Installing and configuring Red Hat Satellite Proxy Server

Red Hat Satellite Documentation Team
Abstract

This document provides guidance on installing, configuring, and updating a Red Hat Satellite Proxy Server. For further information, see the Red Hat Satellite Getting Started Guide and the Red Hat Satellite Installation Guide.
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CHAPTER 1. INTRODUCTION TO RED HAT SATELLITE PROXY

1.1. RED HAT SATELLITE PROXY SERVER

Red Hat Satellite Proxy Server is a package-caching mechanism that reduces the bandwidth requirements for Red Hat Satellite and enables custom package deployment. Satellite Proxy customers cache RPM packages, such as Errata Updates from Red Hat or custom packages generated by their organization, on an internal, centrally-located server. Client systems then receive these updates from Red Hat Satellite Proxy rather than by accessing the Internet individually.

Although the packages are served by Red Hat Satellite Proxy, clients’ system profiles and user information are stored on a secure, central Red Hat Satellite Server. The Satellite Proxy acts as a go-between for client systems and the Red Hat Satellite Server. Only the package files are stored on the Satellite Proxy. Every transaction is authenticated, and the Red Hat Update Agent checks the GPG signature of each package retrieved from the local Satellite Proxy.

In addition to storing official Red Hat packages, the Satellite Proxy Server can be configured to deliver an organization’s own custom packages from private channels. For example, an organization could develop its own software, package it in an RPM, sign it with its own GPG signature, and have the local Satellite Proxy Server update all of the individual systems in the network with the latest versions of the custom software.

Advantages of using Satellite Proxy Server include:

- Scalability: one organization can support multiple local Red Hat Satellite Proxies.
- Security: a secure connection is maintained from the client systems to the local Satellite Proxy, and from there to the Red Hat Satellite servers.
- Saves time: packages are delivered significantly faster over a local area network than the Internet.
- Saves bandwidth: packages are only downloaded once from Red Hat Satellite (using the local Satellite Proxy Server’s caching mechanism), instead of downloading each package separately to each client system.
- Customized updates: create an automated package delivery system for custom software packages, as well as official Red Hat packages required for the client systems. Customized, private Red Hat Satellite channels allow an organization to automate delivery of in-house packages.
- Customized configuration: restrict or grant updates to specific architectures and operating system versions.

1.2. ARCHITECTURE AND OPERATIONS

The Red Hat Update Agent or Package Updater on the client systems does not directly contact a Red Hat Satellite Server. Instead, the client (or clients) connects in turn to a Satellite Proxy Server that connects to a Red Hat Satellite Server. Thus, the client systems do not need direct access to the Internet. They need access only to the Satellite Proxy Server.

IMPORTANT

Red Hat strongly recommends that clients connected to a Satellite Proxy server be running the latest update of Red Hat Enterprise Linux to ensure proper connectivity.
Clients that access a Red Hat Satellite Proxy are still authenticated by Red Hat Satellite but in this case the Satellite Proxy provides both authentication and route information to Red Hat Satellite. After a successful authentication, the Red Hat Satellite Server informs the Satellite Proxy server that it is permitted to execute a specific action for the client. The Satellite Proxy server downloads all of the updated packages (if they are not already present in its cache) and delivers them to the client system.

Requests from the Red Hat Update Agent or Package Updater on the client systems are still authenticated on the server side, but package delivery is significantly faster because the packages are cached in the HTTP Proxy Caching Server or the Satellite Proxy server (for local packages). The Satellite Proxy server and client system are connected over the LAN and transfer speeds are limited only by the speed of the local network.

The authentication process proceeds as follows:

1. The client performs a login action at the beginning of a client session. This login is passed through one or more Satellite Proxy Servers until it reaches a Red Hat Satellite server.

2. The Red Hat Satellite server attempts to authenticate the client. If authentication is successful, the server returns a session token through the chain of Satellite Proxy Servers. This token, which has a signature and expiration time, contains user information, such as channel subscriptions, username, and so on.


4. This session token is sent to the client machine and is used in subsequent actions on Red Hat Satellite.

From the client's perspective, there is no difference between a Satellite Proxy Server and a Red Hat Satellite server. From the Red Hat Satellite server's perspective, a Satellite Proxy Server is a special type of Red Hat client. Clients are thus not affected by the route that a request takes to reach a Red Hat Satellite server. All of the logic is implemented in the Satellite Proxy Servers and Red Hat Satellite servers.

The Custom Channel Package Manager can also be installed and configured to serve custom packages. Any package that is not an official Red Hat package, including custom packages written specifically for an organization, can only be served from a private software channel (also referred to as a custom software channel). After creating a private Red Hat Satellite channel, the custom RPM packages are associated with that channel by uploading the package headers to the Red Hat Satellite servers. Only the headers are uploaded, not the actual package files. The headers are required because they contain crucial RPM information, such as software dependencies, that allows Red Hat Satellite to automate package installation. The actual custom RPM packages are stored on the Satellite Proxy Server and sent to the client systems from inside the organization's local area network.

Configuring a computer network to use Satellite Proxy Servers is straightforward. The Red Hat Satellite applications on the client systems must be configured to connect to the Satellite Proxy Server instead of a Red Hat Satellite server. See the Client Configuration Guide for details. On the proxy side, you need to specify the next proxy in the chain (which eventually ends with a Red Hat Satellite server). If the Red Hat Package Manager is used, the client systems must be subscribed to the private Red Hat channel.
CHAPTER 2. REQUIREMENTS

This chapter focuses on the prerequisites for installing Red Hat Satellite Proxy Server.

2.1. SOFTWARE REQUIREMENTS

To perform an installation, the following software-related components must be available:

- Base operating system: Satellite 5.7 and Satellite Proxy 5.7 are only supported on Red Hat Enterprise Linux 6. You can install the operating system using any of the methods supported by Red Hat.

- Satellite Proxy requires an equal or high version of Satellite. For example, Satellite Proxy 5.6 works with Satellite 5.6 and Satellite 5.7, but Satellite Proxy 5.7 works only with Satellite 5.7.

- A Satellite Proxy entitlement within the Satellite Server account.

- A Provisioning entitlement within the Satellite Server account (this is packaged with the Satellite Proxy entitlement).

- Access to the Red Hat Network Tools channel for the installed version of Red Hat Enterprise Linux. This channel includes the spacewalk-proxy-installer package that contains the `configure-proxy.sh` installation program required to install Satellite Proxy.

- All `rhncfg*` packages installed on the Satellite Proxy (from the Red Hat Network Tools channel).

- Either the `spacewalk-certs-tools` package installed on the Satellite Proxy (from the Red Hat Network Tools channel) for Hosted users, or the secure sockets layer (SSL) CA certificate password used to generate the parent server certificate for Satellite Server users.

IMPORTANT

Red Hat Satellite Proxy Server 5.7 can only run on Red Hat Enterprise Linux 6. It can manage clients of any RHEL version when used with Satellite 5.7. Satellite Proxy Server 5.7 cannot manage Red Hat Enterprise Linux 7 clients in a Proxy-only environment.

Virtualization Support

You can install Satellite Proxy on Red Hat Enterprise Linux 5 or 6 in any virtualized environment that Red Hat supports, including Xen, Hyper-V, KVM, and VMware. For more information about supported environments, see https://access.redhat.com/site/certified-hypervisors.

In production deployments, Red Hat recommends that you deploy Satellite Proxy as the sole application running on the underlying physical hardware to avoid contention issues. Also, be aware that functional support for virtualized environments does not always equal the performance of running on physical hardware, so carefully consider the virtualized environment of choice and any recommended tuning guidelines.

Each purchased Satellite Proxy includes one supported instance of Red Hat Enterprise Linux Server. Satellite Proxy must be installed onto a fresh installation of Enterprise Linux, and where Satellite Proxy is the only application and service provided by the operating system. Using the Red Hat Enterprise Linux operating system included in Satellite Proxy to run other daemons, applications, or services within the environment is not supported.
Obtaining the Required Package Sets

Each version of Red Hat Enterprise Linux requires a certain package set to support Satellite Proxy. Adding more packages can cause errors during installation. Therefore, Red Hat recommends obtaining the desired package set in the following ways:

- For kickstart installations, specify the following package group: @Base
- For installing Red Hat Enterprise Linux from CD or ISO image, select the following package group: Minimal

2.2. HARDWARE REQUIREMENTS

Use the following guidelines to determine if your hardware is suitable for a Satellite Proxy installation:

- A Pentium IV Processor or equivalent.
- At least 2 GB of memory. 4 GB of memory recommended.
- At least 5 GB of storage for a base installation of Red Hat Enterprise Linux.
- 6 GB of storage per architecture per release.

The caching mechanism used by Satellite Proxy is the Squid HTTP proxy, which saves significant bandwidth for the clients. Cached packages are stored in the /var/spool/squid directory. The more disk space that the cache has available, the less likely it is to remove RPM files before they have expired. Providing less than the recommended storage reduces the performance enhancements offered by using the Proxy server.

Satellite Proxy 5.7 features the ability to precache entire channels. Using this feature requires significant disk space; Red Hat recommends at least 20 GB per base channel. Refer to the hardware guidelines in the Red Hat Satellite Installation Guide in you intend to use this feature. Proxy precaching is discussed in Section 4.2, “Configuring Proxy Precaching”.

If the Satellite Proxy is configured to distribute custom, or local packages, make sure that the /var mount point on the system storing local packages has sufficient disk space to hold all of the custom packages, which are stored in /var/spool/rhn-proxy. The required disk space for local packages depends on the number of custom packages served.

The load on the Apache Web server is directly related to the frequency with which client systems connect to the Satellite Proxy. If the default interval of four hours (or 240 minutes) is reduced, the load on this component increases significantly. This value is set in the /etc/sysconfig/rhn/rhnsd configuration file of each client system.

NOTE

The installation procedure optimizes the caching abilities for the available resources. Provide more memory and disk space prior to installation to increase active caching within Red Hat Satellite Proxy.

2.3. ADDITIONAL REQUIREMENTS

The following additional requirements must be met before the Satellite Proxy installation can be considered complete:
Full Access

Client systems need full network access to the Satellite Proxy services and ports.

Firewall Rules

Red Hat strongly recommends setting up a firewall between the Satellite Proxy and the Internet. However, depending on your Satellite Proxy implementation, you need to open several TCP ports in this firewall:

Table 2.1. Ports to Open on the Satellite Proxy

<table>
<thead>
<tr>
<th>Port</th>
<th>Direction</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>80</td>
<td>Outbound</td>
<td>The Satellite Proxy uses this port to reach your Satellite URL.</td>
</tr>
<tr>
<td>80</td>
<td>Inbound</td>
<td>Client requests arrive using either HTTP or HTTPS.</td>
</tr>
<tr>
<td>443</td>
<td>Inbound</td>
<td>Client requests arrive using either HTTP or HTTPS.</td>
</tr>
<tr>
<td>443</td>
<td>Outbound</td>
<td>The Satellite Proxy uses this port to reach the Satellite URL.</td>
</tr>
<tr>
<td>4545</td>
<td>Outbound</td>
<td>If your Satellite Proxy is connected to a Satellite Server, Monitoring makes connections to <code>rhnmd</code> running on client systems through this TCP port, if Monitoring is enabled and probes are configured to registered systems.</td>
</tr>
<tr>
<td>5222</td>
<td>Inbound</td>
<td>Allows <code>osad</code> client connections to the <code>jabberd</code> daemon on the Satellite Proxy when using Red Hat Network Push technology.</td>
</tr>
<tr>
<td>5269</td>
<td>Inbound and Outbound</td>
<td>If the Satellite Proxy is connected a Satellite Server, this port must be open to allow server-to-server connections using <code>jabberd</code> for Red Hat Network Push Technology.</td>
</tr>
</tbody>
</table>

Synchronized System Times

Time sensitivity is a significant factor when connecting to a Web server running SSL (Secure Sockets Layer); it is imperative the time settings on the clients and server are close together so that the SSL certificate does not expire before or during use. It is recommended that Network Time Protocol (NTP) be used to synchronize the clocks.

Fully Qualified Domain Name (FQDN)

The system upon which the Satellite Proxy is installed must resolve its own FQDN properly.

Distribution Locations

Because the Satellite Proxy forwards virtually all local HTTP requests to Red Hat Satellite, take care in putting files destined for distribution (such as in a kickstart installation tree) in the non-forwarding location on the Satellite Proxy: `/var/www/html/pub/`. Files placed in this directory can be downloaded directly from the Satellite Proxy. This can be especially useful for distributing GPG keys or establishing installation trees for kickstart files.

Bandwidth
Network bandwidth is important for communication among Satellites, Proxies, and Clients. To accommodate high volume traffic, Red Hat recommends a high bandwidth on a network capable of delivering packages to many systems and clients. As a guide, Red Hat provides a set of estimates for package transfer from one system to another over various speeds.

Table 2.2. Bandwidth estimates

<table>
<thead>
<tr>
<th>Speed</th>
<th>Single Package (10Mb)</th>
<th>Minor Release (750Mb)</th>
<th>Major Release (6Gb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>256Kbps</td>
<td>5 Mins 27 Secs</td>
<td>6 Hrs 49 Mins 36 Secs</td>
<td>2 Days 7 Hrs 55 Mins</td>
</tr>
<tr>
<td>512Kbps</td>
<td>2 Mins 43.84 Secs</td>
<td>3 Hrs 24 Mins 48 Secs</td>
<td>1 Day 3 Hrs 57 Mins</td>
</tr>
<tr>
<td>T1 (1.5Mbps)</td>
<td>54.33 Secs</td>
<td>1 Hr 7 Mins 54.78 Secs</td>
<td>9 Hrs 16 Mins 20.57 Secs</td>
</tr>
<tr>
<td>10Mbps</td>
<td>8.39 Secs</td>
<td>10 Mins 29.15 Secs</td>
<td>1 Hr 25 Mins 53.96 Secs</td>
</tr>
<tr>
<td>100Mbps</td>
<td>0.84 Secs</td>
<td>1 Min 2.91 Secs</td>
<td>8 Mins 35.4 Secs</td>
</tr>
<tr>
<td>1000Mbps</td>
<td>0.08 Secs</td>
<td>6.29 Secs</td>
<td>51.54 Secs</td>
</tr>
</tbody>
</table>

Red Hat recommends at least a 100Mbps network speed for minor and major releases. This avoids timeouts for transfers longer than 10 minutes. All speeds are relative to your network setup.

Red Hat recommends that the system running the code should not be publicly available. Only system administrators should have shell access to these machines. All unnecessary services should be disabled. Use `ntsysv` or `chkconfig` to disable services.
CHAPTER 3. INSTALLING RED HAT SATELLITE PROXY

This chapter describes the installation and basic configuration of Red Hat Satellite Proxy Server. It assumes the prerequisites listed in Chapter 2, Requirements have been met. However, if you are upgrading to a later version of Red Hat Satellite Proxy Server, see Chapter 7, Upgrading a Red Hat Proxy Server Installation.

3.1. SUMMARY OF INSTALLATION STEPS

A functional Red Hat Satellite Proxy requires more than installing software. Client systems require configuration, and the Satellite Proxy often requires that custom repositories be set up. This section provides a high-level list of steps.


2. Upload the updated entitlement certificate on your Red Hat Satellite server and synchronize the required channels for Satellite Proxy. See Section 3.3, “Uploading Satellite Proxy Entitlements to Satellite”.

3. Create or provision a new Red Hat Enterprise Linux system for use as the Satellite Proxy host and register it to Satellite. See Section 3.4, “Installing the Operating System on the Satellite Proxy Host”.

4. Install the required packages on the Satellite Proxy host. See Section 3.5, “Installing the Red Hat Satellite Proxy Server Packages”.

5. Run the configure-proxy.sh installation script. See Section 3.6, “Running the Red Hat Satellite Proxy Installation Script”.


3.2. OBTAINING SATELLITE PROXY ENTITLEMENTS

Satellite Proxy Server is a package-based installation through the Satellite server. The first step involves adding the Proxy entitlements to your Satellite server. This requires an updates entitlement certificate, which you generate with the following steps:

1. Navigate to access.redhat.com in your web browser.

2. Log in using your Red Hat customer account details.

3. Navigate to Subscriptions.

4. Scroll to the Manage section and click Subscription Management Applications.

5. Select the Satellite tab.

6. Select the Name of your Satellite.

7. Click the Attach a subscription link and add the subscription containing the RHN Tools for RHEL channel to your entitlement certificate. Use the checkboxes to select the subscription type and use the Quantity dropdown selector to choose the number of subscriptions to add,
which corresponds to the number of proxies to create. Click Attached Selected to add these subscriptions to the entitlement certificate.

8. Click the Download Satellite Certificate and save the entitlement certificate.

The updated certificate now contains entitlements for Red Hat Satellite Proxy. The next section shows how to upload this refreshed certificate to your Satellite server.

### 3.3. UPLOADING SATELLITE PROXY ENTITLEMENTS TO SATELLITE

The next step requires uploading the updating entitlements certificate to your Satellite server, which involves the following steps:

1. Log into your Red Hat Satellite server as an administration user.


3. Click Browse and select the updated certificate file.

4. Synchronize the RHN Tools channel. Log in through SSH to the Satellite server and run the following command as root:

   ```
   [root@satellite ~]# satellite-sync -c rhn-tools-rhel-x86_64-server-6
   ```

5. Once synchronized, add these entitlements to an activation key. Navigate to Systems → Activation Keys and click create new key. Add the base channel for these entitlement, such as Red Hat Enterprise Linux base channel, and select Provisioning and Monitoring entitlements. Click Create Activation Key to complete.

The Satellite server now contains the required entitlements to install the Red Hat Satellite Proxy. The resulting activation key contains these entitlements and is used to register the Proxy host to the required channels.

### 3.4. INSTALLING THE OPERATING SYSTEM ON THE SATELLITE PROXY HOST

Red Hat Satellite Proxy Server is designed to run on the Red Hat Enterprise Linux operating system. The first step is to install the base operating system. See the Red Hat Enterprise Linux 6 Installation Guide [1] for details.

**NOTE**

If you have base channels for Red Hat Enterprise Linux 6 on your Satellite server, you can kickstart the machine to install Red Hat Enterprise Linux 6. See the Red Hat Satellite Getting Started Guide for more information on kickstarts.

During and after the operating system installation process, ensure that you perform the following tasks:

- Allocate sufficient space to the partition used to store packages, according to the hardware requirements prescribed earlier. The default location for cached Red Hat packages is /var/spool/squid; custom packages are located in /var/spool/rhn-proxy.
NOTE

The installation program automatically calculates the available space on the partition where /var/spool/squid is mounted and allocates up to 60 percent of the free space for use by Satellite Proxy.

- Ensure the firewall rules are updated to meet the requirements stated in Section 2.3, “Additional Requirements”. Modify your `iptables` settings and restart the service.

- Install the packages required by Red Hat Satellite Proxy Server.

IMPORTANT

Install only the base Satellite Proxy packages as installing additional packages might cause the Satellite Proxy installation to fail.

See Section 2.1, “Software Requirements” for how to obtain the correct package group needed for each version of Red Hat Enterprise Linux.

- Enable Network Time Protocol (NTP) and select the appropriate time zone on the Satellite Proxy and on all client systems.

After completing the installation of the base operating system, log in to the Satellite Proxy host as the root user and register the system to the Red Hat Satellite Server using the `rhnreg_ks` command. For example:

```
[root@satproxy ~]# rhnreg_ks --serverUrl=http://sat57.example.com/XMLRPC --activationkey=1-123456789abcdef123456789abcdef12
```

3.5. INSTALLING THE RED HAT SATELLITE PROXY SERVER PACKAGES

The following instructions describe the Satellite Proxy installation process:

1. Log in as the root user on the intended Satellite Proxy system.

2. Subscribe the client to the required channels:

   ```
   [root@satproxy ~]# spacewalk-channel --add -c rhn-tools-rhel-x86_64-server-6 --user admin --password adminpassword
   ```

3. Assign a provisioning entitlement to the system:
   b. Click the Satellite Proxy's name.
   c. Click the Properties tab.
   d. Choose Provisioning in the Add-On Entitlements section.
   e. Click Update Properties.
4. Install the Satellite Proxy installation package. This package contains the main script that leads you through the actual Satellite Proxy installation.

   [root@satproxy ~]# yum install spacewalk-proxy-installer

### 3.6. RUNNING THE RED HAT SATELLITE PROXY INSTALLATION SCRIPT

The command-line installation program guides you through the actual Satellite Proxy installation process. This program presents a series of prompts regarding Satellite Proxy installation and initial configuration details, such as installation options and SSL certificate generation. You need root access to the server to perform this step.

**IMPORTANT**

Before you run the installation script, the Satellite Proxy requires the SSL files from your Satellite server. Create the `/root/ssl-build` directory:

   [root@satproxy ~]# mkdir /root/ssl-build

Copy the public certificate and CA certificate from the desired Red Hat Satellite to the new directory:

   [root@satproxy ~]# scp 'root@sat57.example.com:/root/ssl-build/{RHN-ORG-PRIVATE-SSL-KEY,RHN-ORG-TRUSTED-SSL-CERT,rhn-ca-openssl.cnf}' /root/ssl-build

Alternatively, append the `-force-own-ca` option when you run the installation script.

Run the following installation script to install Red Hat Satellite Proxy Server:

   # configure-proxy.sh

**NOTE**

You can press Enter at any prompt to use the default response enclosed in brackets. Alternatively, use the `--non-interactive` option with the installation script if you want to use default answers without any user interaction.

**Gathering Satellite Proxy Server Installation Information**

The installation script requests details about the Satellite Proxy installation specific to the machine where you are performing the installation.

**RHN Parent**

The Satellite Server domain name or address of the system that serves content to the Satellite Proxy.

**CA Chain**

Press Enter to use the default path for the Certificate Authority (CA) Chain.
If the Satellite Proxy is communicating with Red Hat Satellite, then this value is usually 
/usr/share/rhn/RHN-ORG-TRUSTED-SSL-CERT. Otherwise, custom SSL certificates must be 
located in the /usr/share/rhn/ directory.

Satellite Proxy version to activate

Request for confirmation of the version of Satellite Proxy to install.

HTTP Proxy

If the Satellite Proxy server connects through an HTTP proxy, enter the proxy host name and port 
number, for example, corporate.proxy.example.com:3128

Traceback email

A comma-separated list of email addresses to which error-related traceback messages are sent, 
usually the email of the Satellite Proxy administrator.

Use SSL

Press Enter or type y to configure the Satellite Proxy to use SSL.

SSL Certificate

Enter the details necessary to generate a valid SSL server certificate. Example 3.1, “Example 
Generation of an SSL Certificate” demonstrates generating such a certificate.

Example 3.1. Example Generation of an SSL Certificate

Regardless of whether you enabled SSL for the connection to the 
Satellite Proxy Parent 
Server, you will be prompted to generate an SSL certificate. 
This SSL certificate will allow client systems to connect to this 
Satellite Proxy 
securely. See the Satellite Proxy Installation Guide for more 
information. 
Organization: Example Company 
Organization Unit [proxy1.example.com]: 
Common Name: proxy1.example.com 
City: New York 
State: New York 
Country code: US 
Email [admin@example.com]:

The installation script installs multiple sets of packages and will ask for your permission to install 
them. Select Y at each prompt.

3.7. PERFORMING POST-INSTALLATION TASKS

After the main Satellite Proxy installation tasks have been completed, the installation program 
performs a number of additional tasks, such as prompting for installation of monitoring support, 
creating configuration channels, and restarting modified daemons.

Install Monitoring support
You do not have monitoring installed. Do you want to install it? Will run 'yum install spacewalk-proxy-monitoring'. [Y/n]:

Confirm whether or not you want to install Monitoring support on the Satellite Proxy server. This installs the Monitoring packages to the Satellite Proxy.

Configure SSL

The configure-proxy.sh program configures SSL, and prompts you to create a Certificate Authority password and confirm it before generating the SSL keys and the public certificate.

Example 3.2. Example Generation of CA Key and Public Certificate

Generating CA key and public certificate:
CA password: *********
CA password confirmation: *********

Create Configuration Channel

The installation program also requests confirmation that you want to create a configuration channel based on the configuration files created while running configure-proxy.sh.

The installation program creates a Satellite Server configuration channel based on the name of the system (the sysID) where the Satellite Proxy is installed (in the following example, the sysID is 1000010000), and collects the various httpd, SSL, squid, and jabberd server files that will comprise the configuration channel for the Satellite Proxy server.

An example of this configuration is shown in Example 3.3, “Example of Creating a Configuration Channel”.

Example 3.3. Example of Creating a Configuration Channel

Create and populate configuration channel rhn_proxy_config_1000010000? [Y]:
Using server name satellite.example.com
Red Hat Network username: admin
Password:
Creating config channel rhn_proxy_config_1000010000
Config channel rhn_proxy_config_1000010000 created
using server name satserver.example.com
Pushing to channel rhn_proxy_config_1000010001:
Local file /etc/httpd/conf.d/ssl.conf -> remote file /etc/httpd/conf.d/ssl.conf
Local file /etc/rhn/rhn.conf -> remote file /etc/rhn/rhn.conf
Local file /etc/rhn/cluster.ini -> remote file /etc/rhn/cluster.ini
Local file /etc/squid/squid.conf -> remote file /etc/squid/squid.conf
Local file /etc/httpd/conf.d/cobbler-proxy.conf -> remote file /etc/httpd/conf.d/cobbler-proxy.conf
Local file /etc/httpd/conf/httpd.conf -> remote file /etc/httpd/conf/httpd.conf
Local file /etc/jabberd/c2s.xml -> remote file /etc/jabberd/c2s.xml
Local file /etc/jabberd/sm.xml -> remote file /etc/jabberd/sm.xml
Restart services

The final step of the installation process is to restart all of the Satellite Proxy-related services. The installation program exits when this step is completed.

**Example 3.4. Restarting all Satellite Proxy Server-related Services**

- Enabling Satellite Proxy
- Shutting down rhn-proxy...
- Shutting down Jabber router: [OK]
- Stopping httpd: [OK]
- Stopping squid: [OK]
- Done.
- Starting rhn-proxy...
- init_cache_dir /var/spool/squid... Starting squid: . [OK]
- Starting httpd: [OK]
- Starting Jabber services
- Done.

If all services start successfully, the Satellite Proxy installation has been successful.

### 3.8. AUTOMATING SATELLITE PROXY SERVER INSTALLATION

To automate some of the process of installing Satellite Proxy on your systems, the `configure-proxy.sh` script allows administrators to create answer files that contain predetermined responses to prompts in the installation program.

The following is an example answer file that contains predetermined answers related to version number, the Satellite Server that serves as the parent server, SSL, and other configuration parameters. See the `configure-proxy.sh` manual page (`man configure-proxy.sh`) for more information about creating and using answer files.

```
# example of answer file for configure-proxy.sh
# for full list of possible option see
# man configure-proxy.sh

VERSION=5.7
RHN_PARENT=rhn-satellite.example.com
TRACEBACK_EMAIL=jsmith@example.com
USE_SSL=1
SSL_ORG="Red Hat"
SSL_ORGUNIT="Satellite"
SSL_CITY=Raleigh
SSL_STATE=NC
SSL_COUNTRY=US
INSTALL_MONITORING=N
ENABLE_SCOUT=N
CA_CHAIN=/usr/share/rhn/RHN-ORG-TRUSTED-SSL-CERT
POPULATE_CONFIG_CHANNEL=Y
```

Use the `--answer-file` option with the `configure-proxy.sh` script to use an answer file to help automate your Satellite Proxy installation, as shown in the following example. Replace the example `answers_file.txt` file name with the path to your answer file.
# configure-proxy.sh --answer-file=/path/to/answers_file.txt

CHAPTER 4. CUSTOM CHANNEL PACKAGE MANAGER

This is a section on using Red Hat Satellite Proxy with the Custom Channel Package Manager.

4.1. USING THE CUSTOM CHANNEL PACKAGE MANAGER AND SERVING LOCAL PACKAGES THROUGH THE RED HAT NETWORK PROXY

The Custom Channel Package Manager is a command line tool that allows an organization to serve local packages associated with a private Red Hat Satellite channel through the Red Hat Satellite Proxy Server. To update only official Red Hat packages for the Red Hat Satellite Proxy Server, do not install the Custom Channel Package Manager.

To use the Custom Channel Package Manager, install the `spacewalk-proxy-package-manager` package and its dependencies.

Only the header information for packages is uploaded to the Red Hat Satellite Servers. The headers are required so that Red Hat Satellite can resolve package dependencies for the client systems. The actual package files (*.rpm) are stored on the Red Hat Satellite Proxy Server.

The Custom Channel Package Manager uses the same settings as the Proxy, defined in the `/etc/rhn/rhn.conf` configuration file. See the `rhn_package_manager` manual page for more information.

In order for Custom Channel Package Manager to be able to serve the local packages, the following steps need to be followed:

1. Create a private channel.
2. Upload the local packages into the channel.

The steps will be further discussed in the next sections.

4.1.1. Creating a Private Channel

Before local packages can be provided through the Red Hat Satellite Proxy Server, a private channel is needed to store them. Perform the following steps to create a private channel:

1. Log in to your local Red Hat Satellite server in the network.
2. Click Channels on the top navigation bar. If the Manage Channels option is not present in the left navigation bar, ensure that this user has channel editing permissions set. Do this through the Users category accessible through the top navigation bar.
3. In the left navigation bar, click Manage Software Channels and then the create new channel button at the top-right corner of the page.
4. Select a parent channel and base channel architecture, then enter a name, label, summary, and description for the new private channel. The channel label must: be at least six characters long, begin with a letter, and contain only lowercase letters, digits, dashes (-), and periods (.). Also enter the URL of the channel's GPG key. Although this field is not required, it is recommended to enhance security.
5. Click Create Channel.
4.1.2. Uploading Packages

**NOTE**

Only Organization Administrators can upload packages to private Red Hat Satellite channels. The script will prompt you for your Red Hat Satellite credentials.

After creating the private channel, upload the package headers for the binary and source RPMs to the Red Hat Satellite Server and copy the packages to the Red Hat Satellite Proxy Broker Server. To upload the package headers for the binary RPMs, issue the following command:

```
rhn_package_manager -c "label_of_private_channel" pkg-list
```

This command will upload the header of the package to the channel name specified, and the package itself to `/var/spool/rhn-proxy/rhn`.

`pkg-list` is the list of packages to be uploaded. Alternatively, use the `-d` option to specify the local directory that contains the packages to add to the channel. Ensure that the directory contains only the packages to be included and no other files. Custom Channel Package Manager can also read the list of packages from standard input (using `--stdin`).

To upload the package headers for the source RPMs:

```
rhn_package_manager -c "label_of_private_channel" --source pkg-list
```

If you have more than one channel specified (using `-c` or `--channel`), the uploaded package headers will be linked to all the channels listed.

**NOTE**

If a channel name is not specified, the packages are not added to any channel. The packages can then be added to a channel using the Red Hat Satellite web interface. The interface can also be used to modify existing private channels.

After uploading the packages, you can immediately check the Red Hat Satellite Web interface to verify their presence. Click Channels in the top navigation bar, Manage Software Channels in the left navigation bar, and then the name of the custom channel. Then click the Packages subtab. Each RPM should be listed.

Also check to see if the local directory is in sync with the Red Hat Satellite Server's image of the channels at the command line:

```
rhn_package_manager -s -c "label_of_private_channel"
```

The `-s` option will list all the missing packages (packages uploaded to the Red Hat Satellite Server not present in the local directory). You must be an Organization Administrator to use this command. The script will prompt you for your Red Hat Satellite username and password.

If you are using the Custom Channel Package Manager to update local packages, you must go to the Red Hat Satellite website to subscribe the system to the private channel.

4.2. Configuring Proxy Precaching
Your Proxy server can precache or mirror RPM files. This means that RPM files are delivered directly from the Proxy server to the clients; the clients do not have to wait for the files to download from the Satellite server to the Proxy server, and then be delivered to the client. The Proxy server recognizes RPM requests from `yum` as well as `anaconda` (for kickstart installations and provisioning). See the `rhn_package_manager` manual page for more information.

Proxy precaching is especially useful if the network connection to the Satellite server is slow or if bandwidth is at a premium. You can use the `rhn_package_manager` command to manually load RPM files into the Proxy server’s cache, or you can create a `cron` job that uses the `rsync` command to perform the task automatically.

**NOTE**

Using the Proxy server precache feature requires that disk space be available at all times for the required RPM files. Unlike a non-precached Proxy server, where only requested RPM files exist, and only until they expire, precached RPM files remain indefinitely on the Proxy server whether they are used or not.

### 4.2.1. Manually Loading RPM Files into the Proxy Cache

Satellite Proxy and `rhn_package_manager` have been updated to avoid unwanted cache collisions. You can use the existing `rhn_package_manager --copyonly` command to populate the cache; (an alias to that option has been added with the more user-friendly name `--cache-locally`). Another significant change to `rhn_package_manager` is that it can now read and import packages from a channel export, which could for example be created on the Satellite server using the `rhn-satellite-exporter` utility. This is in addition to the other methods that `rhn_package_manager` can use to import RPM files, such as the `--dir` option for importing all RPM files in a directory, or a list of RPM files supplied on the command line.

The following example demonstrates how to cache only the RPM files that exist in the `my-channel-1` channel, using a channel export from the Satellite server. This export contains all the channels from the Satellite server, and is mounted on `/mnt/export`:

```bash
# rhn_package_manager --cache-locally --from-export /mnt/export --channel my-channel-1
```

To import all the RPM files from all channels that the export contains, omit the `--channel` option:

```bash
# rhn_package_manager --cache-locally --from-export /mnt/export
```

If the channel export is spread across multiple ISO images it is not necessary to combine them locally on the Proxy before running the `rhn_package_manager` command. Mount the images one at a time and run the same command on each.

### 4.2.2. Automatically Loading RPM Files into the Proxy Cache

Populating the initial clone may be convenient and fast through a channel export or directory that contains RPM files, but it is inconvenient to have to create a new channel export or directory containing new RPM files every time the Satellite server is updated with new content. You can set up a `cron` job or similar with an `rsync` command to download any updated RPM files to the Proxy cache. This assumes that you want to download *all* of the RPM files on the Satellite server to the Proxy. You need to run the `cron` job and `rsync` command as root on the Proxy server, but can then log in to the Satellite server as any user that has read access to the RPM store; this should be all users.
Configuring SSH Key Pairs to Enable Automatic Connection to the Satellite

You need to set up SSH key pairs that enable the root user on the Proxy server to establish an SSH connection to $user on the Satellite server, without typing a password.

**IMPORTANT**

This method requires that the private key does not have a password. Ensure that you keep this key safe.

Run the following command as root on the Proxy server:

```
ssh-keygen -t rsa -N '' -f /root/.ssh/id_dsa \
& & cat /root/.ssh/id_dsa.pub | ssh user@satellite.example.com 'cat >> .ssh/authorized_keys'
```

Enter the password for user when prompted. You should now be able to create an SSH connection to your Satellite server, without typing a password:

```
# ssh user@satellite.example.com
```

Setting up Automatic Synchronization

You now need to add a cron job with an appropriate rsync command. For example, as root on the Proxy:

```
crontab -e
1 3 * * * /usr/bin/rsync -r 
user@satellite.example.com:/var/satellite/redhat/* /var/spool/rhn-proxy/rhn
# write and quit with :wq
```

This configuration runs the rsync command at 3:01 a.m. every day and downloads any RPM files that are on the Satellite server into the Proxy cache. The /var/satellite directory is the default Satellite root directory, but this is configurable. If you have changed it on your Satellite installation then adjust this command appropriately.
CHAPTER 5. CONFIGURING SATELLITE PROXY TO USE CNAME RECORDS

One of the features of Red Hat Satellite Proxy is the ability to take advantage of CNAME records, or aliases, instead of the canonical host name. This feature is useful if there are network issues that prevent communication with Red Hat Satellite Proxy using its normal host name or configuration.

5.1. PREREQUISITES

To use CNAME records with your Red Hat Satellite Proxy Server installation, you need to:

- Ensure that the required CNAME records have been configured for the server.
- Add the CNAME records to the Satellite Proxy server configuration.
- Create a new multi-host certificate and install it on the Satellite Proxy.

5.2. ADDING CNAME RECORDS TO THE SATELLITE PROXY SERVER CONFIGURATION

This section describes how to add your Satellite Proxy server's CNAME records to the Satellite Proxy server configuration, and have those CNAMEs recognized as valid options within the Satellite Proxy web interface.

**NOTE**

This document does not cover how to set up DNS CNAME records for the machine where your Satellite Proxy server is installed. Contact your system or DNS administrator to ensure the required CNAME records are correctly set up.

Procedure 5.1. To Configure Your Satellite Proxy Server to Use CNAME Records:

1. Determine the system ID of your proxy server. You can find this value in the `/etc/sysconfig/rhn/systemid` file on your proxy server. Locate the following stanza in this file (your system ID will be different from this example):

   ```
   <member>
   <name>system_id</name>
   <value><string>ID-1036997498</string></value>
   </member>
   ```

   The system ID is contained within `<string>` tags. Do not include "ID-" as part of the actual system ID.

2. Add the following line to the `/etc/rhn/rhn.conf` file. Replace `systemID` with the value from the previous step:

   ```
   valid_cnames_systemID= cname1,cname2,cname3
   ```

3. Run the following command to restart the Tomcat service:

   ```
   # service rhn-proxy restart
   ```
After the Tomcat service has restarted, refresh the Satellite Proxy server web interface and you should see the CNAMEs listed on the Hardware tab of the System Details page.

Before you can use these CNAMEs, however, you need to create a new set of certificates, and configure the Satellite Proxy to use these certificates. This is because the original certificate is only valid for the canonical host name; you need to create new certificates that are valid for each CNAME. This is covered in Section 5.3, “Generating and Using Multi-host SSL Certificates”.

### 5.3. GENERATING AND USING MULTI-HOST SSL CERTIFICATES

You need to generate multi-host SSL certificates to take advantage of the ability to use CNAME records on the Satellite Proxy server. You also need to update the `rhn-ca-openssl.cnf` file to ensure that the Satellite Proxy server is aware of and uses these certificates.

**Procedure 5.2. To Update the SSL Configuration File to use Multi-host Certificates:**

1. Edit the `/root/ssl-build/rhn-ca-openssl.cnf` file and locate the `[CA_default]` section.
2. Ensure the entry `copy_extensions = copy` exists and is not commented out.
3. Save and close the file.

**IMPORTANT**

You need to complete the above step before you run `configure-proxy.sh` with `SSL_CNAME` set, or the installation will fail.

You also need to update your `answers` file so that the Satellite Proxy configuration will use the new SSL certificates created previously.

**Procedure 5.3. To Update the Answers File to Use Multi-host SSL Certificates:**

1. Edit the `answers.txt` file that you created for the initial Satellite Proxy installation. If you did not create such a file, you can find an example setup in `/usr/share/doc/spacewalk-setup-<version>/answers.txt`.
2. Ensure the following line exists, and is not commented out:

   ```
   SSL_CNAME = (cname01 cname02 cname03)
   ```

3. Run the `configure-proxy.sh` script with the `--answer-file` option to generate the multi-host SSL certificate. For example:

   ```
   # configure-proxy.sh --answer-file=/path/to/answers.txt
   ```

**NOTE**

You can run the `configure-proxy.sh` script multiple times to test or update configurations, as required.
CHAPTER 6. LOAD BALANCING SATELLITE PROXY SERVERS

Some environments include a load balancer between Satellite clients and Satellite proxies to distribute the load of Satellite requests, or to help redirect requests to a location closer to the originating client. If the Satellite Proxy topology becomes more complex, includes CNAME support, chaining, and so on, it is helpful to test the HTTP header requests exchanged between load balancers and round-robin proxy chains. This chapter describes configuring Squid as a reverse proxy to perform round-robin requests between two Satellite proxies. It covers the set up procedure and how to support both non-SSL and SSL proxy requests.

The following environment in this example would use five different hosts:

- Red Hat Satellite Proxy A, signified with IP address 192.168.100.16 and hostname proxya.example.com
- Red Hat Satellite Proxy B, signified with IP address 192.168.100.17 and hostname proxyb.example.com
- Load Balancer, signified with hostname lb.example.com
- Red Hat Satellite Server with Red Hat Satellite Proxy A and B connected
- The client machine, signified with IP address 192.168.100.19

6.1. INSTALLING PROXY SERVICES TO THE LOAD BALANCER

The Load Balancer requires some of the same services as the Red Hat Satellite Proxy. Use the following commands to install and configure these services:

```
# yum install spacewalk-proxy-installer -y
# configure-proxy.sh
```

**IMPORTANT**

Register your Load Balancer to the Red Hat Satellite 5 server and subscribe to the rhn-tools-rhel-x86_64-server-6 channel to access the spacewalk-proxy-installer package.

When the installation completes, uninstall the httpd package and its dependencies.

```
# yum remove httpd -y
```

This readies the server for configuring the load balancing services.

6.2. INSTALLING A SQUID REVERSE PROXY

Install a Squid server to use as the load balancer by using reverse proxy mode.

```
# yum install squid
```
You also need to generate SSL certificates and sign them with the Satellite CA. The easiest method is to use the `rhn-ssl-tool` on the Satellite server to generate the server certificates, because the CA is already available.

The Satellite SSL Maintenance Tool (rhn-ssl-tool) generates and maintains Satellite SSL keys and certificates. It also generates RPMs for use in deploying these keys and certificates. The tool is geared for use in a Satellite context, but can be useful outside of Satellite too.

In this example, the load balancer is called `lb.example.com`; substitute the host name that applies to your deployment, and enter a suitable build directory. Run this command on the Satellite server.

```bash
$ rhn-ssl-tool --gen-server --set-hostname=lb.example.com -d /root/ssl-build
```

The `rhn-ssl-tool` used above creates SSL files for `lb.example.com` and saves the files in `/root/ssl-build` directory. Copy the `server.crt`, `server.key`, and the `RHN-ORG-TRUSTED-SSL-CERT` CA certificate from the `dhcp` directory to the `lb.example.com` load balancer. These files are used to set up SSL for the actual load balancer. The `RHN-ORG-TRUSTED-SSL-CERT` certificate allows SSL communication between the load balancer and the proxies.

Modify the `/etc/squid/squid.conf` file on the `lb.example.com` server to set up reverse proxy mode:

```plaintext
# Example 6.1. Setting up Reverse Proxy Mode
#
# SSL configuration
#
# Ensure you enter each configuration directive on a single line

acl is_ssl port 443
https_port 443 cert=/etc/pki/tls/certs/lb.crt
key=/etc/pki/tls/certs/lb.key accel vhost name=proxy_ssl

cache_peer proxya.example.com parent 443 0 no-query originserver round-robin ssl name=proxya.example.com sslcafile=/etc/pki/tls/certs/squid-ca.crt

cache_peer proxyb.example.com parent 443 0 no-query originserver round-robin ssl name=proxyb.example.com sslcafile=/etc/pki/tls/certs/squid-ca.crt

cache_peer_access proxya.example.com allow is_ssl
cache_peer_access proxya.example.com deny !is_ssl
cache_peer_access proxyb.example.com allow is_ssl
cache_peer_access proxyb.example.com deny !is_ssl

http_access allow is_ssl
#
# Non-SSL configuration
#
```
# Ensure you enter each configuration directive on a single line

cache_peer 192.168.100.16 parent 80 0 no-query name=proxy_nonssl

The previous example demonstrates setting up two reverse proxies. Port 443 has two proxies that are used in round-robin mode. Requests are shared equally between the two proxies. The server.crt and server.key files were renamed to lb.crt and lb.key respectively (short for load balancer) for easier identification. The Satellite CA certificate was renamed to squid-ca.crt; the cache_peer sslcafile option refers to this file.

Add the certificates to the squid group:

```
# chgrp squid /etc/pki/tls/certs/{lb.crt,lb.key,squid-ca.crt}
```

The file details should appear as follows:

```
-rw-r--r--. 1 root squid   5450 Aug 23 21:23 lb.crt
-rw-r--r--. 1 root squid   1675 Aug 23 21:23 lb.key
-rw-r--r--. 1 root squid   5363 Aug 22 14:19 squid-ca.crt
```

All traffic on port 80 is redirected to one proxy and defaults to the dhcp16.example.com proxy using the defaultsite directive. Acls are set up similar to the ssl port.

The sslpassword_program directive allows you to send the SSL key passphrase (if used; displayed for completeness) to squid on startup without human intervention. The contents of password.out is a bash script that echos the SSL passphrase. The forwarded_for directive configures the load balancer to send the forwarded_for headers to the proxies.
IMPORTANT

Edit the /etc/squid/squid.conf and comment out the default port, 3128, that squid normally listens on:

```bash
# Squid normally listens to port 3128
# http_port 3128
```

Restart squid after config modifications:

```bash
# service squid restart
```

6.3. SETTING UP THE CLIENT

You need to modify the /etc/sysconfig/rhn/up2date file on the client to correctly address the load balancer:

```bash
serverURL[comment]=Remote server URL (use FQDN)
serverURL=https://lb.example.com/XMLRPC
```

The load balancer uses the Satellite CA certificate for its signed SSL certificate; you do not need to modify the client CA certificate values.

6.4. TESTING THE CONFIGURATION

This section discusses basic testing of your load balancer and proxy configuration.

Initial Testing

Start the load balancer and the proxy machines. Note that the Satellite Proxy logs will not be created until the first requests are delivered (/var/log/rhn/). Try to install and remove an RPM file, such as zsh.

The /var/log/squid/access.log file on the load balancer should contain information similar to the following:

```
1377540630.159 97 192.168.100.19 TCP_MISS/200 1515 POST https://lb.example.com/XMLRPC - ROUNDROBIN_PARENT/proxya.example.com text/base64
1377540630.733 529 192.168.100.19 TCP_MISS/200 1409 POST https://lb.example.com/XMLRPC - ROUNDROBIN_PARENT/proxyb.example.com text/xml
1377540639.968 87 192.168.100.19 TCP_MISS/200 3742 POST https://lb.example.com/XMLRPC - ROUNDROBIN_PARENT/proxya.example.com text/xml
1377540644.273 83 192.168.100.19 TCP_MEM_HIT/200 2238956 GET https://lb.example.com/XMLRPC/GET-REQ/rhel-x86_64-server-6/getPackage/zsh-4.3.10-5.el6.x86_64.rpm - NONE/- application/octet-stream
1377540646.765 100 192.168.100.19 TCP_MISS/200 1515 POST https://lb.example.com/XMLRPC - ROUNDROBIN_PARENT/proxyb.example.com text/base64
```
This example shows that the client requests are balanced between the two different proxies. A single yum package install is still shared between the multiple proxies because multiple requests are involved during a package installation. The client IP address is 192.168.100.19 and you can see the named proxya.example.com and proxyb.example.com cache peers corresponding to the two different Satellite Proxies.

**Squid Load Balancer Log Files**

Refer to the following log files to monitor load balancer activity:

- `/var/log/squid/access.log` for watching requests arriving from the client

- `/var/log/squid/cache.log` for debugging SSL startup issues and cache peers on ports 80 and 443

You can use the `netstat` command to ensure that the squid load balancer is listening on the correct ports:

```
# netstat -tulpn | grep squid | grep tcp

tcp      0      0       :::80          :::*           LISTEN
29120/(squid)

tcp      0      0       :::443         :::*           LISTEN
29120/(squid)
```
CHAPTER 7. UPGRADING A RED HAT PROXY SERVER INSTALLATION

This chapter describes how to upgrade your Proxy Server installation. These instructions assume that you have a fully functional Proxy Server and its required entitlements.

7.1. PREREQUISITES

The latest version of Red Hat Satellite Proxy Server requires:

- Red Hat Enterprise Linux 6 (64-bit only).
- Removal of the previous Proxy server's system profile from the parent Satellite server.

7.2. UPGRADING YOUR PROXY INSTALLATION

1. Back up your existing Proxy server. If applicable, restore the SSL build directory from the backup to the directory `/root/ssl-build`.

2. Register the Proxy to the parent Satellite. Make sure that the Proxy is subscribed to both the Red Hat Enterprise Linux Server base channel and the Red Hat Network Tools child channel.

3. Install the `spacewalk-proxy-installer` package from the Red Hat Network Tools child channel:

   ```
   # yum install spacewalk-proxy-installer
   ```

4. Install the latest version of Proxy, as documented in Section 3.5, “Installing the Red Hat Satellite Proxy Server Packages”.

   **NOTE**

   If the Proxy server is registered to Red Hat Satellite, and the Proxy previously managed custom channels, restore the custom package repository from the pre-upgrade backup. The permissions and ownership will also need to be set up properly.

   ```
   # chmod 0750 /var/spool/rhn-proxy
   # chown apache:apache /var/spool/rhn-proxy
   # mkdir -m 0750 -p /var/spool/rhn-proxy/list
   # chown apache:apache /var/spool/rhn-proxy/list
   ```

   The default custom package repository is usually `/var/spool/rhn-proxy`.

5. After the installation, update the server to the latest errata updates:

   ```
   # yum update
   ```

6. Restart the Proxy Server services and test the Proxy Server's functionality:

   ```
   # /usr/sbin/rhn-proxy restart
   ```
APPENDIX A. SAMPLE SATELLITE PROXY SERVER CONFIGURATION FILE

The /etc/rhn/rhn.conf configuration file for the Satellite Proxy provides a means for administrators to establish key settings. Take care when making any changes, however, because any configuration errors in this file may cause Satellite Proxy failures.

Pay close attention to the traceback_mail and proxy.rhn_parent parameters. Review the sample and its comments (comments are identified by a hash mark (#) in column 1), for additional details.

IMPORTANT

You can add the use_ssl option to rhn.conf for testing purposes. Set its value to 0 to turn off SSL between the Satellite Proxy and the Satellite server. Be aware that this greatly compromises security. Reset this option to its default value of 1 to re-enable SSL, or remove the line from the configuration file.

# Automatically generated RHN Management Proxy Server configuration file.
# --------------------------------------------------------------------

# SSL CA certificate location
proxy.ca_chain = /usr/share/rhn/RHNS-CA-CERT

# Corporate HTTP proxy, format: corp_gateway.example.com:8080
proxy.http_proxy =

# Password for that corporate HTTP proxy
proxy.http_proxy_password =

# Username for that corporate HTTP proxy
proxy.http_proxy_username =

# Location of locally built, custom packages
proxy.pkg_dir = /var/spool/rhn-proxy

# Hostname of RHN Server or RHN Satellite
proxy.rhn_parent = rhn.redhat.com

# Destination of all tracebacks, etc.
traceback_mail = user0@domain.com, user1@domain.com
APPENDIX B. GLOSSARY OF TERMS

To better understand Red Hat Satellite Proxy, it is important to become familiar with the following Red Hat Satellite terms:

Channel
A channel is a list of software packages. There are two types of channels: base channels and child channels. A base channel consists of a list of packages based on a specific architecture and Red Hat release. A child channel is a channel associated with a base channel that contains extra packages.

Organization Administrator
An Organization Administrator is a user role with the highest level of control over an organization's Red Hat Satellite account. Members with this role can add and remove other users, other systems, and system groups to the organization. Each Red Hat Satellite organization requires at least one Organization Administrator.

Channel Administrator
A Channel Administrator is a user role with full access to channel management capabilities. Channel Administrators can create channels and assign packages to channels. Organization Administrators can use the Users tab on the Red Hat Satellite website to assign this role to other users.

Red Hat Update Agent
The Red Hat Update Agent is the client application that allows users to retrieve and install new or updated packages on the client system.

Traceback
A traceback is a detailed error description that is useful for troubleshooting the Satellite Proxy. Traceback files are automatically generated when a critical error occurs, and they are then emailed to the individuals designated in the Satellite Proxy's configuration file.

See the Red Hat Reference Guide and the Help page on the Satellite Web user interface for more information.
## APPENDIX C. REVISION HISTORY

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<th>Date</th>
<th>Author</th>
<th>Description</th>
</tr>
</thead>
<tbody>
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<td>Tue Sep 15 2015</td>
<td>Dan Macpherson</td>
<td>Added extra step to load balancing content</td>
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<td>Revision 4-13</td>
<td>Thu Aug 20 2015</td>
<td>Dan Macpherson</td>
<td>Mass publication of all Satellite 5.7 books</td>
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<td>Revision 4-12</td>
<td>Mon Aug 17 2015</td>
<td>Dan Macpherson</td>
<td>Adding extra SSL directives for load balancing</td>
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<td>Revision 4-11</td>
<td>Tue Aug 11 2015</td>
<td>Dan Macpherson</td>
<td>Shortening IDs</td>
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<td>Removing redundant channel for installation</td>
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<td>Correcting proxy hostnames</td>
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<td>Revision 4-10</td>
<td>Wed May 27 2015</td>
<td>Dan Macpherson</td>
<td>Minor revisions</td>
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<td>Revision 4-9</td>
<td>Mon Apr 20 2015</td>
<td>Dan Macpherson</td>
<td>Fixing typo in load balancing section</td>
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<td>Revision 4-8</td>
<td>Thu Feb 19 2015</td>
<td>Dan Macpherson</td>
<td>Removing unnecessary channel</td>
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<td>Revision 4-7</td>
<td>Tue Feb 17 2015</td>
<td>Dan Macpherson</td>
<td>Minor Maintenance updates</td>
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<td>Revision 4-6</td>
<td>Tue Feb 3 2015</td>
<td>Dan Macpherson</td>
<td>Pushing maintenance update for Satellite 5.7</td>
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<td>Revision 4-5</td>
<td>Wed Jan 7 2015</td>
<td>Dan Macpherson</td>
<td>Packaging snapshot versions</td>
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<td>Revision 4-4</td>
<td>Thu Jan 1 2015</td>
<td>Dan Macpherson</td>
<td>Release Candidate for Satellite 5.7</td>
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<td>Revision 4-3</td>
<td>Mon Dec 8 2014</td>
<td>Dan Macpherson</td>
<td>Preparing books for technical review</td>
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<td>Revision 4-2</td>
<td>Wed Dec 3 2014</td>
<td>Dan Macpherson</td>
<td>Completed major revision of the book and tested end-to-end installation workflow</td>
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<td>Revision 4-1</td>
<td>Fri Nov 21 2014</td>
<td>Dan Macpherson</td>
<td>Revised Software Requirements section</td>
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<td>Revision 4-0</td>
<td>Mon Nov 3 2014</td>
<td>David O'Brien</td>
<td>Add section &quot;Summary of Steps&quot; to cover Proxy installation.</td>
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<td>BZ 1155876 - Fix incorrect and inconsistent units for h/w requirements.</td>
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<td>BZ 1154963 - Add chapter on Proxy precache.</td>
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<td>BZ 1112093 - Update list of supported hypervisors.</td>
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<td>BZ 1145826 - iptables settings incorrect for proxy.</td>
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<td>Revision 3-23</td>
<td>Fri Sep 27 2013</td>
<td>Dan Macpherson</td>
<td>Final version of documentation suite</td>
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<td>Revision 3-22</td>
<td>Thu Sep 12 2013</td>
<td>Dan Macpherson</td>
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<td>Author</td>
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<td>3-21</td>
<td>Wed Sep 11 2013</td>
<td>Dan Macpherson</td>
<td>Implemented QE feedback for BZ#1001363</td>
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<td>3-20</td>
<td>Wed Sep 11 2013</td>
<td>Dan Macpherson</td>
<td>Added initial steps for Proxy Installation as per BZ#1001360</td>
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<td>3-19</td>
<td>Wed Sep 11 2013</td>
<td>Dan Macpherson</td>
<td>Change to Product and BookID</td>
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<td>3-18</td>
<td>Wed Sep 11 2013</td>
<td>Dan Macpherson</td>
<td>Updating requirements</td>
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<td>3-17</td>
<td>Tue Sep 10 2013</td>
<td>Dan Macpherson</td>
<td>Revised Subtitle, Abstract and Preface for all Guides</td>
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<td>3-16</td>
<td>Thu Aug 29 2013</td>
<td>Dan Macpherson</td>
<td>First implementation of QE Review feedback</td>
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<tr>
<td>3-15</td>
<td>Sun Jul 28 2013</td>
<td>Dan Macpherson</td>
<td>Removing references to Red Hat Network usage of Proxy as per Technical Review</td>
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<td>3-14</td>
<td>Sun Jul 28 2013</td>
<td>Dan Macpherson</td>
<td>Second implementation of tech review feedback</td>
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<td>3-13</td>
<td>Wed Jul 24 2013</td>
<td>Dan Macpherson</td>
<td>Corrections for BZ#987245</td>
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<td>Tue Jul 23 2013</td>
<td>Dan Macpherson</td>
<td>First implementation of tech review feedback</td>
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<td>3-11</td>
<td>Fri Jul 12 2013</td>
<td>Dan Macpherson</td>
<td>Final beta updates</td>
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<td>3-10</td>
<td>Fri Jul 12 2013</td>
<td>Dan Macpherson</td>
<td>Beta documentation update</td>
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<td>3-8</td>
<td>Thu Jul 11 2013</td>
<td>Dan Macpherson</td>
<td>Beta documentation creation</td>
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<td>3-7</td>
<td>Thu Jul 11 2013</td>
<td>Megan Lewis</td>
<td>Updated preface. Updated section on base installation.</td>
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<td>3-5</td>
<td>Wed Sep 19 2012</td>
<td>Dan Macpherson</td>
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## Final packaging for 5.5

### Revision 3-4  
**Wed Jul 4 2012**  
Prepared for 5.5 release  
Technical review changes incorporated  
**BZ#491007** Added Chapter on Upgrade Install  

### Revision 3-0  
**Wed Jul 4 2012**  
Prepared for 5.5 release  
Technical review changes incorporated  
**BZ#491007** Added Chapter on Upgrade Install  

### Revision 2-5  
**Thu Jan 5 2012**  
**Lana Brindley**  
**BZ#682996** - Installation chapter - Update instructions  
**BZ#705755** - Package manager chapter - Additional info  
**BZ#722193** - Requirements chapter - Fixed error  
**BZ#729617** - Installation chapter - Fixed error  
**BZ#729663** - Installation chapter - Added admonition  

### Revision 2-4  
**Mon Aug 15 2011**  
**Lana Brindley**  
Folded z-stream release into y-stream  

### Revision 2-3  
**Wed Jun 22 2011**  
**Lana Brindley**  
**BZ#713527** - Added RHEL 6 references  

### Revision 2-2  
**Wed Jun 15 2011**  
**Lana Brindley**  
Prepared for publication  

### Revision 2-1  
**Fri May 27 2011**  
**Lana Brindley**  
Updates from translators  

### Revision 2-0  
**Fri May 6 2011**  
**Lana Brindley**  
Prepared for translation  

### Revision 1-9  
**Wed April 27 2011**  
**Lana Brindley**  
**BZ#653844** - QE Review  

### Revision 1-8  
**Mon Feb 7 2011**  
**Lana Brindley**  
**BZ#646176** - Installation