run the replication scripts, the process might not display the source of the problem when an error occurs.

Problem

A failure in the download process might occur because of various problems, but the source of the problem is not obvious. When the content downloads, a severe error that is recorded in the logs might not indicate an actual error. For example, if the CDN does not have the requested package, non-entitled content might display a SEVERE error.

Cause

The patch download process failed, and no message appeared to indicate the cause of the problem.

Solution

1. On the host machine, access the `<scr_root>/logs` directory.
2. View the platform specific log file.
3. Check the log file to confirm if any SEVERE entries are logged.

Various types of errors can occur. For example:

```

Feb 23, 2011 4:42:45 PM com.lumension.scr.pojo.SCPackage download
SEVERE: Payload file URL to download
http://novell.cdn.lumension.com/novell/aix/ppc/IY76827.tar.gz

Mar 29, 2011 12:59:01 PM com.lumension.scr.util.Utils downloadFromURL
SEVERE: com.lumension.scr.exception.UnableToAccessURL: Unable to access URL

```

4. Use the message results in the log file to resolve the error and attempt the download from the entitled OS vendor site again.

Invalid Patches Cause the Download to Fail

Problem

Solaris downloads fail on patches whose names begin with SUN. These errors resemble:

```
SEVERE: Failed to download payload file  
  
SEVERE: Payload download  
/tmp/SCR/download/payload/solaris/x86/SUN10RPC20110304.zip failed
```

Cause

Solaris patches whose names begin with SUN are invalid. This content is no longer provided by the vendor.

Solution

Ignore errors related to these invalid patches.

HTTP Errors Are Not Marked as SEVERE

Problem

HTTP 404/503 errors might be logged as FINE, and do not contain the phrase SEVERE in the message, which can cause problems when using the SEVERE message to troubleshoot the problem. These error types resemble:

```
Apr 8, 2011 2:20:52 PM com.lumension.scr.rhn.RHNRegister postXMLRPCRequest  
FINE: RHN HTTP Response 404  
  
Apr 8, 2011 2:20:52 PM com.lumension.scr.rhn.RHNRegister postXMLRPCRequest  
FINE: RHN HTTP Response 404  
  
Apr 11, 2011 2:28:29 PM com.lumension.scr.rhn.RHNManager getSession  
FINE: Getting RHN session  
  
Apr 11, 2011 2:28:29 PM com.lumension.scr.rhn.RHNRegister postXMLRPCRequest  
FINE: RHN HTTP Response 503
```

Cause

These types of errors typically indicate that an issue exists with the connection to the external Red Hat download site.

Solution

If these HTTP Response codes from the Red Hat download site occur, attempt to replicate the patch content again later.

Connection Refused Errors

Problem

Connection refused errors can occur when you run a replication script interactively, or in the cron logs when you use cron. These errors resemble:

```

java.net.ConnectException: Connection refused
at java.net.PlainSocketImpl.socketConnect(Native Method)
at java.net.PlainSocketImpl.doConnect(PlainSocketImpl.java:351)
at java.net.PlainSocketImpl.connectToAddress(PlainSocketImpl.java:213)
at java.net.PlainSocketImpl.connect(PlainSocketImpl.java:200)
at java.net.SocksSocketImpl.connect(SocksSocketImpl.java:366)
at java.net.Socket.connect(Socket.java:529)
at java.net.Socket.connect(Socket.java:478)
at sun.net.NetworkClient.doConnect(NetworkClient.java:163)
at sun.net.www.http.HttpClient.openServer(HttpClient.java:394)
at sun.net.www.http.HttpClient.openServer(HttpClient.java:529)
at sun.net.www.http.HttpClient.<init>(HttpClient.java:233)
at sun.net.www.http.HttpClient.New(HttpClient.java:306)
at sun.net.www.http.HttpClient.New(HttpClient.java:323)
at
sun.net.www.protocol.http.HttpURLConnection.getNewHttpClient(HttpURLConnection.java:970)
at sun.net.www.protocol.http.HttpURLConnection.plainConnect(HttpURLConnection.java:911)
at sun.net.www.protocol.http.HttpURLConnection.connect(HttpURLConnection.java:836)
at
sun.net.www.protocol.http.HttpURLConnection.getOutputStream(HttpURLConnection.java:1014)
at com.lumension.scr.rhn.RHNRegister.postXMLRPCRequest(RHNRegister.java:435)
at com.lumension.scr.rhn.RHNRegister.loginToRHN(RHNRegister.java:526)
at com.lumension.scr.rhn.RHNManager.getSession(RHNManager.java:82)
at com.lumension.scr.pojo.SCPackage.download(SCPackage.java:439)
at
com.lumension.scr.client.StandaloneSCRepositoryClient.download(StandaloneSCRepositoryClient.java:389)
at
com.lumension.scr.client.StandaloneSCRepositoryClient.process(StandaloneSCRepositoryClient.java:328)
at
com.lumension.scr.client.StandaloneSCRepositoryClient.main(StandaloneSCRepositoryClient.java:429)

```

Cause

This error can occur due to an undetermined number of reasons.

Solution

You can typically ignore these errors. The script continues to execute and replicate data. To verify that the script continues, open the log defined by the `logging.properties` entry in your replication script.

Null Pointer Exception Errors

Problem

Null pointer errors can occur when you run a replication script interactively, or in the cron logs when you use cron. These errors resemble:

```
Apr 8, 2011 8:51:13 PM com.lumension.scr.client.StandaloneSCRepositoryClient process
SEVERE: Error Processing Content Download Request.
java.lang.NullPointerException
    at com.lumension.scr.pojo.SCPackage.download(SCPackage.java:416)
    at
com.lumension.scr.client.StandaloneSCRepositoryClient.download(StandaloneSCRepositoryClient.java:389)
    at
com.lumension.scr.client.StandaloneSCRepositoryClient.process(StandaloneSCRepositoryClient.java:328)
    at
com.lumension.scr.client.StandaloneSCRepositoryClient.main(StandaloneSCRepositoryClient.java:429)
```

Cause

This error can occur due to an undetermined number of reasons.

Solution

Restart the replication script to continue processing. The recommended setup involves using cron. Using cron starts the script again the following day and resumes replication. If persistent failures continue, log a Customer Support ticket.

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V
VCM Patching

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