Red Hat Network Satellite 5.0.0: Virtualization Step-by-Step

By Máirín Duffy, Red Hat Network Engineering

Abstract

Red Hat Network Satellite 5.0 is the first Satellite release to include virtual platform management capabilities. This guide will help you make the most of these new capabilities, guiding you step-by-step through setting up your Satellite and virtual host systems as well as creating and managing virtual systems with Satellite.

June 2007

Table of Contents

Requirements

Hardware

For your Satellite (if you chose the embedded database option):

- Pentium IV processor, 2.4GHz, 512K cache or equivalent
- 2 GB of memory (4GB recommended)
- 3 GB storage for base install of Red Hat Enterprise Linux AS
- ~6 GB storage per channel in the /var/satellite/ directory
- 12 GB storage for the database repository, in the /rhnsat partition (local storage only)

For your Satellite (if you chose the stand-alone database option):

- Pentium IV processor, 2.4GHz, 512K cache or equivalent
- 2 GB of memory (4GB recommended)
- 3 GB storage for base install of Red Hat Enterprise Linux AS
- ~6 GB storage per channel in the /var/satellite/ directory
- Strongly recommended: a separate partition or set of physical disks for storing backup, an external SAN for more reliable backups, and/or a SCSI drive connected to a level 5 RAID

For your virtual host system:

- X86, AMD64, or Intel(R) EMT64T processor, 1.0GHz (If using an x86-based processor, you'll need PAE Support. To check for it, run 'cat /proc/cpuinfo' and look for the 'PAE' flag under 'flags')
- 512 MB of memory for the host operating system
- 256 MB of additional memory per guest system
- 2 GB storage for the host operating system
- 2 GB additional storage per guest system

Software

For your Satellite:

- Red Hat Enterprise Linux AS 4 for 32-bit x86, minimal ('@Base') install
- Red Hat Network Satellite 5.0

For your virtual host system:

One of any of the following:

- Red Hat Enterprise Linux 5
- Red Hat Enterprise Linux 5 Advanced Platform
- Red Hat Enterprise Linux 5 Desktop with Multi-OS option

For your virtual guest system(s):

Any variant of Red Hat Enterprise Linux 5.

Entitlements

For your Satellite:

- 1 Red Hat Enterprise Linux AS 4 software channel entitlement (for installing your Satellite)
- 1 Red Hat Network Satellite 5.0 software channel entitlement
- 1 RHN Satellite 5.0 Entitlement Certificate (contact your sales representative or Red Hat Support)

For your virtual host and guest systems:

- 1 Red Hat Enterprise Linux 5 software channel entitlement (for host and guests, to be applied to the virtual host system.)

> **Note:** The software channel entitlement for the host system must match the version of Red Hat Enterprise Linux installed on the host system. For example, if you have installed Red Hat Enterprise Linux 5 Desktop with Multi-OS on the system intended to be your virtual host, you must have an entitlement for that same variant of the OS available.

- 1 Red Hat Network Management system-level entitlement (for host and guests, to be applied to the virtual host system.)
- 1 Red Hat Network Virtualization or Virtualization Platform system-level entitlement (for host and guests, to be applied to the virtual host system.)

Setting Up Your RHN 5.0.0 Satellite

Step 1: Install Red Hat Enterprise Linux 4 AS

Install a fresh copy of Red Hat Enterprise Linux 4 AS on the system you have designated for your Satellite. Please install only a minimal install (the '@Base' package group) when provisioning this system. For more details, please refer to the *Red Hat Enterprise Linux 4 Installation Guide* (available at http://www.redhat.com/docs/manuals/enterprise/.)

> **NOTE:**
>
> We strongly recommend a fresh @Base install of Red Hat Enterprise Linux 4 for the best experience. If you attempt to install Satellite 5.0 on a system that has packages beyond the @Base ('minimal' in the interactive installer) package group installed, the Satellite installer may encounter package conflicts.
>
> However, if you would prefer to install Red Hat Network Satellite 5.0 on a pre-existing Red Hat Enterprise Linux 4 AS system, you may skip this step and move on to the next step.

Step 2: Install Red Hat Network Satellite 5.0.0

Install the Red Hat Network Satellite 5.0.0 on your newly-installed Red Hat Enterprise Linux 4 AS system. Please refer to the *Red Hat Network Satellite 5.0 README* document for more details.

(The README is available in the top-level directory in the ISO image for the *Red Hat Network Satellite 5.0.0.* Log into the account on rhn.redhat.com that you used to purchase Satellite, navigate to **Channels > Download Software**, and click on the 'Red Hat Network Satellite (v. 5.0 for AS v4 $ARCH' (where $ARCH is your Satellite system's $ARCH), and download the ISO from the link provided. Then, mount the ISO by following the instructions in the following Red Hat Knowledgebase Article: http://kbase.redhat.com/faq/FAQ_80_4633.shtm.)

> **NOTE:**
>
> If you chose to install Satellite 5.0.0 on a pre-existing RHEL 4 AS system and there are package conflicts, you can expect the Satellite installer to fail and point you to a log file located at /var/log/rhn-installation.log. The following steps should allow you to successfully install RHN Satellite 5.0.0

in this situation:

1. Examine the log file at /**var/log/rhn-installation.log** to determine what packages on your Red Hat Enterprise Linux 4 AS system are causing package conflicts with Satellite 5.0.0.

2. Use the '**rpm -e $PACKAGE_NAME**' command to remove the conflicting packages identified in step 1, replacing $PACKAGE_NAME with a list of conflicting packages to remove separated by spaces.

3. Run Satellite installation program again.

You may need to run through these three steps several times before you have identified and removed all of the conflicting packages.

Step 3: Configure Satellite

As part of the installation process, you should have configured the General, Certificate, and Bootstrap features of your Satellite. If you did not, or if you wish to re-configure these features, select 'Satellite Tools' from the top navigation bar, followed by 'Satellite Configuration' from the left navigation bar. Review the resulting tabs to ensure the following configuration options are selected:

Certificate

> You can upload a copy of your certificate here, but it is not necessary.

Bootstrap Script

> If you wish to experiment with the bootstrap script for your Red Hat Enterprise Linux 5 clients, be sure to enable SSL, remote configuration, and remote commands.

Restart

> Once you have selected the correct configuration options, you must restart the Red Hat Network Satellite 5.0.0. Select the 'Restart Satellite?' check box and press the 'Restart' button.

Step 4: Synchronize Software Channel Content To Satellite

In order to manage and provision your client systems, you must first synchronize content from RHN's central servers to your Satellite.

We recommend that you sync at least the following channels, where $ARCH is a hardware architecture compatible with the host system:

- Red Hat Network Tools for RHEL Server (v. 5 for $ARCH): **rhn-tools-rhel-$ARCH-server-5**

OR

Red Hat Network Tools for RHEL Client (v. 5 for $ARCH): **rhn-tools-rhel-$ARCH-client-5**

- Red Hat Enterprise Linux (v. 5 for 32-bit x86): rhel-$ARCH-server-5

OR

Red Hat Enterprise Linux Desktop (v. 5 for 32-bit x86): **rhel-$ARCH-client-5**

- Red Hat Enterprise Linux Server Virtualization (v. 5 for 32-bit x86): rhel-i386-server-vt-5 (and all child channels)

OR

Red Hat Enterprise Linux Desktop Multi-OS (v. 5 for 32-bit x86): **rhel-$ARCH-client-vt-5**

To sync the above channels, login to the Satellite as root and issue the 'satellite-sync' command. Here is an example for a 32-bit Red Hat Enterprise Linux 5 system:

```
satellite-sync –c rhn–tools–rhel–i386–server–5 –c \
rhel–i386–server–5 –c rhel–i386–server–vt–5
```

TIP

We recommend that you run satellite-sync in a screen session on your Satellite. The screen package is available in Red Hat Enterprise Linux. For more information on using screen, please refer to http://kbase.redhat.com/faq/FAQ_73_5747.shtm

---

To first see what channels are available, you may enter the following command as root:

```
satellite-sync –l
```

TIP:

The Satellite Server Installation Guide contains a thorough discussion of satellite-sync. It can be found at: http://www.redhat.com/docs/manuals/satellite/Red_Hat_Network_Satellite-5.0.0/html/Installation_Guide/

NOTE:

We used 32-bit software channels in the software channel syncing example above, so you'll need to modify the examples provided in that guide in order to have 64-bit software channel content available on your satellite as well.

Use the 'satellite-sync -l' command to determine the channel labels for the channels for your architecture.

Setting Up the Host System for Your Virtual Systems

Step 1: Create a Kickstart Profile for the Host System

1) Log into your newly-configured Satellite's web interface at https://your-satellite.example.com/. Navigate to the Kickstart Overview screen by clicking the 'Manage Kickstarts' link in the 'Tasks' widget in Your RHN, or by clicking on Systems (top nav bar) > Kickstart (left nav bar).

2) On the Kickstart Overview page, click the 'Create a New Kickstart Profile' link in the 'Kickstart Actions' widget in the upper right corner.

3) Now you should find yourself on Step 1 of the kickstart profile creation process:

1. Please enter the following label for the profile: 'host-system-for-virtual-systems'.
2. For the 'Base Channel' field, you should select the 'Red Hat Enterprise Linux (v.5 for $ARCH)' where $ARCH is a hardware architecture compatible with your host system.
3. For the 'Kickstartable Tree' field, you should select 'ks-rhel-$ARCH-server-5' where $ARCH is the architecture of your host system.
4. Please select 'Para-Virtualized Host' for the 'Virtualization Type' field.
5. Finally, click the 'Next' button in the lower right of the screen to continue on to the next step.

NOTE:

If any of the fields are missing the options indicated above, you may not have successfully synced software channel content to your Satellite from Red Hat's servers. Please review the *Red Hat Network Satellite 5.0.0 Guide* for information on syncing software content to your Satellite.

4) For Step 2 of the kickstart profile creation process, you'll need to select the location of the distribution files for the installation of your host system. There should already be a 'Default Download Location' filled out and selected for you on this screen. You may simply click the Next button on this screen to continue to Step 3.

> **NOTE:**
>
> As in the previous step, if the default download location is missing, you may not have successfully synced software channel content to your Satellite from Red Hat's servers. Please review the *Red Hat Network Satellite 5.0.0 Guide* for information on syncing software content to your Satellite.

5) For step 3 of the kickstart profile creation process, please choose a root password to set on the host system you'll be provisioning, and click next to finish creation of the profile.

6) You've successfully created a kickstart profile for a host system - after completing step 3 you should be taken to the newly-created kickstart profile. You may browse through the various tabs of the profile and modify the settings as you see fit, but this is not necessary as the default settings should work well for the majority of cases.

Step 2: Kickstart Your Host System

Next, you'll need to kickstart your host system using your newly-created kickstart profile. There are three different scenarios for kickstarting your host system. Please read through these three scenarios below, and follow the instructions for the scenario that applies best to you:

Scenario 1: Your Host System Already Has Red Hat Enterprise Linux Installed

You may register your host system to your Satellite and schedule the kickstart process via the Satellite's web interface.

1) First, let's register your host system to your Satellite. Use ssh to connect to your host system. Register your host system to your satellite issuing the following command as root:

```
rhnreg_ks --serverUrl=http://your-
satellite.example.com/XMLRPC --username=username --
password=password
```

> **NOTE:**
>
> If your host system is already registered to a different Red Hat Network server, you'll need to add '--force' to the command above.

2) Next, open up the host system's profile in the Satellite web interface. Log into the web interface of your Satellite at https://your-satellite.example.com/. Click on the 'Systems' tab in the top red navigational bar. You should see the host system you just registered – click on its profile name to access its system profile page.

3) Add a provisioning entitlement to your host system. From your host system's profile page, click on Details > Properties tab. Check the 'Provisioning' check box in the 'Add-On Entitlements' field, and click the 'Update Properties' button in the lower right-hand corner of the screen.

4) Now, let's schedule the kickstart. You'll be brought back to the host system's profile page. You should now see a 'Provisioning' tab in the system profile. Click on this tab. This should bring up the 'Schedule Kickstart' page for the system.

5) Select the kickstart profile we created for this host earlier. If you followed 'Step 1: Create a Kickstart Profile for the Host System' you should see a profile with the name 'host-system-for-virtual-systems.' Select this profile. Then, select the 'Schedule Kickstart and Finish' button in the lower right-hand corner of the screen.

NOTE:

If you do not see the 'host-system-for-virtual-systems' kickstart profile on the host system's 'Schedule Kickstart' page, you may have either:

1. Provided a different label for this kickstart profile during 'Step 1: Create a Kickstart Profile for the Host System.' In this case, simply select the label you did provide during that step on this screen.

OR

2. Created a kickstart profile for an architecture that does not match the architecture of the host system you have registered. If this is the case, pull up the kickstart profile by navigating to **Systems > Kickstart > Profiles** within the Satellite web interface, and clicking on the label for the host system's kickstart profile. Click on the **Kickstart Details > Operating System** tab, and select items under the 'Base Channel' and 'Available Trees' selections that match the architecture of your host system. Click the 'Update Kickstart' button in the lower right-hand corner of the screen, and navigate back to the host system's 'Schedule Kickstart' page, following the steps above this note.

6) After scheduling the kickstart, you'll be taken to a Kickstart Status screen in the Satellite's web interface. You'll want to keep your web browser open to that page to follow along with the host system's progress.

7) Use ssh to connect to the host system, and run the command 'rhn_check'. This should cause the kickstart process to begin immediately rather than the next time the rhn_check process runs on the system. You should immediately see output indicating the start of a kickstart process on the host system, and it will eventually warn you that the system is going down for reboot in 3 minutes.

8) After 3 minutes have passed, the system will reboot and you'll need to follow the progress of the kickstart via the Satellite web interface.

9) Depending on various factors, the kickstart process may take between 10-30 minutes. At the end of this time period the Satellite kickstart status page should indicate whether that the kickstart finished successfully.

TIP:

If the kickstart fails, the Satellite kickstart status page should indicate that there was a failure. For more details on why the kickstart failed, click on the Events > History tab in the host system's profile, and click on the name of kickstart event that failed to get more details on the failure. It may also be useful to consult /var/log/up2date and /var/log/xen/xend.log on the host system for troubleshooting purposes.

Scenario 2: Your host system does not have Red Hat Enterprise Linux Installed

You'll need to create a boot CD to initiate the kickstart on your host system. You'll be able to use the kickstart profile we created in earlier steps to provision the host. Note you must have physical access to the machine you intend to use in order to follow these steps:

1) You'll find an ISO to create a boot CD for your host by using ssh to log into your Satellite. It is at the following location on your Satellite (replace 'i386' with the appropriate architecture as needed):

```
/var/satellite/rhn/kickstart/ks-rhel-i386-server-
5/images/boot.iso
```

For details on how to use this ISO image to burn a CD using Linux, please refer to the following Red Hat Knowledgebase Article:

http://kbase.redhat.com/faq/FAQ_80_446.shtm

If you must burn this ISO image to CD using Windows or another operating system, please refer to the following Knowledgebase Article:

http://kbase.redhat.com/faq/FAQ_35_1897.shtm

> **TIP**
>
> It is possible to use a flash-memory USB key to boot your system in order to kickstart it. Refer to the *Red Hat Enterprise Linux 5 Installation Guide (http://www.redhat.com/docs/manuals/enterprise/RHEL-5-manual/Installation_Guide-en-US/ch02s04.html#s2-steps-make-cd)* for tips on how to do this. Note that your host system's hardware must support booting via these devices.

2) Insert the CD-ROM, using the following command at the boot: prompt:

```
linux ks=http://your-
satellite.example.com/kickstart/ks/label/host-system-for-
virtual-systems
```

> **TIP**
>
> The *Red Hat Enterprise Linux 5 Installation Guide (http://www.redhat.com/docs/manuals/enterprise/RHEL-5-manual/Installation_Guide-en-US/s1-kickstart2-startinginstall.html)* lists the complete set of options available for the above command.

Scenario 3: Your host system has Red Hat Enterprise Linux Server Already Installed

You should register your host system to your Satellite and check to see if the required xen packages are installed on the system. If they are not, we'll install them using the Satellite.

1) First, let's register your host system to your Satellite. Use ssh to connect to your host system. Register your host system to your satellite issuing the following command as root:

```
rhnreg_ks --serverUrl=http://your-
satellite.example.com/XMLRPC --username=username --
```

```
password=password
```

2) Next, open up the host system's profile in the Satellite web interface. Log into the web interface of your Satellite at https://your-satellite.example.com/. Click on the 'Systems' tab in the top red navigational bar. You should see the host system you just registered – click on its profile name to access its system profile page.

3) Now let's make sure your system has access to the software channels it needs to access the software required for hosting virtual guests. From your host system's profile page, click on the 'Alter Channel Subscriptions' link in the upper right side of the profile page under the 'Subscribed Channels' header. Check the 'RHEL Virtualization' and 'Red Hat Network Tools for RHEL Server' check boxes and click the 'Change Subscriptions' button underneath the list of channels.

4) Now, let's check to see if you have the necessary software installed for hosting virtual guests on the system. On the host system, issue the following command as root:

```
rpm -q xen kernel-xen rhn-virtualization-host
```

If rpm indicates these packages are not installed, you will need to install them by running the following command as root on the system:

```
yum install xen kernel-xen rhn-virtualization-host
```

You will then need to reboot the system, booting it into the xen kernel.

The system should automatically boot into the xen kernel on reboot, but if you'd like to make sure it has for troubleshooting purposes, use the command 'uname -r' to see if the running kernel is a xen kernel. If you do not see the 'xen' string in the name of the kernel, you haven't booted into the correct kernel.

NOTE:

> If the system already has xen and kernel-xen installed, you do not need to reboot after installing rhn-virtualization-host.

5) You will also need to install and run the osad package in order for your host system to be responsive to commands sent from the Satellite, such as start, pause, resume, and shutdown. To install:

```
yum install y osad
```

After installation you should then start the osad process:

```
/sbin/service osad restart
```

6) Your host system should now be ready for RHN virtual guest provisioning.

Setting Up Your Virtual Guest Systems

Step 1: Create a Kickstart Profile for the Guest Systems

1) Log on to the Satellite's web interface. Navigate to the Kickstart Overview screen by clicking the 'Manage Kickstarts' link in the 'Tasks' widget in Your RHN, or by clicking on Systems (top nav bar) > Kickstart (left nav bar).

2) On the Kickstart Overview page, click the 'Create a New Kickstart Profile' link in the 'Kickstart Actions' widget in the upper right corner.

3) Now you should find yourself on Step 1 of the kickstart profile creation process:

1. Please enter the following label for the profile: 'guest-system'.
2. For the 'Base Channel' field, you should select the 'Red Hat Enterprise Linux $PRODUCT (v.5 for $ARCH)' where $ARCH is the architecture of your **host** system and $PRODUCT is either blank for the server product and 'Desktop' for the Desktop product. Satellite 5.0 only supports Enterprise Linux 5 Server or Desktop guests.

> **NOTE:**
>
> Red Hat Enterprise Linux Desktop 5 may not be available for selection if you did not sync the Desktop software channels to your Satellite. Please review the *Red Hat Network Satellite 5.0 Guide* for information on syncing software content to your Satellite.

3. For the 'Kickstartable Tree' field, you should select 'ks-rhel-$ARCH-$PRODUCT-5' where $ARCH is the architecture of your host system and $PRODUCT is either 'server' or 'client', depending on which product you'd like to provision your guest with.
4. Please select 'Para-Virtualized Guest' for the 'Virtualization Type' field.
5. Finally, click the 'Next' button in the lower right of the screen to continue on to the next step.

4) For Step 2 of the kickstart profile creation process, you'll need to select the location of the distribution files for the installation of your guest system. There should already be a 'Default Download Location' filled out and selected for you on this screen. You may simply click the Next button on this screen to continue to Step 3.

> **NOTE:**
>
> As in the previous step, if the default download location is missing, you may not have successfully synched software channel content to your Satellite from Red Hat's servers. Please review the *Red Hat Network Satellite 5.0 Guide* for information on synching software content to your Satellite.

5) For step 3 of the kickstart profile creation process, please choose a root password to set on the guest system you'll be provisioning, and click next to finish creation of the profile.

6) You've successfully created a kickstart profile for a guest system - after completing step 3 you should be taken to the profile. You may browse through the various tabs of the profile and modify the settings as you see fit, but this is not necessary as the default settings should work well for the majority of cases.

> **NOTE:**
>
> While the **System Details > Troubleshooting** tab in the kickstart profile indicates that 'lilo' is a possible bootloader for your kickstart, this is not a valid option. The 'lilo' package is no longer available in Red Hat Enterprise Linux 5. This is a known bug and will be fixed in a future release of Red Hat Network Satellite.

Step 2: Provision Your Guest Systems

1) Log into the Satellite's web interface. Browse to your host system's profile by clicking on the 'Systems' tab in the top navigation bar, and click on the

system's name.

2) Let's schedule a kickstart for a guest system. Go to the **Virtualization > Provisioning** tab in the host system's profile. For the 'Guest Name' field choose 'guest1'. For the 'Memory Allocation', 'Virtual CPUs', and 'Storage' fields, the default values should be fine but feel free to tweak these as desired, taking note of the advice provided for each field in the interface. For the 'Kickstart Profile' field, select the 'guest-system' profile we created in the last step.

> **NOTE:**
>
> You will see the following message at the top of the Virtualization Provisioning screen: 'Virtual Host has a pending kickstart scheduled.'
>
> This is a known bug in Satellite and will be fixed in a later release. It will have no effect on your successfully completing the steps outlined here.

3) Finally, click on the 'Schedule Kickstart and Finish' button in the lower-right corner of the screen. You'll be taken to the 'Kickstart Status' page where you can follow along with the guest's kickstart progress. After 10-15 minutes, the status screen should indicate the kickstart successfully completed. To view your new guest, click on the 'Virtualization' tab of the host system's profile on the Satellite. To view a list of virtual host systems indicating which guest systems are hosted on each, navigate to **Systems > Systems > Virtual Systems**.

> **NOTE:**
>
> If you do not see the 'Initiate a kickstart for a Xen guest' message on the Kickstart Status page shortly after scheduling the kickstart of the guest, you may be missing osad on your host.
>
> Host systems require the osad package in order to be responsive to commands sent from the Satellite, such as start, pause, resume, and shutdown. If osad is not installed and running, the host system will not receive these commands from the web interface for 2.5 hours, or the next time that the RHN daemon runs.
>
> You can check whether or not osad is installing and running by checking the 'OSA Status' field in the host system's profile on the Satellite. If the field does not exist or indicates a failure or that the system has not contacted Satellite in several minutes, then you will need to install ('yum install -y

osad') and/or start the osad process ('/sbin/service osad restart') before you can successfully provision a guest on the host.

TIP:

You may receive the following message from the Kickstart Status page during the guest's kickstart:

The install process on the guest system has not communicated to RHN in the past n minutes. This may be due to a hung install process, or it may just be due to a slow install because of hardware constraints. A log of the installation process is available, you may wish to review it to troubleshoot this issue.

Be patient and do not worry if you see this message unless more than 20 minutes have passed. To check if the kickstart is continuing, check the installation log to make sure there are no errors, and as you reload the Kickstart Status page check to see that the 'Last File Request' field continues to be updated.

4) If you'd like to register additional guests to your host, repeat the steps above. Here's an important point to remember, though: you may only provision one guest at a time. If you attempt to schedule a guest kickstart while another is currently taking place, the current guest kickstart process will be canceled and the new guest kickstart process will begin.

5) View your newly-created virtual guest's system in Satellite's web interface by clicking on the 'Virtualization' tab in the host system's profile. Then, click on the profile name of your virtual system. You'll be brought to its Satellite system profile.

Working With Your Virtual Systems

Logging Into Virtual Systems

Logging Into Virtual Systems Directly via SSH

1) You'll need to locate the virtual system's IP. Locate it by navigating to the **Systems > Virtual Systems** tab and clicking on the virtual system's profile name.

2) On the virtual system's profile page, you'll find the IP address in the left-hand informational column in the 'IP Address' item.

3) Connect to the IP address by using ssh as root, using the password you set for the virtual system in the kickstart profile you created for it earlier.

Gaining Console Access Via the Host

1) First you'll need to connect to the host system and determine the ID number of the guest you'd like to work with. Connect to the host system via ssh and run the following command:

```
xm list
```

This should provide you with a list all of the guests you created on your satellite, including their ID number. Look for the guest, 'guest1', that we created earlier in this list. Let's say for example that it has been assigned an ID of 2 (this ID may vary on your host system.)

2) Run the following command to access the console of this virtual system:

```
xm console 2
```

You should immediately be able to view a login prompt on guest1.

3) Now, log in to guest1 as root using the same password you set in the kickstart profile you used to provision the system.

(There may be some messages on the screen. In this case, hit the enter key on your keyboard to receive a fresh login prompt.)

4) To exit the guest console and return to the host system's command prompt, you may hit the 'Ctrl' and ']' keys on your keyboard simultaneously.

Installing Software On a Virtual System via Satellite

Installing Software Via the Satellite Web Interface

1) Browse to the virtual system's profile in your Satellite's web interface by logging in and navigating to **Systems > Systems > Virtual Systems** and clicking on the name of your virtual system's profile.

2) In the virtual system's profile, click on the **Software > Packages Tab**.

3) Click on 'Install New Packages' in the Packages tab menu.

4) Select the packages you wish to install and click the 'Install Selected Packages' button in the lower right-hand corner of the screen.

5) Review the package install details and click on the 'Confirm' button in the lower right-hand corner of the screen.

6) The package install will take place the next time the guest system checks in with the Satellite. To force the install to take place immediately, you may run the 'rhn_check' command on the guest system.

Installing Software Via Yum From the Virtual System

Your virtual system registered to your Satellite as part of the guest provisioning process, so you may simply use the 'yum' command to install and update software. For example, to install the text editor vim, issue the following command:

```
yum install -y vim-enhanced
```

Deleting Virtual Systems

Deleting a virtual system is a multi-step process.

1) First you must shut down the virtual system which you wish to delete. You may do this by browsing to the host system's profile in the Satellite web interface, clicking on the virtualization tab, and checking off the virtual system's which you would like to delete. Finish shutting down by clicking the 'Shutdown Systems' button at the bottom of the screen.

2) Next you must delete the virtual system from Satellite. This is accomplished by checking off the virtual system's check box and clicking the 'Delete Systems' button at the bottom of the screen.

TIP:

Please allow for at least two minutes between shutting down a system and deleting it. Otherwise, the virtual system may not shut down properly and you will delete it while it is running. If you delete a virtual system from Satellite while it is running, it will reappear on the Satellite the next time it checks in. If this happens, simply shutdown the system, wait two minutes, and delete it again.

---

3) Now you will need to delete the disk image for the virtual system you would like to delete. You will find the disk image for guest1, for example, at the following location on the host system:

```
/var/lib/xen/disk-images/guest1.disk
```

Delete it with the following command:

```
rm /var/lib/xen/disk-images/guest1.disk
```

4) Finally, you must delete the RHN configuration files from the host system. To locate the RHN configuration file for guest1, run the following command:

```
grep guest1 /etc/sysconfig/rhn/virt/*.xml
```

Then delete the file indicated. For example:

```
rm
/etc/sysconfig/rhn/virt/14e5cfbf72342515236ad74b260c2f6b.x
ml
```

5) You have successfully deleted a guest system from your host system and from Satellite.

Conclusion

Thank You!

The Red Hat Network Satellite team would like to thank you for choosing Red Hat Network Satellite. We hope you will enjoy using it and that it will help you simplify your systems management processes. We encourage you to participate in our 108 community (details below) and send us any feedback and suggestions you may have on the product.

Getting Help

Red Hat Support

You may get official Red Hat support for Red Hat Network Satellite from the Red Hat Support site:

http://www.redhat.com/support

Red Hat Network & Satellite 108 Community

Satellite also has an open, public community on the Red Hat 108 site where you can discuss and exchange tips, tricks, and scripts for making the most out of Satellite and/or Red Hat Network with other Satellite users and developers.The Red Hat Network and Satellite 108 community is located at:

http://rhn-satellite.108.redhat.com/

The public mailing list for questions, discussion, and feedback for Satellite is available as part of the RHN/Satellite 108 community:

- **rhn-satellite-users@redhat.com** – Sign up at: https://www.redhat.com/mailman/listinfo/rhn-satellite-users

Appendix – Useful Documentation

Red Hat Network Satellite

RHN Satellite Server 5.0 Release Notes
http://www.redhat.com/docs/manuals/satellite/Red_Hat_Network_Satellite-5.0.0/html/Release_Notes/Release_Notes.html

RHN Satellite Server 5.0 Installation Guide
http://www.redhat.com/docs/manuals/satellite/Red_Hat_Network_Satellite-5.0.0/html/Installation_Guide/index.html

RHN Channel Management Guide
https://rhn.redhat.com/rhn/help/channel-mgmt/

Red Hat Network 5.0 Reference Guide
http://www.redhat.com/docs/manuals/satellite/Red_Hat_Network_Satellite-5.0.0/html/Reference_Guide/index.html

Red Hat Enterprise Linux 4

Red Hat Enterprise Linux 4 Installation Guides
http://www.redhat.com/docs/manuals/enterprise/

Red Hat Enterprise Linux 4 System Administration Guide
http://www.redhat.com/docs/manuals/enterprise/RHEL-4-Manual/en-US/System_Administration_Guide/

Red Hat Enterprise Linux 5

Red Hat Enterprise Linux 5 Installation Guide
http://www.redhat.com/docs/manuals/enterprise/RHEL-5-manual/Installation_Guide-en-US/index.html

Red Hat Enterprise Linux 5 Virtualization Guide
http://www.redhat.com/docs/manuals/enterprise/RHEL-5-manual/Virtualization-en-US/index.html

Red Hat Enterprise Linux 5 Virtual Server Administration Guide
http://www.redhat.com/docs/manuals/enterprise/RHEL-5-manual/Virtual_Server_Administration/index.html

Other Red Hat Resources

Red Hat Knowledgebase
http://kbase.redhat.com