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Red Hat Network Satellite

Power User Tips and Tricks

Thomas Cameron, RHCA
Managing Solutions Architect, Red Hat
June 24th, 2010

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Agenda

Red Hat and RHN Satellite

- Spacewalk

Assumptions

There is a method to the madness!

Setting up configuration file management

- Example of advanced use cases including configuration file macros

Setting up System Groups

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Agenda

Channel cloning

Creating channels "locked" at a certain update

Custom channels for third party or internally developed content

Using activation keys for highly flexible group assignment, configuration file deployment, and pre-installation and post-installation software provisioning

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Agenda

Setting up kickstart profiles to perform automated installations

- Example of advanced kickstart options like partitioning and activation keys

Setting up a DHCP/PXE/tftp environment to enable automated installations

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Red Hat and RHN Satellite

RHN Satellite is the best-in-breed systems management platform for Red Hat products.

Mature, robust product with hundreds of thousands of servers under management at customers in practically every vertical you can imagine.

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Red Hat and RHN Satellite

As Fedora is the upstream, community project for Red Hat Enterprise Linux, Spacewalk is the upstream, community project for RHN Satellite.

<http://www.redhat.com/spacewalk/>



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Assumptions

You are already familiar with RHN Satellite/Fedora Spacewalk

- This is **not** an introduction, I will be moving rather quickly.

When I talk about the Navigation Bar, I mean the tabs at the top of the screen:



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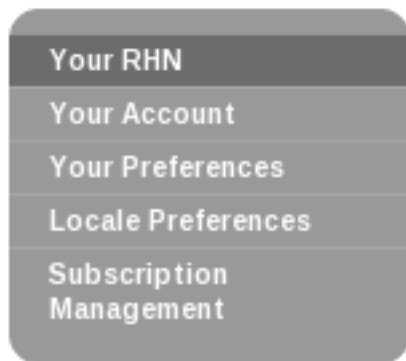
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Assumptions

When I talk about the left navigation bar, I mean the gray box at the left of the screen:



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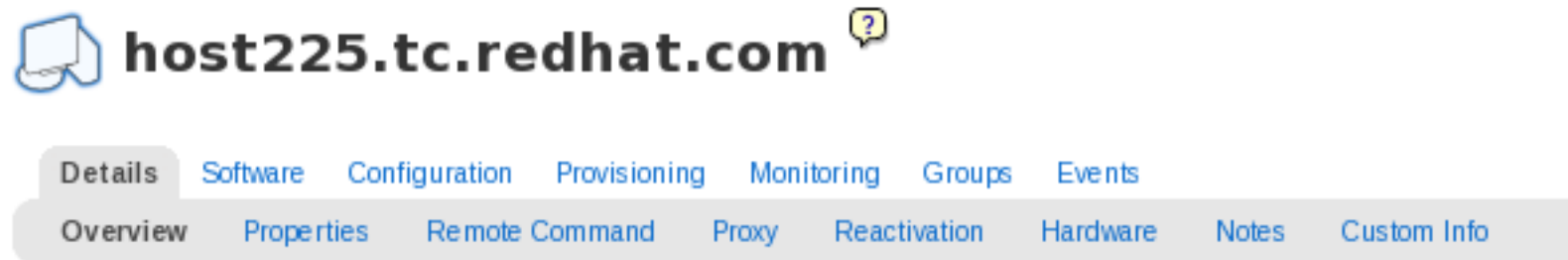
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Assumptions

When I talk about sub-tabs, I am talking about the tabs in the middle of each page:



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There is a method to the madness!

Well, ok, maybe... :-)



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There is a method to the madness!

We're going to lay the foundation to making kickstart work really well

- Minimize human interaction/error
- Decrease deployment time/time to market

Bear with me as I show you how to set up some prerequisite components which will make kickstart fly!

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Configuration File Management

Go to the configuration tab at the top of the page, then
Configuration Channels on the left nav bar.

Click on “create new config channel”

Fill out the required information

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English (change)

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Systems

[Overview](#) [Systems](#) [Errata](#) [Channels](#) **[Configuration](#)** [Schedule](#) [Users](#) [Monitoring](#) [Admin](#) [Help](#)

NO SYSTEMS SELECTED

[Overview](#)
[Configuration Channels](#)
[Configuration Files](#)
[Systems](#)

Configuration Overview

The list below shows all of the configuration files that are managed by your organization in RHN Satellite. This list includes files that are managed centrally in configuration channels and files that are managed locally via individual system profiles.

Configuration Summary

Systems with Managed Configuration Files:	0 systems
Configuration Channels:	0 channels
Centrally-managed Configuration Files:	0 files
Locally-managed Configuration Files:	0 files

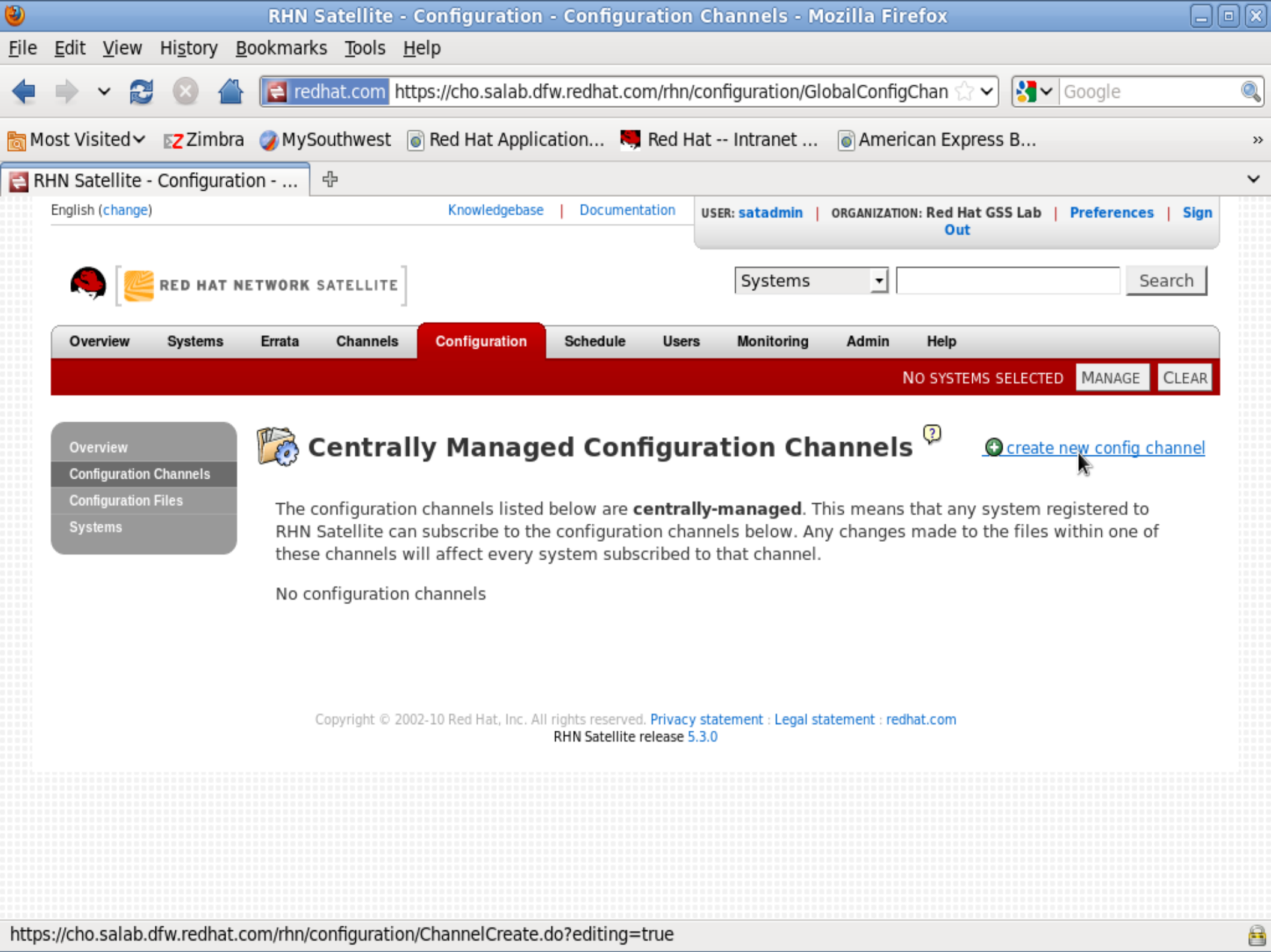
Configuration Actions

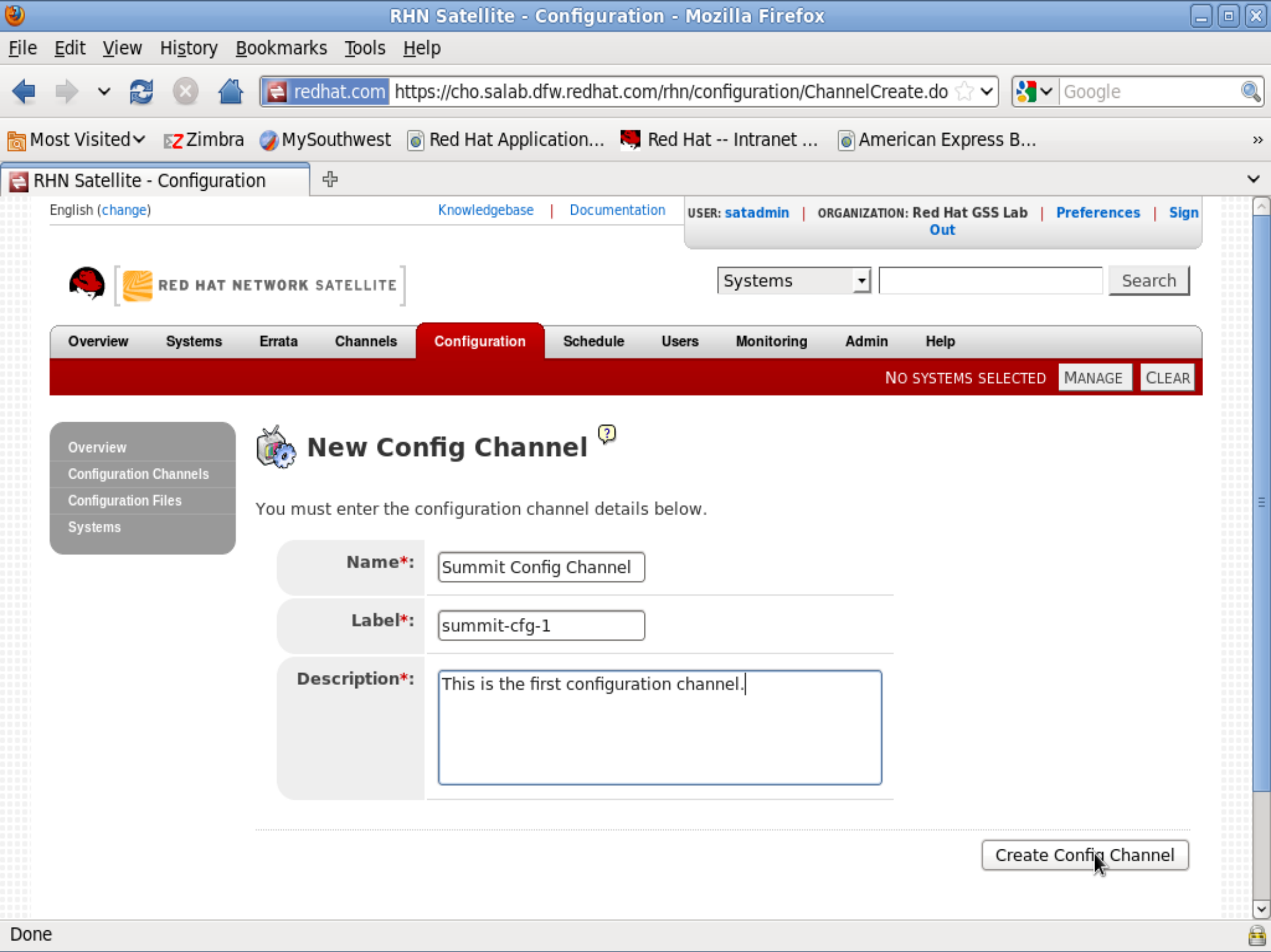
- [View Systems with Managed Configuration Files](#)
- [View All Managed Configuration Files](#)
- [View All Managed Configuration Channels](#)
- [Create a New Configuration Channel](#)
- [Enable Configuration Management on Systems](#)

Recently Modified Configuration Files:

No configuration files.

Recently Scheduled Configuration File Deployments:





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Systems

Search

[Overview](#)[Systems](#)[Errata](#)[Channels](#)**[Configuration](#)**[Schedule](#)[Users](#)[Monitoring](#)[Admin](#)[Help](#)

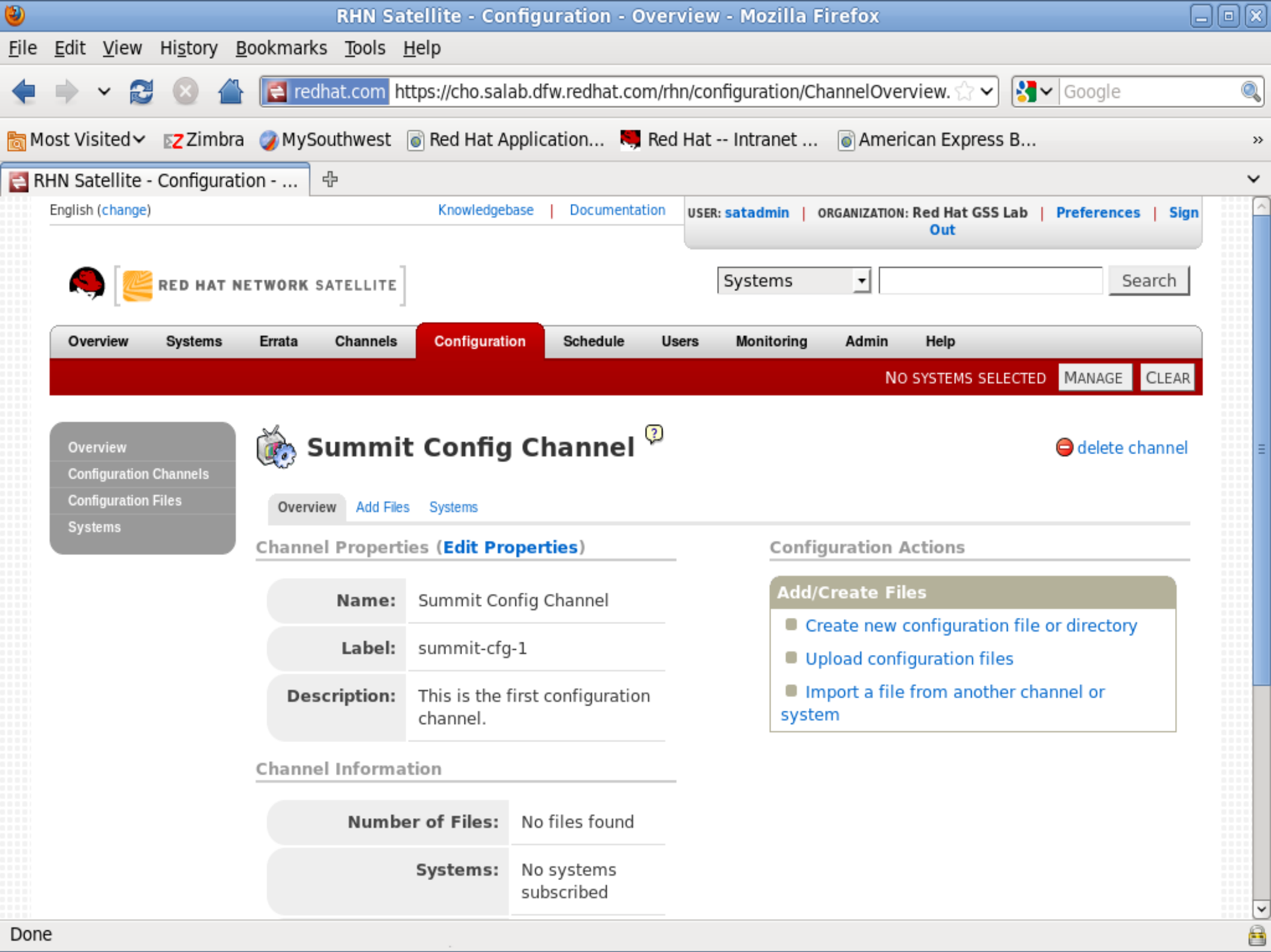
NO SYSTEMS SELECTED

[MANAGE](#)[CLEAR](#)[Overview](#)[Configuration Channels](#)[Configuration Files](#)[Systems](#)

New Config Channel

You must enter the configuration channel details below.

Name*:**Label*:****Description*:**[Create Config Channel](#)



Configuration File Management

Click “Add Files” in the sub-tabs

Upload, import or create a file in the sub-tab

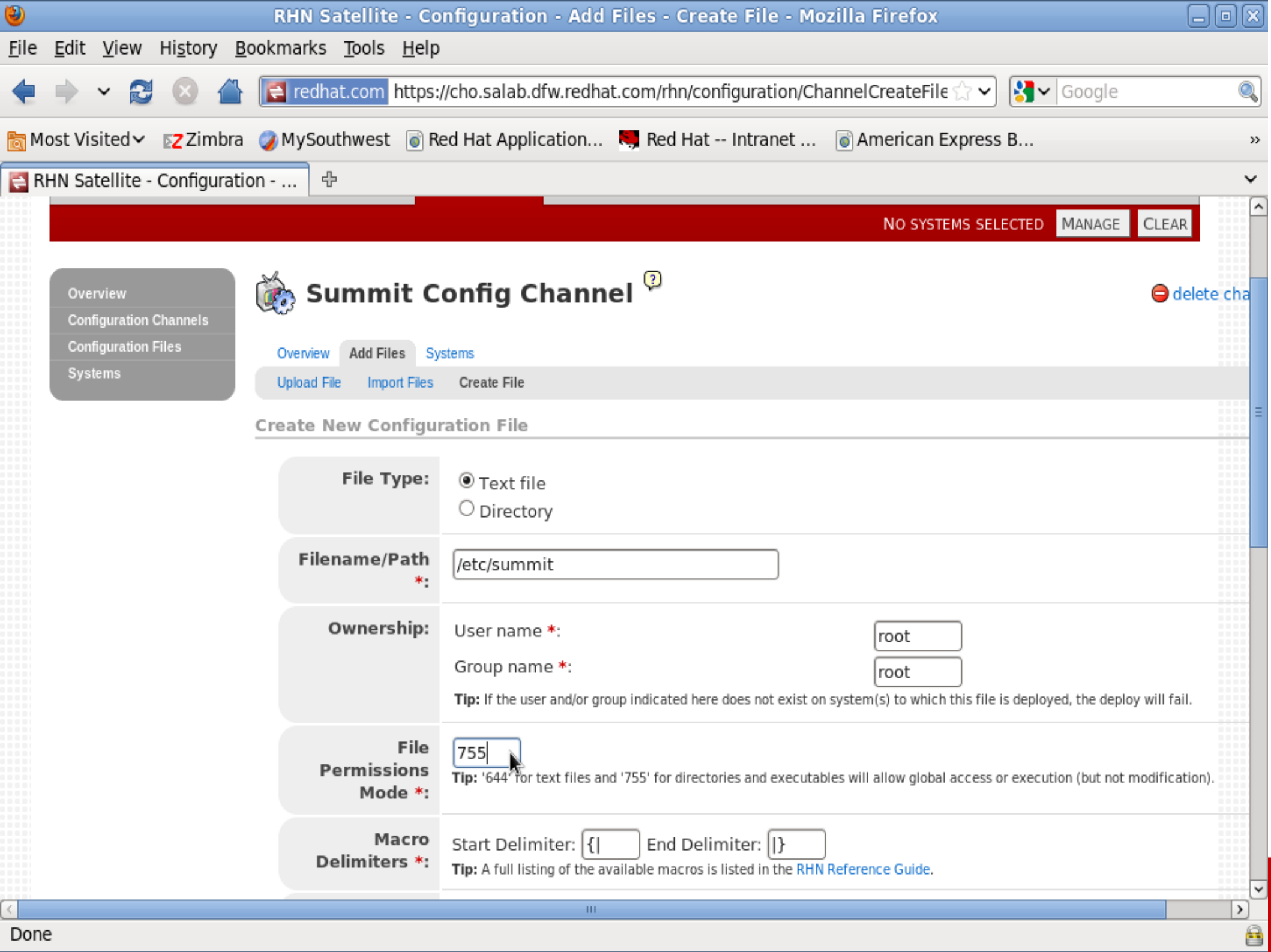
- In this example, I'll create a new directory called /etc/summit owned by root:root and with permissions rwxr-xr-x

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NO SYSTEMS SELECTED [MANAGE](#) [CLEAR](#)

Overview

Configuration Channels

Configuration Files

Systems



Summit Config Channel

[delete cha](#)[Overview](#)[Add Files](#)[Systems](#)[Upload File](#)[Import Files](#)[Create File](#)

Create New Configuration File

File Type:

☒ Text file☐ Directory

Filename/Path

*

Ownership:

User name *

Group name *

Tip: If the user and/or group indicated here does not exist on system(s) to which this file is deployed, the deploy will fail.

File
Permissions
Mode *

Tip: '644' for text files and '755' for directories and executables will allow global access or execution (but not modification).

Macro
Delimiters *Start Delimiter: End Delimiter:

Tip: A full listing of the available macros is listed in the [RHN Reference Guide](#).

Done

RHN Satellite - Configuration - Configuration Files - Details - Mozilla Firefox

File Edit View History Bookmarks Tools Help

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redhat.com https://cho.salab.dfw.redhat.com/rhn/configuration/file/FileDetails.do? ☆

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Overview Systems Errata Channels Configuration Schedule Users Monitoring Admin Help

NO SYSTEMS SELECTED MANAGE CLEAR

OverviewConfiguration ChannelsConfiguration FilesCentrally Managed FilesLocally Managed FilesSystems

Revision 1 of /etc/summit from channel Summit

delete this file revision

Config Channel ?

DetailsManage RevisionsDeploy FileCopy FileCompare File

File Details

Configuration Channel: Summit Config Channel

Revision: 1 (view other revisions)

Creation Date: 1 second ago

Last Modified: 1 second ago by satadmin

File Type: Directory

File Properties

Filename/Path*: /etc/summit

Ownership: User name*: rootGroup name*: root

Tip: If the user and/or group indicated here does not exist on system(s) to which this file is deployed, the deploy will fail.

File Permissions Mode*: 755

Tip: '644' for text files and '755' for directories and executables will allow global access or execution (but not modification).

Update Configuration File

Configuration File Management

Now add a new config file in /etc/summit

Click on the config channel name (“Summit Config Channel”)

Click on Add Files sub-tab

Click on Create File subtab

Create the file - path, owner, permissions, content

- Note the macro example
- See section 6.7.5.1 of the RHN Reference Guide for details about macros (<http://tinyurl.com/pjndxr>)

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OverviewConfiguration ChannelsConfiguration FilesCentrally Managed FilesLocally Managed FilesSystems

Revision 1 of /etc/summit from channel Summit

delete this file revision

Config Channel

DetailsManage RevisionsDeploy FileCopy FileCompare File

File Details

Configuration Channel:Summit Config Channel

Revision:1 (view other revisions)

Creation Date:1 second ago

Last Modified:1 second ago by satadmin

File Type:Directory

File Properties

Filename/Path*: /etc/summit

Ownership:

User name*: root

Group name*: root

Tip: If the user and/or group indicated here does not exist on system(s) to which this file is deployed, the deploy will fail.

File Permissions Mode*:

755

Tip: '644' for text files and '755' for directories and executables will allow global access or execution (but not modification).

Update Configuration File

https://cho.salab.dfw.redhat.com/rhn/configuration/ChannelOverview.do?ccid=82

RHN Satellite - Configuration - Overview - Mozilla Firefox

FileEditViewHistoryBookmarksToolsHelp

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NO SYSTEMS SELECTEDMANAGECLEAR

OverviewConfiguration ChannelsConfiguration FilesSystems

Summit Config Channel?delete channel

OverviewList/Remove FilesAdd FilesSystems

Channel Properties (Edit Properties)

Name:Summit Config Channel

Label:summit-cfg-1

Description:This is the first configuration channel.

Channel Information

Number of Files:0 files, 1 directories (1 total)

Systems:No systems

Configuration Actions

Add/Create Files

- Create new configuration file or directory
- Upload configuration files
- Import a file from another channel or system

https://cho.salab.dfw.redhat.com/rhn/configuration/ChannelUploadFiles.do?ccid=82



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[Upload File](#) [Import Files](#) [Create File](#)

File to Upload *:

File Type:

Text file

☐ Binary file

Filename/Path *:

Ownership:

User name *:

root

Group name *:

root

Tip: If the user and/or group indicated here does not exist on system(s) to which this file is deployed, the



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redhat.comhttps://cho.salab.dfw.redhat.com/rhn/configuration/ChannelCreateFile★

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File Type:

☒ Text file

☐ Directory

Filename/Path

*/

/etc/summit/summit.conf

Ownership:

User name *

root

Group name *

root

Tip: If the user and/or group indicated here does not exist on system(s) to which this file is deployed, the deploy will fail.

File Permissions Mode *

644

Tip: '644' for text files and '755' for directories and executables will allow global access or execution (but not modification).

Macro Delimiters *

Start Delimiter: {

End Delimiter: }

Tip: A full listing of the available macros is listed in the [RHN Reference Guide](#).

File Contents:

🔍↺↻↻

1

systemid={|rhnsystem.sid|}

2

profile_name={|rhnsystem.profile_name|}

3

system_description={|rhnsystem.description|}

4

hostname={|rhnsystem.hostname|}

5

ip_address={|rhnsystem.ip_address|}

6

eth0={|rhnsystem.net_interface.ip_address(eth0)|}

7

netmask={|rhnsystem.net_interface.netmask(eth0)|}

8

broadcast={|rhnsystem.net_interface.broadcast(eth0)|}

9

mac_addr={|rhnsystem.net_interface.hardware_address(eth0)|}

10

nic_driver={|rhnsystem.net_interface.driver_module(eth0)|}

Done

File

Edit

View

History

Bookmarks

Tools

Help

←

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redhat.com

https://cho.salab.dfw.redhat.com/rhn/configuration/file/FileDetails.do?

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Overview

Configuration Channels

Configuration Files

Centrally Managed Files

Locally Managed Files

Systems

Revision 1 of /etc/summit/summit.conf

delete this file revision

download file

from channel Summit Config Channel

Details

Manage Revisions

Deploy File

Copy File

Compare File

File Details

File Properties

Configuration Channel:

Summit Config Channel

Revision:

1 (view other revisions)

Creation Date:

0 seconds ago

Last Modified:

0 seconds ago by satadmin

File Type:

Text File

Click here for more information on the differences between text and binary files.

Filename/Path

/etc/summit/summit.conf

Ownership:

User name

root

Group name

root

Tip:

If the user and/or group indicated here does not exist on system(s) to which this file is deployed, the deploy will fail.

File Permissions Mode

644

Tip:

'644' for text files and '755' for directories and executables will allow global access or execution (but not modification).

Additional File Details

File Size:

462 B

462 B total (all revisions)

Done

Madness break!

Now that we've got a config channel defined, we're going to let it simmer over a Bunsen burner for a while...



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Set up System Groups

Click on Systems Tab

Click on System Groups in the left nav bar

Click on “create a new group”

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NO SYSTEMS SELECTEDMANAGECLEAR

OverviewSystemsSystem GroupsSystem Set ManagerAdvanced SearchActivation KeysStored ProfilesCustom System InfoKickstart

System Legend

☒ OK

☐ Critical

☐ Warning

☐ Unknown

System Overview?

Systems (View System Groups)

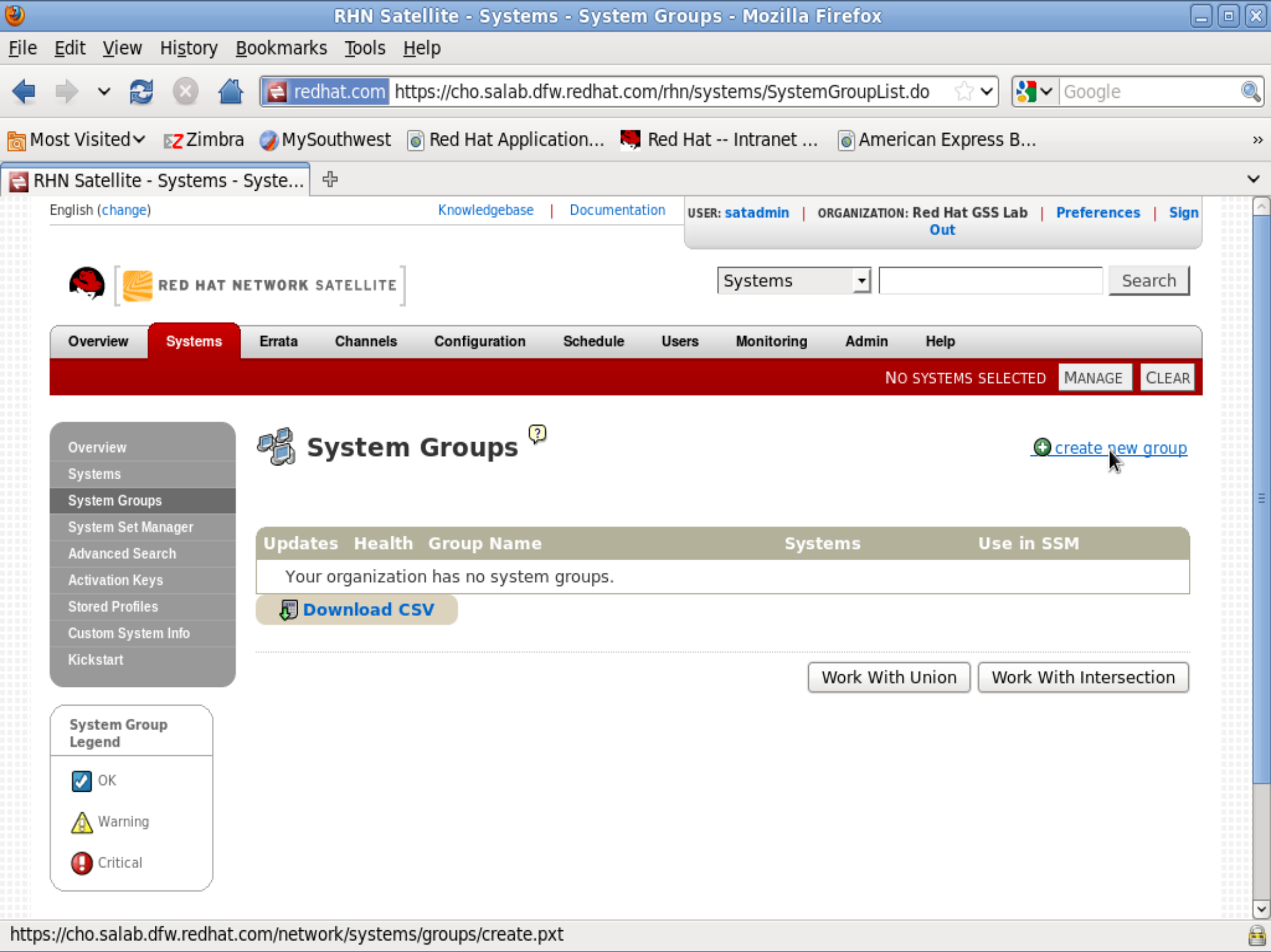
0123456789ABCDEFGHIJKLMN OPQRSTUVWXYZ

Filter by System Name: Display 25 items per page 1 - 12 of 12 (0 selected)

Go

☐	Updates	Health	Errata	Packages	System	Base Channel	Entitlement
☐			5	8	 ai.salab.dfw.redhat.com (DO NOT USE)	Red Hat Enterprise Linux (v. 5 for 64-bit x86_64)	Management, Monitoring, Provisioning, Virtualization Platform
☐			5	9	 ayame.salab.dfw.redhat.com tcameron	Red Hat Enterprise Linux (v. 5 for 64-bit x86_64)	Management, Monitoring, Provisioning, Virtualization

https://cho.salab.dfw.redhat.com/rhn/systems/SystemGroupList.do



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System Set Manager

Advanced Search

Activation Keys

Stored Profiles

Custom System Info

Kickstart

System Groups

[+ create new group](#)

Updates

Health

Group Name

Systems

Use in SSM

Your organization has no system groups.

[Download CSV](#)

Work With Union

Work With Intersection

System Group Legend



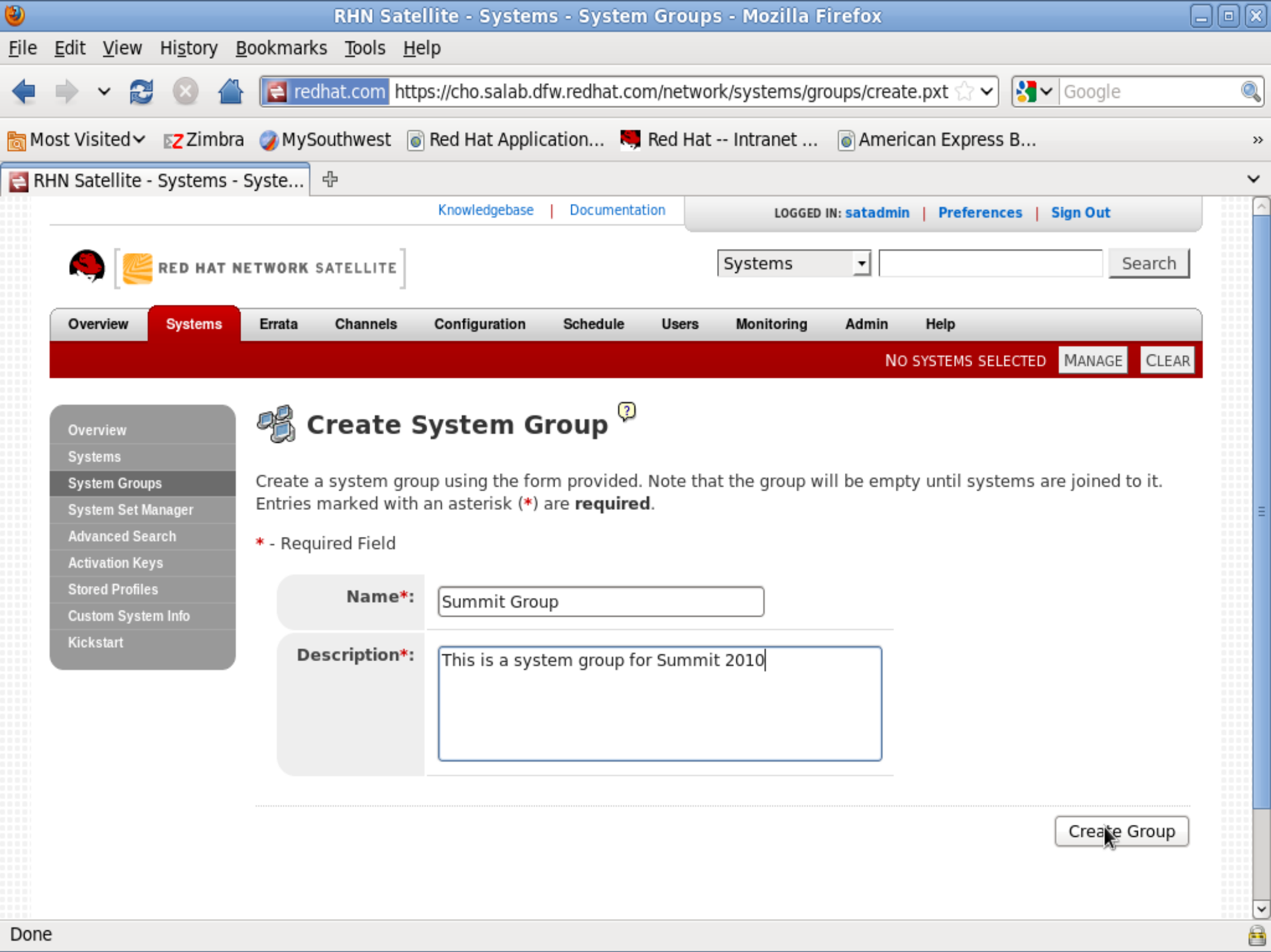
OK



Warning



Critical



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NO SYSTEMS SELECTED

MANAGE

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Create System Group

Create a system group using the form provided. Note that the group will be empty until systems are joined to it. Entries marked with an asterisk (*) are **required**.

* - Required Field

Name*:

Summit Group

Description*:

This is a system group for Summit 2010

Create Group

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System Groups

System Set Manager

Advanced Search

Activation Keys

Stored Profiles

Custom System Info

Kickstart

System Group Legend

☒ OK

 Warning

 Critical

System group Summit Group created.

 System Groups

 create new group

0123456789ABCDEFGHIJKLMNOPQRSTU VWXYZ

Filter by System Group Name:

Display items per page

1 - 1 of 1 (0 selected)

☐	Updates	Health	Group Name	Systems	Use in SSM
☐	☒		Summit Group	0	Use in SSM

 [Download CSV](#)

Done

Madness break!

Now that we've defined a system group, we'll leave it in the cyclotron for a while...



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Channel Cloning

Channels Tab

Manage Software Channels in the left nav bar

Click “clone channel”

- Channel to clone
- Clone State
 - Current state
 - Original state
 - Select errata
- Click “Create Channel”

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Channel Cloning - note...

This web UI is great for cloning the original state of the channel or creating a clone of the channel as it is provided today.

It is pretty painful if you want to clone a channel “locked” at a specific update - RHEL 5.2, RHEL 4.6, and so on.

For now I'll demonstrate cloning dev, qa and production channels at the current state - we'll come back to setting up a “locked” channel later.

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NO SYSTEMS SELECTEDMANAGECLEAR

Software Channels

All Channels

Red Hat Channels

Popular Channels

My Channels

Shared Channels

Retired Channels

Package Search

Manage Software Channels

 Full Software Channel List ?

All ChannelsRed Hat ChannelsPopular ChannelsMy ChannelsShared ChannelsRetired Channels

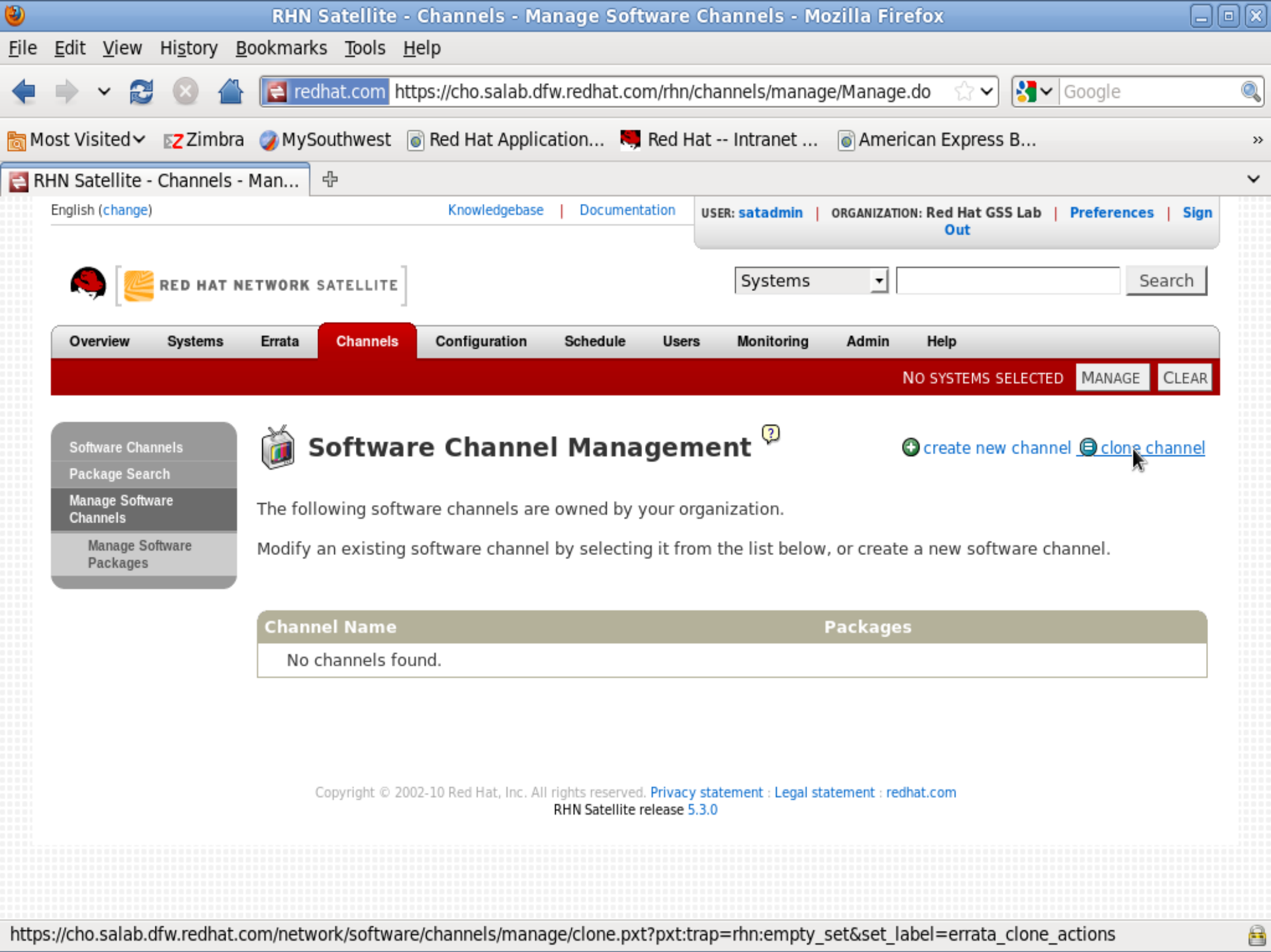
The software channels listed below are **all of the channels** that your organization has access to.

Filter by Channel Name: Go

Show All Child Channels | Hide All Child Channels

Channel Name	Provider	Packages	Systems
 JBoss Enterprise Middleware	Red Hat, Inc.	0	0
 Red Hat Desktop (v. 3 for AMD64/Intel EM64T)	Red Hat, Inc.	5518	0
 Red Hat Desktop (v. 3 for x86)	Red Hat, Inc.	4899	0
 Red Hat Desktop (v. 4 for 32-bit x86)	Red Hat, Inc.	7471	0
 Red Hat Desktop (v. 4 for 64-bit AMD64/Intel EM64T)	Red Hat, Inc.	8535	0
 Red Hat Enterprise Linux (v. 5 for 32-bit x86)	Red Hat, Inc.	7243	1
 Red Hat Enterprise Linux (v. 5 for 64-bit x86_64)	Red Hat, Inc.	9529	11
 Red Hat Enterprise Linux AS (v. 3 for AMD64/Intel EM64T)	Red Hat, Inc.	6153	0

https://cho.salab.dfw.redhat.com/rhn/channels/manage/Manage.do



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redhat.com

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• Current state of the channel

The new channel will include all of the latest packages from the target channel, and all errata related to the channel will be cloned into your organization. If your organization already owns a clone of an erratum, the new channel will be associated with that erratum instead of creating another clone of the erratum.

• Original state of the channel

The new channel will be a clone of the original state of the target channel. This is done by cloning all of the packages from the target channel which do not have an erratum associated with them. No errata will be cloned into your organization.

• Select errata

The original state of the target channel will be cloned into the new channel. You will then have the option to select the errata you wish to import into the new channel. Importing an erratum will bring the packages from the target channel referred to by the erratum into the new channel. Selecting all of the errata from the list of potential errata is the same as cloning the current state of the channel. Selecting none of the errata is the same as cloning the original state of the channel.

Clone From:

Red Hat Enterprise Linux (v. 5 for 64-bit x86_64)

Clone:

☒ Current state of the channel (all errata)

☐ Original state of the channel (no errata)

☐ Select errata

Create Channel

Done

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Parent Channel:

None

Channel Name*:

DEV Red Hat Enterprise Linux (v. 5 for 64-bit x86_64)

Ex: Custom Channel

Channel Label*:

dev-rhel-x86_64-server-5

Ex: custom-channel

Base Channel Architecture*:

x86_64

Channel Package Summary:

n/a

Channel Summary*:

Red Hat Enterprise Linux (v. 5 for 64-bit AMD64 / Inte

GPG key URL:

file:///etc/pki/rpm-gpg/RPM-GPG-KEY-redhat-release

GPG key ID:

Ex: DB42A60E

GPG key Fingerprint:

Ex: CA20 8686 2BD6 9DFC 65F6 ECC4 2191 80CD DB42 A60E

Channel Description:

Done

Channel Cloning

This will take some time depending on the processing power and disk speed of your Satellite server.

Each of the package entries in the database from the Red Hat provided channel (in this case RHEL 5 i386) will be cloned and show up as part of the newly cloned channel

The packages themselves are not copied - it's just the entries in the database. This minimizes disk usage.

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Channel Cloning

You can fill out information about the Basic Channel Details, Contact/Support Information, Channel Access Control, and GPG Security information.

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Software Channels

Package Search

Manage Software Channels

Manage Software Packages

DEV Red Hat Enterprise Linux (v. 5 for 64-bit x86_64)

delete software channel

DetailsManagersErrataPackages

Basic Channel Details

Create or edit software channels from this page.

If the parent channel is set to 'none', the channel is a base channel. Otherwise, the channel is a child of the specified channel.

Channel name and label are required. They each must be at least 6 characters in length. Labels must begin with a letter, contain only lowercase letters, hyphens ('-'), periods ('.'), underscores ('_'), and numerals. Channel name may also contain spaces and forward slashes ('/').

Channel summary is also required.

Channel Name*

DEV Red Hat Enterprise Linux (v. 5 for 64-bit x86_64)

Channel Label*

dev-rhel-x86_64-server-5

Parent Channel:

None

Parent Channel Architecture:

x86_64

Channel Summary*

Red Hat Enterprise Linux (v. 5 for 64-bit AMD64 / Inte

Channel Description:

Done

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←→⌵↺⌵🏠🔍redhat.comhttps://cho.salab.dfw.redhat.com/rhn/channels/manage/Edit.do?cid=7★🔍Google

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🔍RHN Satellite - Channels - Man...+

Contact/Support Information

Maintainer Name:

Thomas Cameron

Maintainer Contact Information:

Email Address:thomas@redhat.com

Phone Number:

Support Policy:

Fully supported. Contact Thomas with any issues.

Channel Access Control

Per-User Subscription Restrictions:

☒ All users within your organization may subscribe to this channel.

☐ Only selected users within your organization may subscribe to this channel.

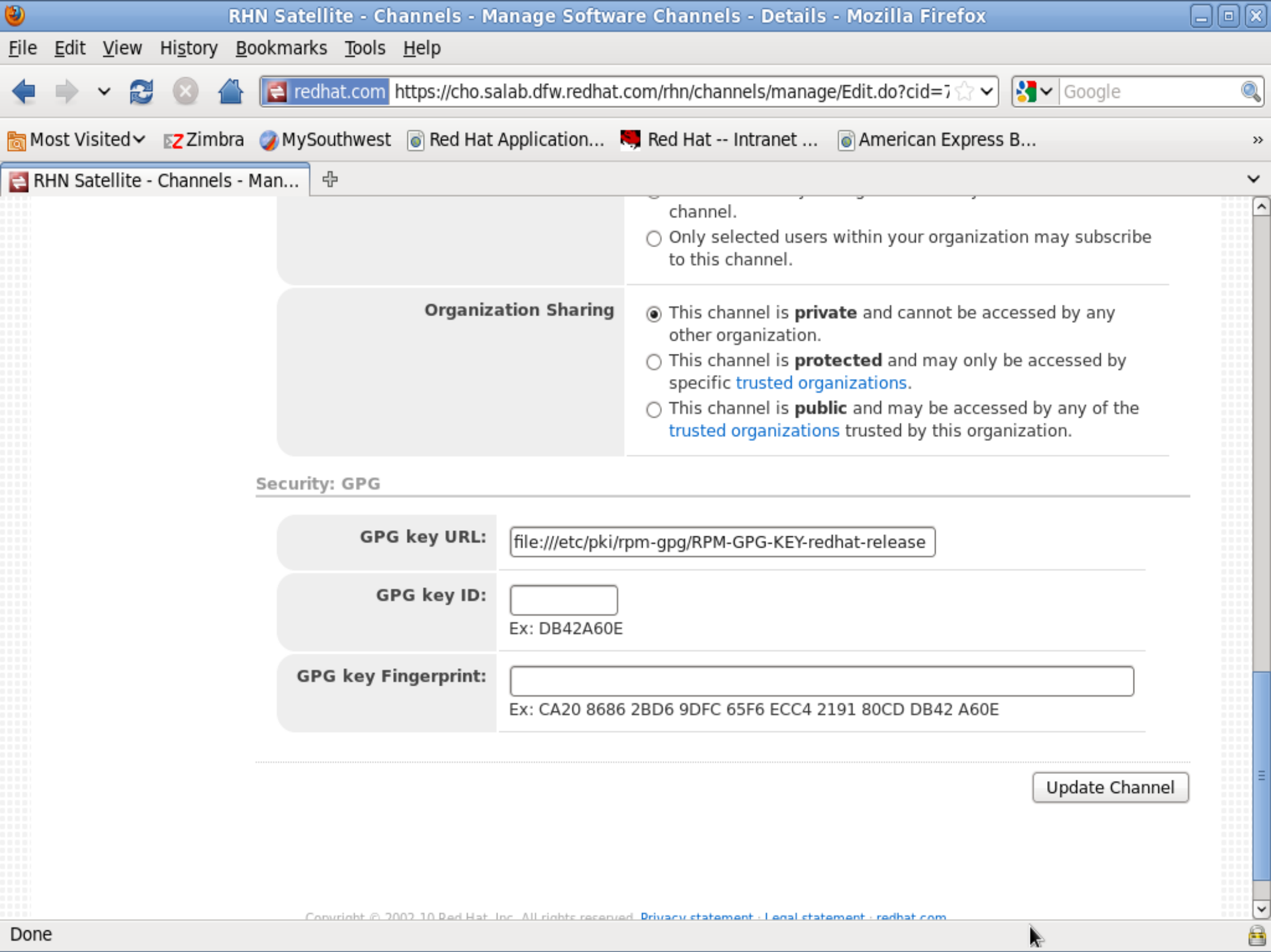
Organization Sharing

☒ This channel is **private** and cannot be accessed by any other organization.

☐ This channel is **protected** and may only be accessed by specific [trusted organizations](#).

☐ This channel is **public** and may be accessed by any of the [trusted organizations](#) trusted by this organization.

Done



channel.

- ☐ Only selected users within your organization may subscribe to this channel.

Organization Sharing

- ☒ This channel is **private** and cannot be accessed by any other organization.
- ☐ This channel is **protected** and may only be accessed by specific [trusted organizations](#).
- ☐ This channel is **public** and may be accessed by any of the [trusted organizations](#) trusted by this organization.

Security: GPG**GPG key URL:****GPG key ID:**

Ex: DB42A60E

GPG key Fingerprint:

Ex: CA20 8686 2BD6 9DFC 65F6 ECC4 2191 80CD DB42 A60E

[Update Channel](#)

Channel Cloning

Take a look at the Errata sub-tab and the the List/Remove sub-tab to see that all of the errata (bug, security and enhancement) have been cloned.

Cloned errata can be viewed in order of errata type, advisory name, or date.

- Date is very handy for backing out errata so as to be able to lock a channel, but there's still a better, albeit unsupported, method.
- See <http://www.redhat.com/security/updates/notes/> for the release dates of all Red Hat Enterprise Linux versions.



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https://cho.salab.dfw.redhat.com/rhn/channels/manage/Edit.do?cid=7

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USER: satadmin

ORGANIZATION: Red Hat GSS Lab

Preferences

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RED HAT NETWORK SATELLITE

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NO SYSTEMS SELECTED

MANAGE

CLEAR

Software Channels

Package Search

Manage Software Channels

Manage Software Packages

DEV Red Hat Enterprise Linux (v. 5 for 64-bit x86_64)

delete software channel

Details

Managers

Errata

Packages

Basic Channel Details

Create or edit software channels from this page.

If the parent channel is set to 'none', the channel is a base channel. Otherwise, the channel is a child of the specified channel.

Channel name and label are required. They each must be at least 6 characters in length. Labels must begin with a letter, contain only lowercase letters, hyphens ('-'), periods ('.'), underscores ('_'), and numerals. Channel name may also contain spaces and forward slashes ('/').

Channel summary is also required.

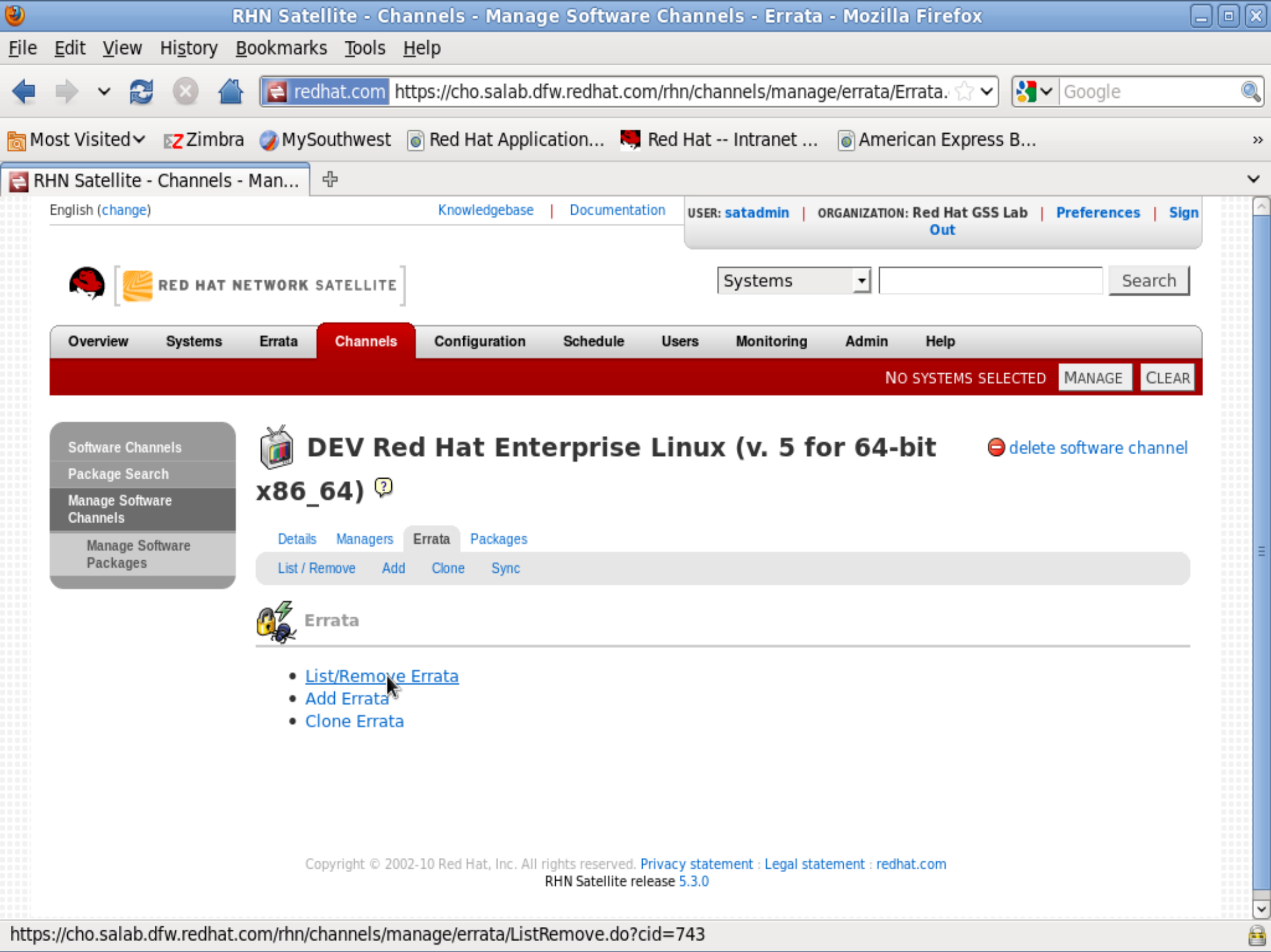
Channel Name*

DEV Red Hat Enterprise Linux (v. 5 for 64-bit x86_64)

Channel Label*

dev-rhel-x86_64-server-5

https://cho.salab.dfw.redhat.com/rhn/channels/manage/errata/Errata.do?cid=743



Software Channels

Package Search

Manage Software Channels

Manage Software Packages

 **DEV Red Hat Enterprise Linux (v. 5 for 64-bit x86_64)** 

delete software channel

Details

Managers

Errata

Packages

List / Remove

Add

Clone

Sync

 **Errata**

Below is the list of errata associated with this channel. To remove an erratum from this channel, select it here, and click 'Remove' below.

0 1 2 3 4 5 6 7 8 9 A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Filter by Synopsis: Display

500

 items per page 1 - 500 of 1,519 (0 selected)

<< < > >>

Go

☐	Type	Advisory ^	Synopsis	Updated
☐		CLA-2010:0490	Important: cups security update	6/16/10
☐		CLA-2010:0488	Critical: samba and samba3x security update	6/15/10
☐		CLA-2010:0487	cman bug-fix update	6/15/10
☐		CLA-2010:0486	openais bug fix update	6/15/10
☐		CLA-2010:0475	Moderate: sudo security update	6/14/10
☐		CLA-2010:0458	Moderate: perl security update	6/6/10

Channel Cloning

Clone the child channels appropriate for your environment. In this example, RHN Tools for RHEL 5 x86_64:

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NO SYSTEMS SELECTEDMANAGECLEAR

Software ChannelsPackage SearchManage Software ChannelsManage Software Packages

Software Channel Management?

[+ create new channel](#) [🔗 clone channel](#)

The following software channels are owned by your organization.

Modify an existing software channel by selecting it from the list below, or create a new software channel.

Filter by Channel Name: Display 500 items per page 1 - 1 of 1

Go

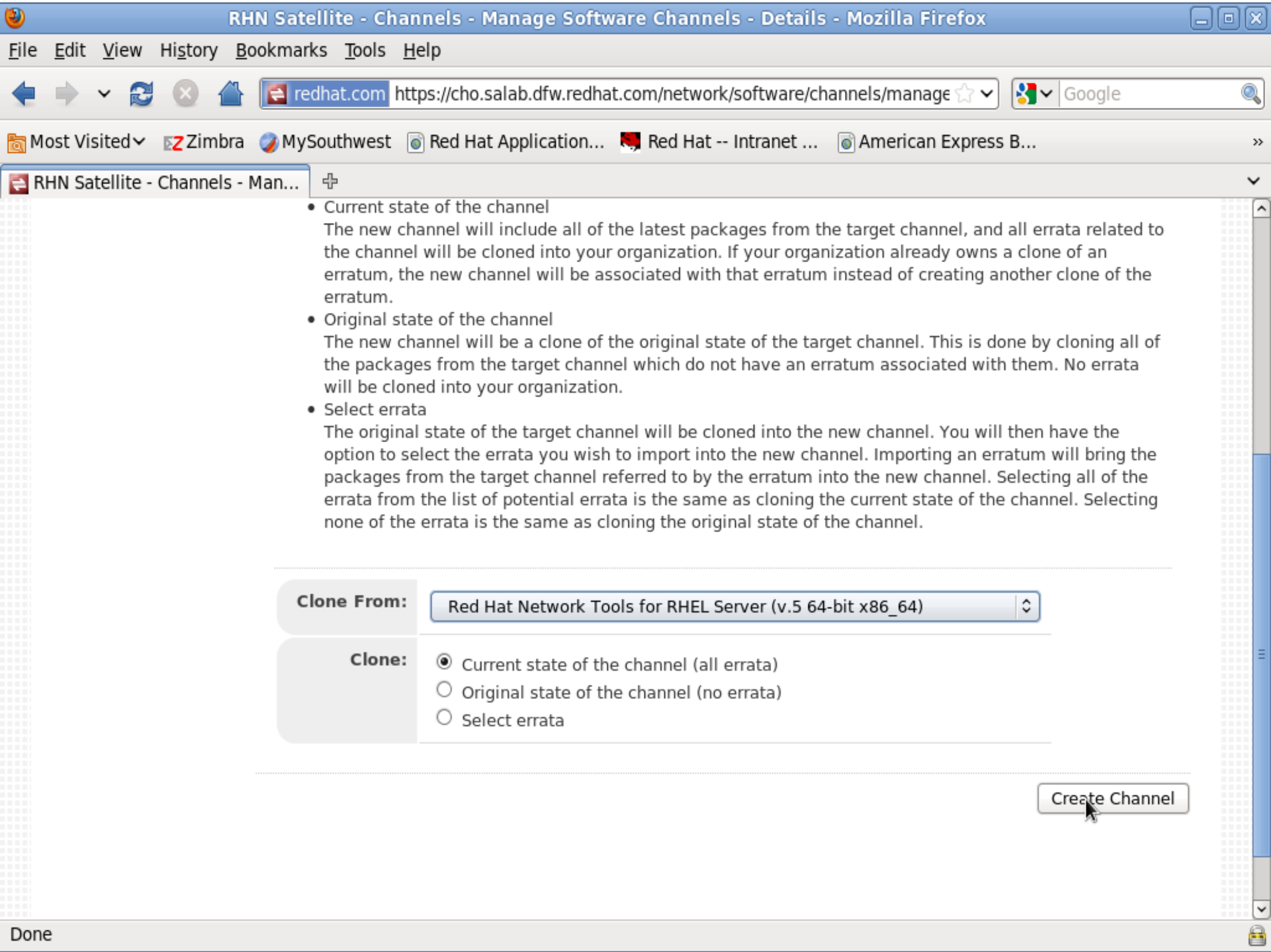
Channel Name	Packages
DEV Red Hat Enterprise Linux (v. 5 for 64-bit x86_64)	9529

1 - 1 of 1

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RHN Satellite release 5.3.0

https://cho.salab.dfw.redhat.com/network/software/channels/manage/clone.pxt?pxt:trap=rhn:empty_set&set_label=errata_clone_actions



- Current state of the channel
The new channel will include all of the latest packages from the target channel, and all errata related to the channel will be cloned into your organization. If your organization already owns a clone of an erratum, the new channel will be associated with that erratum instead of creating another clone of the erratum.
- Original state of the channel
The new channel will be a clone of the original state of the target channel. This is done by cloning all of the packages from the target channel which do not have an erratum associated with them. No errata will be cloned into your organization.
- Select errata
The original state of the target channel will be cloned into the new channel. You will then have the option to select the errata you wish to import into the new channel. Importing an erratum will bring the packages from the target channel referred to by the erratum into the new channel. Selecting all of the errata from the list of potential errata is the same as cloning the current state of the channel. Selecting none of the errata is the same as cloning the original state of the channel.

Clone From:

Red Hat Network Tools for RHEL Server (v.5 64-bit x86_64)

Clone:

- ☒ Current state of the channel (all errata)
- ☐ Original state of the channel (no errata)
- ☐ Select errata

Create Channel

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FileEditViewHistoryBookmarksToolsHelp

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redhat.comhttps://cho.salab.dfw.redhat.com/network/software/channels/manage🌟

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Channel summary is also required.

Clone From:

Red Hat Network Tools for RHEL Server (v.5 64-bit x86_64)

Clone Type:

Current state of the channel

Parent Channel:

DEV Red Hat Enterprise Linux (v. 5 for 64-bit x86_64)⌵

Channel Name*:

DEV Red Hat Network Tools for RHEL Server (v.5 64-bit x86_64)

Ex: Custom Channel

Channel Label*:

dev-rhn-tools-rhel-x86_64-server-5

Ex: custom-channel

Base Channel Architecture*:

x86_64⌵

Channel Package Summary:

n/a

Channel Summary*:

Red Hat Network Tools for RHEL 5 Server (x86_64)

GPG key URL:

file:///etc/pki/rpm-gpg/RPM-GPG-KEY-redhat-release

GPG key ID:

Done

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Software Channels

Package Search

Manage Software Channels

Manage Software Packages



DEV Red Hat Network Tools for RHEL Server

(v.5 64-bit x86_64)

delete software channel

DetailsManagersErrataPackages

Basic Channel Details

Create or edit software channels from this page.

If the parent channel is set to 'none', the channel is a base channel. Otherwise, the channel is a child of the specified channel.

Channel name and label are required. They each must be at least 6 characters in length. Labels must begin with a letter, contain only lowercase letters, hyphens ('-'), periods ('.'), underscores ('_'), and numerals. Channel name may also contain spaces and forward slashes ('/').

Channel summary is also required.

Channel Name*

DEV Red Hat Network Tools for RHEL Server (v.5 64-bit x86_64)

Channel Label*

dev-rhn-tools-rhel-x86_64-server-5

Done

Channel Cloning

Again, you can fill out Basic Channel Details,
Contact/Support Information, Channel Access Control,
and GPG Security information

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Channel Cloning

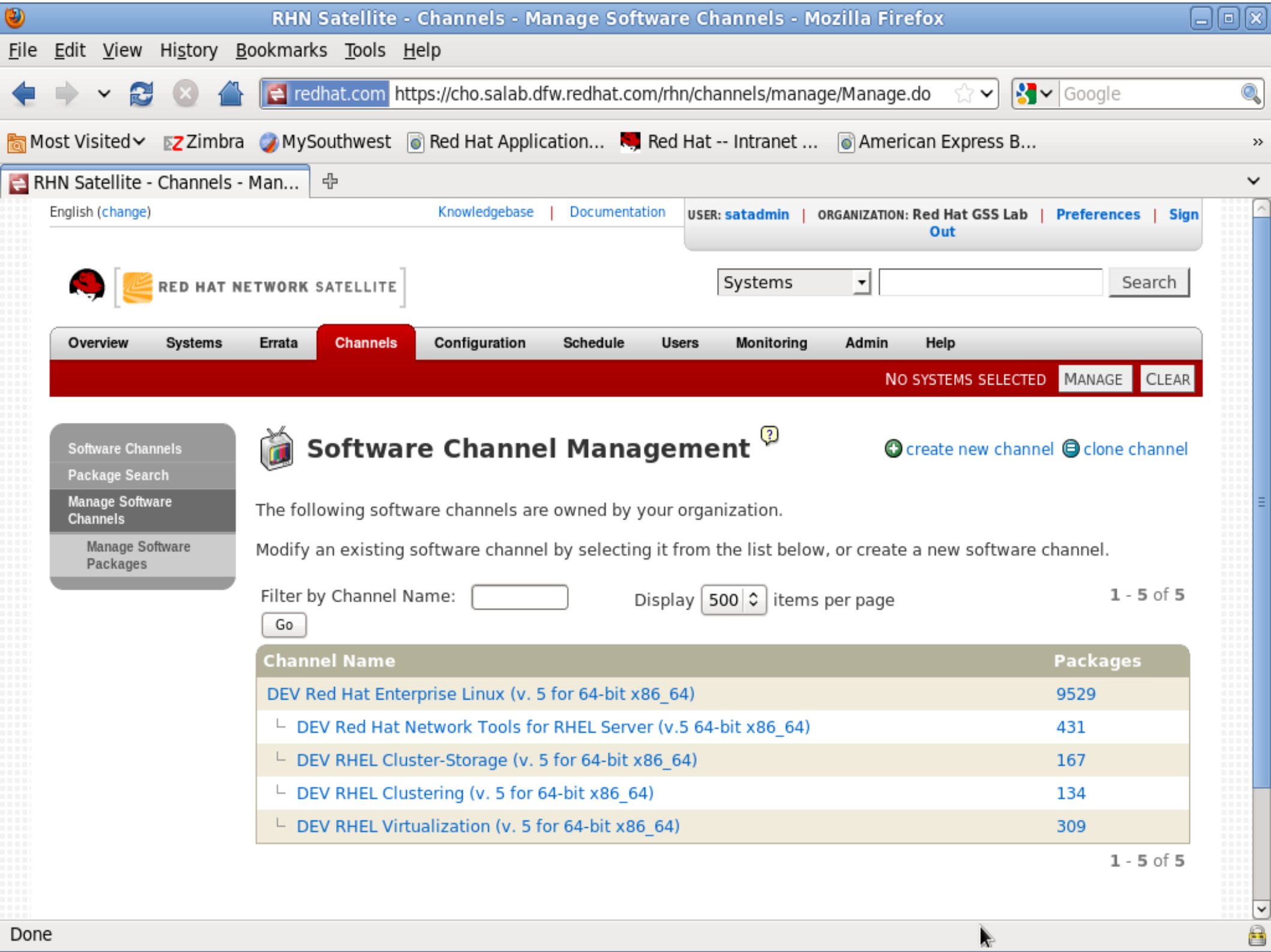
Lather, rinse, repeat for each of the child channels which make sense. In this example, I've cloned Clustering, Cluster-Storage, and Virtualization.

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ORGANIZATION: Red Hat GSS Lab

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NO SYSTEMS SELECTED

[MANAGE](#)[CLEAR](#)[Software Channels](#)[Package Search](#)[Manage Software Channels](#)[Manage Software Packages](#)

Software Channel Management

[+ create new channel](#) [= clone channel](#)

The following software channels are owned by your organization.

Modify an existing software channel by selecting it from the list below, or create a new software channel.

Filter by Channel Name:

Display

500

items per page

1 - 5 of 5

[Go](#)**Channel Name****Packages**[DEV Red Hat Enterprise Linux \(v. 5 for 64-bit x86_64\)](#)

9529

[└ DEV Red Hat Network Tools for RHEL Server \(v.5 64-bit x86_64\)](#)

431

[└ DEV RHEL Cluster-Storage \(v. 5 for 64-bit x86_64\)](#)

167

[└ DEV RHEL Clustering \(v. 5 for 64-bit x86_64\)](#)

134

[└ DEV RHEL Virtualization \(v. 5 for 64-bit x86_64\)](#)

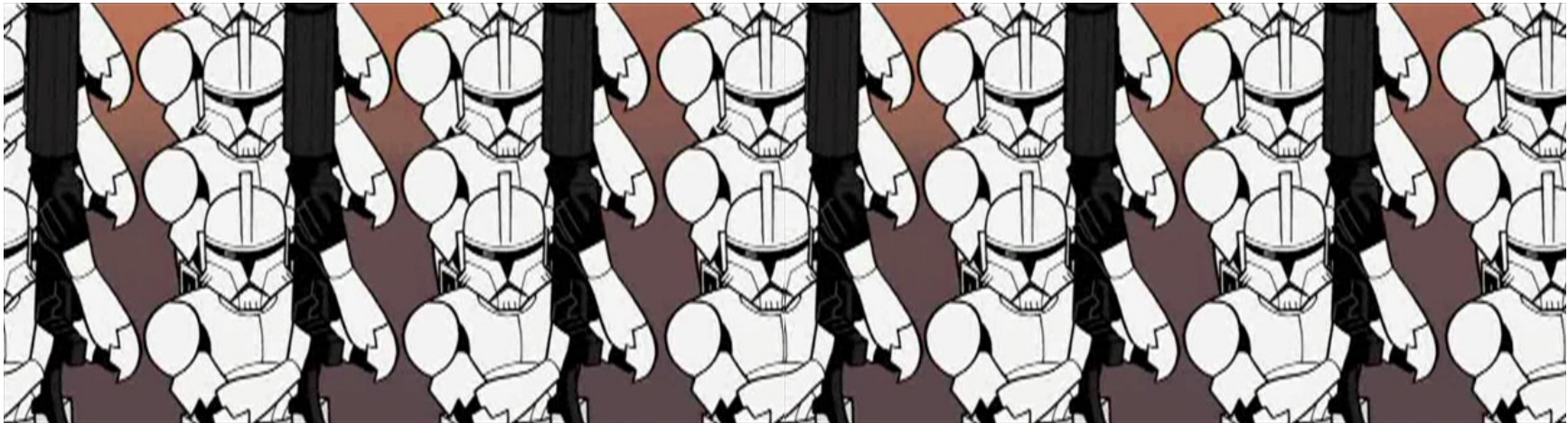
309

1 - 5 of 5

Channel Cloning

Now clone the clone. Clone DEV to QA. Then clone the QA channels to PROD.

As new errata become available from Red Hat, you will clone them to DEV. After you've done the development work in DEV, clone them to QA. Once you are ready to put them into production, clone away.

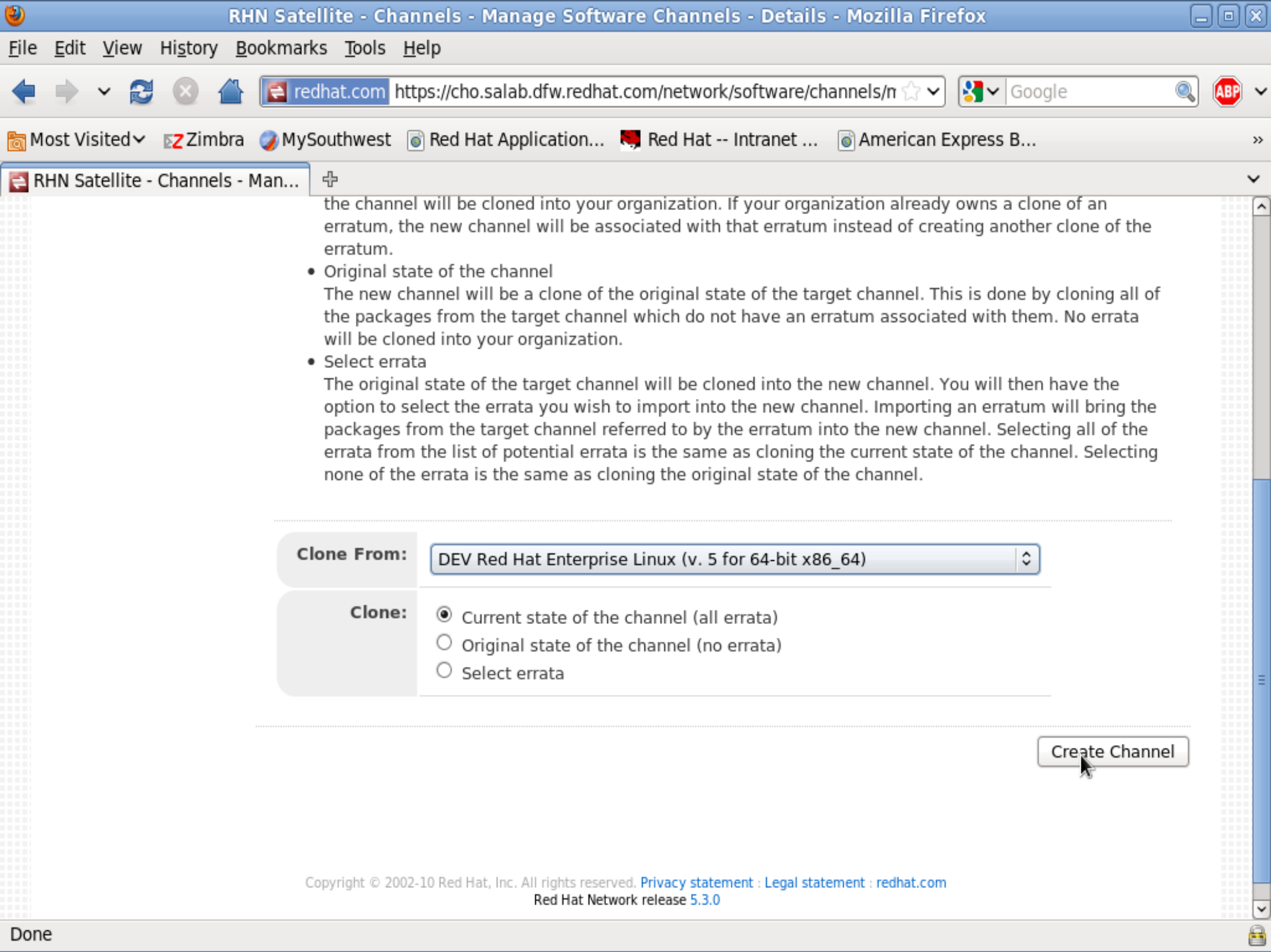


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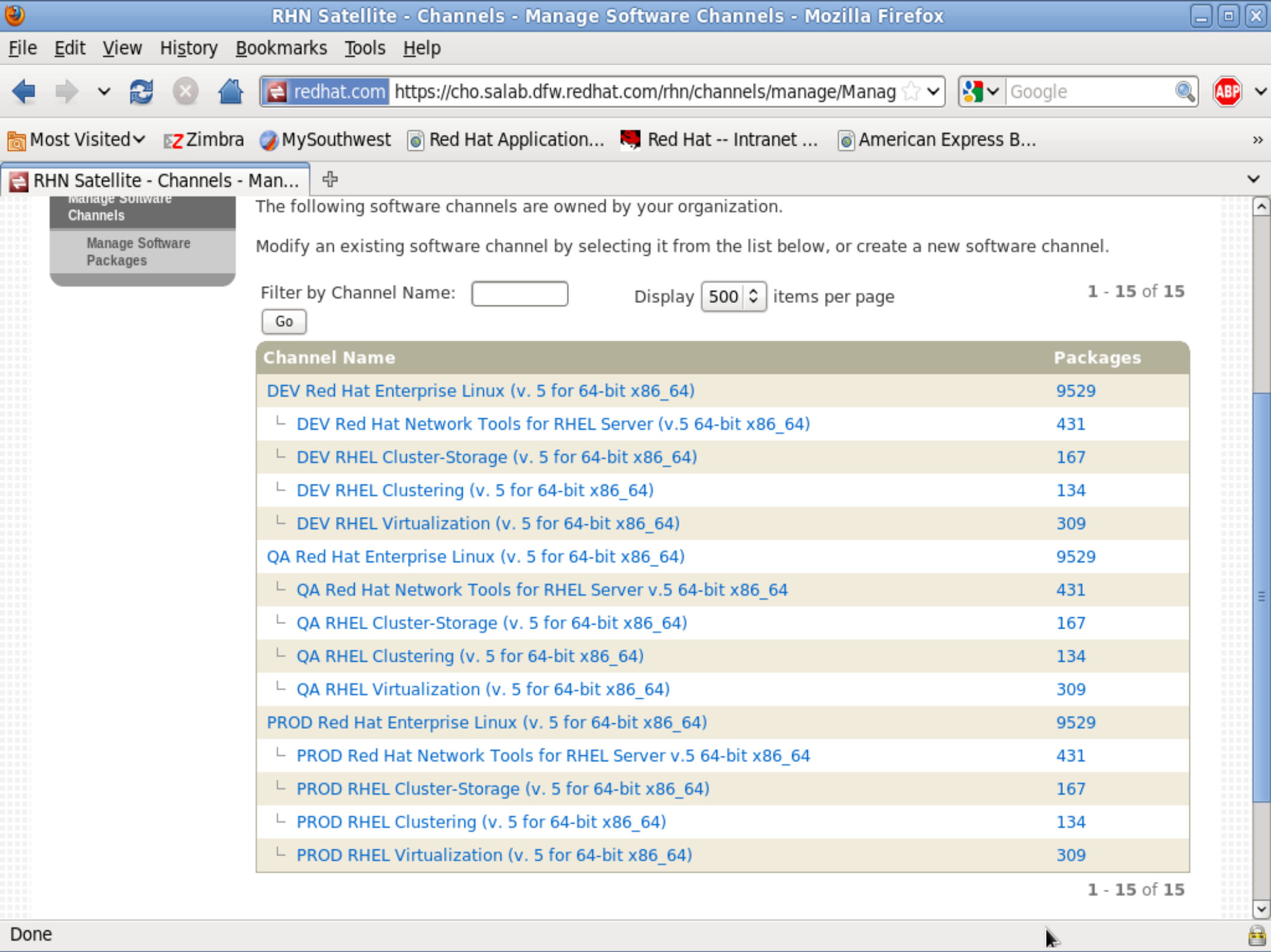
the channel will be cloned into your organization. If your organization already owns a clone of an erratum, the new channel will be associated with that erratum instead of creating another clone of the erratum.

- Original state of the channel
The new channel will be a clone of the original state of the target channel. This is done by cloning all of the packages from the target channel which do not have an erratum associated with them. No errata will be cloned into your organization.
- Select errata
The original state of the target channel will be cloned into the new channel. You will then have the option to select the errata you wish to import into the new channel. Importing an erratum will bring the packages from the target channel referred to by the erratum into the new channel. Selecting all of the errata from the list of potential errata is the same as cloning the current state of the channel. Selecting none of the errata is the same as cloning the original state of the channel.

Clone From:DEV Red Hat Enterprise Linux (v. 5 for 64-bit x86_64) **Clone:**

- ☒ Current state of the channel (all errata)
☐ Original state of the channel (no errata)
☐ Select errata





The following software channels are owned by your organization.

Modify an existing software channel by selecting it from the list below, or create a new software channel.

Filter by Channel Name:

Display items per page

1 - 15 of 15

Channel Name	Packages
DEV Red Hat Enterprise Linux (v. 5 for 64-bit x86_64)	9529
└ DEV Red Hat Network Tools for RHEL Server (v.5 64-bit x86_64)	431
└ DEV RHEL Cluster-Storage (v. 5 for 64-bit x86_64)	167
└ DEV RHEL Clustering (v. 5 for 64-bit x86_64)	134
└ DEV RHEL Virtualization (v. 5 for 64-bit x86_64)	309
QA Red Hat Enterprise Linux (v. 5 for 64-bit x86_64)	9529
└ QA Red Hat Network Tools for RHEL Server v.5 64-bit x86_64	431
└ QA RHEL Cluster-Storage (v. 5 for 64-bit x86_64)	167
└ QA RHEL Clustering (v. 5 for 64-bit x86_64)	134
└ QA RHEL Virtualization (v. 5 for 64-bit x86_64)	309
PROD Red Hat Enterprise Linux (v. 5 for 64-bit x86_64)	9529
└ PROD Red Hat Network Tools for RHEL Server v.5 64-bit x86_64	431
└ PROD RHEL Cluster-Storage (v. 5 for 64-bit x86_64)	167
└ PROD RHEL Clustering (v. 5 for 64-bit x86_64)	134
└ PROD RHEL Virtualization (v. 5 for 64-bit x86_64)	309

1 - 15 of 15

Creating a “locked” channel

Justin Sherrill (ridiculously smart guy) of the Spacewalk/Satellite team (ridiculously smart team) came up with a peach of a script

Currently not part of RHN Satellite, hosted at <https://fedorahosted.org/spacewalk/wiki/channel-to-update>

This is **not** supported by Red Hat. The only promise we make is that if it breaks... you get to keep all the pieces.

See Appendix A of this slide deck on how to use it. Time permitting I'll show Appendix A.

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Madness break!

Now that we've cloned channels, we'll leave them in the test tube for a while...



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Custom Channels

For internally developed or other non-Red Hat packages.

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Custom Channels - web UI actions

Channels tab

Manage Software Channels

“Create new channel” link on the right

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Custom Channels - web UI actions

Choose the parent channel, if any

- Note that for apps and such, you do need to make your custom channel a child channel. I recommend you make it a child channel of a Red Hat-provided channel and then clone it to be a child of your cloned parent channels.

In this example, I will be creating a channel for the utilities I need to manage my iPod. I'll make it a child channel of the standard RHEL 5 server x86_64 parent.

I'm going to talk about GPG signatures later

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NO SYSTEMS SELECTEDMANAGECLEAR

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Software Channel Management

[+ create new channel](#)[clone channel](#)

The following software channels are owned by your organization.

Modify an existing software channel by selecting it from the list below, or create a new software channel.

Filter by Channel Name: Display 500 items per page1 - 15 of 15

Go

Channel Name	Packages
DEV Red Hat Enterprise Linux (v. 5 for 64-bit x86_64)	9529
└ DEV Red Hat Network Tools for RHEL Server (v.5 64-bit x86_64)	431
└ DEV RHEL Cluster-Storage (v. 5 for 64-bit x86_64)	167
└ DEV RHEL Clustering (v. 5 for 64-bit x86_64)	134
└ DEV RHEL Virtualization (v. 5 for 64-bit x86_64)	309
QA Red Hat Enterprise Linux (v. 5 for 64-bit x86_64)	9529
└ QA Red Hat Network Tools for RHEL Server v.5 64-bit x86_64	431

https://cho.salab.dfw.redhat.com/rhn/channels/manage/Edit.do

specified channel.

Channel name and label are required. They each must be at least 6 characters in length. Labels must begin with a letter, contain only lowercase letters, hyphens ('-'), periods ('.'), underscores ('_'), and numerals. Channel name may also contain spaces and forward slashes ('/').

Channel summary is also required.

Channel Name*:**Channel Label*:****Parent Channel:****Parent Channel Architecture:****Channel Summary*:****Channel Description:**

This is the stuff needed so Thomas can manage his iPod on RHEL Server. 'Cause, you know, that's an enterprise workload if ever there was one.

Contact/Support Information

Maintainer Name:

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NO SYSTEMS SELECTEDMANAGECLEAR

Software Channels

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Manage Software Channels

Manage Software Packages

Channel iPod Stuff created.

 **iPod Stuff**  delete software channel

Details

Managers

Errata

Packages

Basic Channel Details

Create or edit software channels from this page.

If the parent channel is set to 'none', the channel is a base channel. Otherwise, the channel is a child of the specified channel.

Channel name and label are required. They each must be at least 6 characters in length. Labels must begin with a letter, contain only lowercase letters, hyphens ('-'), periods ('.'), underscores ('_'), and numerals. Channel name may also contain spaces and forward slashes ('/').

Channel summary is also required.

Channel Name*

iPod Stuff

Done

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NO SYSTEMS SELECTEDMANAGECLEAR

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Software Channel Management

[create new channel](#)[clone channel](#)

The following software channels are owned by your organization.

Modify an existing software channel by selecting it from the list below, or create a new software channel.

Filter by Channel Name: Display items per page 1 - 17 of 17

Go

Channel Name	Packages
Red Hat Enterprise Linux (v. 5 for 64-bit x86_64)	9529
↳ iPod Stuff	0
DEV Red Hat Enterprise Linux (v. 5 for 64-bit x86_64)	9529
↳ DEV Red Hat Network Tools for RHEL Server (v.5 64-bit x86_64)	431
↳ DEV RHEL Cluster-Storage (v. 5 for 64-bit x86_64)	167
↳ DEV RHEL Clustering (v. 5 for 64-bit x86_64)	134
↳ DEV RHEL Virtualization (v. 5 for 64-bit x86_64)	309

Done

Custom Channels - shell actions

For security those packages must be GPG signed before you upload

- I recommend a secure signing process - have an account somewhere where only trusted admins can sign packages
- Multi-factor/checks and balances is not a bad thing - one person or group can sign packages but a separate person or group has to upload them to the Satellite

The GPG information should also be uploaded to the Satellite server

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Setting up GPG

Define your package signer. In this example, we have a system ***other than the Satellite server*** which has all the development/build tools installed on it. It also has an account on it called “rpmadmin” which can build/sign packages

rpmadmin creates a GPG key and exports it.

```
gpg --gen-key
```

```
gpg --export -a [name] > [public key]
```



Setting up GPG

Add lines to /home/rpadmin/.rpmmacros

- %_signature gpg
- %_gpg_name [your key ID]

Once the packages are built and signed, upload them to a directory on the Satellite server and upload them using the rhnpush command

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```
rpmadmin@gin:~  
File Edit View Search Terminal Help  
[rpmadmin@gin ~]$ gpg --gen-key  
gpg (GnuPG) 1.4.5; Copyright (C) 2006 Free Software Foundation, Inc.  
This program comes with ABSOLUTELY NO WARRANTY.  
This is free software, and you are welcome to redistribute it  
under certain conditions. See the file COPYING for details.  
  
gpg: directory `/home/rpmadmin/.gnupg' created  
gpg: new configuration file `/home/rpmadmin/.gnupg/gpg.conf' created  
gpg: WARNING: options in `/home/rpmadmin/.gnupg/gpg.conf' are not yet active during this run  
gpg: keyring `/home/rpmadmin/.gnupg/secring.gpg' created  
gpg: keyring `/home/rpmadmin/.gnupg/pubring.gpg' created  
Please select what kind of key you want:  
  (1) DSA and Elgamal (default)  
  (2) DSA (sign only)  
  (5) RSA (sign only)  
Your selection?  
DSA keypair will have 1024 bits.  
ELG-E keys may be between 1024 and 4096 bits long.  
What keysize do you want? (2048)  
Requested keysize is 2048 bits  
Please specify how long the key should be valid.  
    0 = key does not expire  
    <n> = key expires in n days
```

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```
rpmadmin@gin:~  
File Edit View Search Terminal Help  
[rpmadmin@gin ~]$ cat summit.pubkey  
-----BEGIN PGP PUBLIC KEY BLOCK-----  
Version: GnuPG v1.4.5 (GNU/Linux)  
  
mQGIBewfoakRBADv6aS7Y9AXt5LVXxTaxFR30Strp3mq4AekEW8jsb6LXFjo1Jsh  
uw4UZ5gtmom3NsC2f4nYfSGsNdbQG60d3Rq2Do0vA+oI1HkQ7KwNfP2Gm25lBYqR  
rVRJQj340aJO2Xkd345ykG8xJ/znfbw80jMG6yrLrh6k+kRo8B0eeXVZAwCg7xdE  
tG9P7tVlBZA0gBMRPSp70j8EAJTAryONKtPYcLjEEEncTiaFxFxGnU2cuQAH7bt016  
qrZeD3mU8vQ6ME1atvveZu0vizkfnnIMP2zkmBDbJk00Weo5vRDorgP7pdJLDhRq  
1/bZLV0Sa5aQV4PeB0pGB6bYsNZbIZBPWZGnigu0bSIVDVFIqXSXmco0gqhpe0SE  
KGF0A/kBCAQTEutQAT+bPLieWlm3ovH13t61FiFbw9MlyfeHLZmg0qEtZZEixxQH  
TA47E21VEQtK5pvnPWxWF9/E4a+EjLGyMLoPR6dglSm4Waf2Xx0M5DepZ+433+un  
vYh5SE7De0tnPk7ie4HHU4ClfD7jm9cEi30SJyGM+RLkdNeDPbQdUlBNIEFkbWlu  
IDx0aG9tYXNacmVkaGF0LmNvbT6IYAQTEQIAIAUCTB+hqQIbAwYLCQgHAWIEFQII  
AwQWAgMBAh4BAheAAAJEGCSCYFE5Ac6xNYAnjT52jcTXzIyLw4eNqfhczCQbusE  
AJ9PxHGyAY5Fk5FoWl9fLIggWd74ELkCDQRMH6G0EAgAuxlM8JC0w4wmgos8jxLO  
Rdzu6WKypU8WkHgBmrF+rcL0ldi7w9xlSMPyrPXNE8xkJ0qli0dgDU6AqZ6E3vsp  
IG291FSdx6ae7KY6wNSH0F1wlFisP2tldQ4Pd9NJDs9v+7PL7G7UrDhnFV43h/tl  
7MBImLI1du2jo3/VWHys3XlksMd7WiC9xF8/yhs9dA1ksEmdJNddJMySuRVbFNqP  
S4K4PNP1C9KHfgvbtoYxJJ0puslt65TI2z24B7n3jvA4CcdkGDMEjAL0fw8G5/5z  
4KLrpqe0J50dbl0wCCbdC6QgJIWwV5hPTlzXkPl7MosWgDHCmJbhuPYALa8U9PDC  
uwADBQgAn9mg/QUQ75eEzUoJPcw2EE8hCuL+4GVo0dbZ+uokBTfSFzA11cRkHPCm  
q5s+rCTN+XBo/IaNg0+TiAKKnme2tDwjN5fFakP/9YpzKIZiYerCdvYhx2ievk1L  
oWHw6T1I6Q2jtd4EZnkZtfYZh0tfZayqKez+ytirNtmem3+KrvNzVNe6/IOLZi48  
6VBPIV/xCGbbnV1MCEj2d9ARHrsL32G93zs5UXboVfVhQG4dwUIPGroUTf0+dGbh  
/p8kBdGmmC39xEBmCof3GW7a6v1Q7R3F4xoZZUrBN2QguuXduEFgKQWo6x7Kfk+V  
Hxwfu+Zb5o0GViCzEgRdBleku7Akg4hJBBgRagAJBQJMH6G0AhsMAAoJEGCSCYFE  
5Ac6r3MAoI5s3fdpvH+Mdeozmk7PhrXzRVvxAJ9PxzT8FJPjcl75lmMyg71egE50  
hA==  
=ghaU  
-----END PGP PUBLIC KEY BLOCK-----  
[rpmadmin@gin ~]$
```

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```
rpmadmin@gin:~  
File Edit View Search Terminal Help  
S4K4PNP1C9KHfgvbtoYxJJ0puslt65TI2z24B7n3jvA4CcdkGDMEjAL0fw8G5/5z  
4KLrpqe0J50dbl0wCCbdC6QgJIWwV5hPTlzXkPl7MosWgDHCmJbhuPYALa8U9PDC  
uwADBQgAn9mg/QUQ75eEzUoJPcw2EE8hCul+4GVo0dbZ+uokBTfSFzA11cRkHPCm  
q5s+rCTN+XBo/IaNg0+TiAKKne2tDwjN5fFakP/9YpzKIZiYerCdvYhx2ievk1L  
oWHw6T1I6Q2jtD4EZnkZtfYZh0tfZayqKez+ytirNtmem3+KrvNzVNe6/IOLZi48  
6VBPIV/xCGbbnV1MCEj2d9ARHrsL32G93zs5UXboVfVhQG4dwUIPGroUTf0+dGbH  
/p8kBdGmmC39xEBmCof3GW7a6v1Q7R3F4xoZZUrBN2QguuXduEFgKQWo6x7Kfk+V  
HxwfU+Zb5o0GViCzEgRdBlekuU7Akg4hJBBgRagAJBQJMH6G0AhsMAAoJEGCSCYFE  
5Ac6r3MAoI5s3fdpvH+Mdeozmk7PhrXzRVvxAJ9PxzT8FJPjcl75lmMyg71egE50  
hA==  
=ghaU  
-----END PGP PUBLIC KEY BLOCK-----  
[rpmadmin@gin ~]$ gpg --list-keys  
/home/rpmadmin/.gnupg/pubring.gpg  
-----  
pub 1024D/44E4073A 2010-06-21  
uid RPM Admin <thomas@redhat.com>  
sub 2048g/A3691705 2010-06-21  
  
[rpmadmin@gin ~]$ echo %_signature gpg >> .rpmmacros  
[rpmadmin@gin ~]$ echo %_gpg_name 44E4073A >> .rpmmacros  
[rpmadmin@gin ~]$ echo %_topdir /home/rpmadmin/redhat >> .rpmmacros  
[rpmadmin@gin ~]$ cp -r /usr/src/redhat/ .  
[rpmadmin@gin ~]$
```



Sign the RPMs

In this example, there are four packages needed. I used the ones from Fedora Core 6.

gtkpod

libgpod

libid3tag

libmp4v2

Have the root user of the rpm signing station import rpmadmin's gpg key

Copy the packages to the rpm signing station

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Sign the RPMs

Have the rpmdadmin account sign them with `rpm --resign`

Check the signature with `rpm --checksig`

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```
rpmadmin@gin:~  
File Edit View Search Terminal Help  
[root@gin ~]# rpm --import /home/rpmadmin/summit.pubkey  
[root@gin ~]# su - rpmadmin  
[rpmadmin@gin ~]$ rpm --resign ipod_stuff/*  
Enter pass phrase:  
Pass phrase is good.  
ipod_stuff/gtkpod-0.99.8-3.fc6.x86_64.rpm:  
gpg: WARNING: standard input reopened  
gpg: WARNING: standard input reopened  
ipod_stuff/libgpod-0.4.2-0.1.fc6.x86_64.rpm:  
gpg: WARNING: standard input reopened  
gpg: WARNING: standard input reopened  
ipod_stuff/libid3tag-0.15.1b-3.fc6.x86_64.rpm:  
gpg: WARNING: standard input reopened  
gpg: WARNING: standard input reopened  
ipod_stuff/libmp4v2-1.5.0.1-3.fc6.x86_64.rpm:  
gpg: WARNING: standard input reopened  
gpg: WARNING: standard input reopened  
[rpmadmin@gin ~]$
```

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```
rpmadmin@gin:~  
File Edit View Search Terminal Help  
[rpmadmin@gin ~]$ rpm -v --checksig ipod_stuff/*  
ipod_stuff/gtkpod-0.99.8-3.fc6.x86_64.rpm:  
  Header V3 DSA signature: OK, key ID 44e4073a  
  Header SHA1 digest: OK (0cbd71812032459c260f384557b6a9c96e9e7849)  
  MD5 digest: OK (0ab7144a2e0f82f75889d7e8a331e152)  
  V3 DSA signature: OK, key ID 44e4073a  
ipod_stuff/libgpod-0.4.2-0.1.fc6.x86_64.rpm:  
  Header V3 DSA signature: OK, key ID 44e4073a  
  Header SHA1 digest: OK (584d5c911f6e58a673eb80b10d38b0abe35aac98)  
  MD5 digest: OK (57e18a2173b0ed0e0f52d37656a89a21)  
  V3 DSA signature: OK, key ID 44e4073a  
ipod_stuff/libid3tag-0.15.1b-3.fc6.x86_64.rpm:  
  Header V3 DSA signature: OK, key ID 44e4073a  
  Header SHA1 digest: OK (81583ae849fa33f46501f1c7786cccbff1754771)  
  MD5 digest: OK (30910adfb86f792640a1495607856fec)  
  V3 DSA signature: OK, key ID 44e4073a  
ipod_stuff/libmp4v2-1.5.0.1-3.fc6.x86_64.rpm:  
  Header V3 DSA signature: OK, key ID 44e4073a  
  Header SHA1 digest: OK (7644011e0f01b87918d4eeec169c180b9b933572)  
  MD5 digest: OK (90376bdf0d8b4bafed4a98856ceccf3)  
  V3 DSA signature: OK, key ID 44e4073a  
[rpmadmin@gin ~]$
```

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Transfer RPMs to Satellite Server and upload

scp the packages to the Satellite server and upload them

In this example

Upload the packages to the channel using:

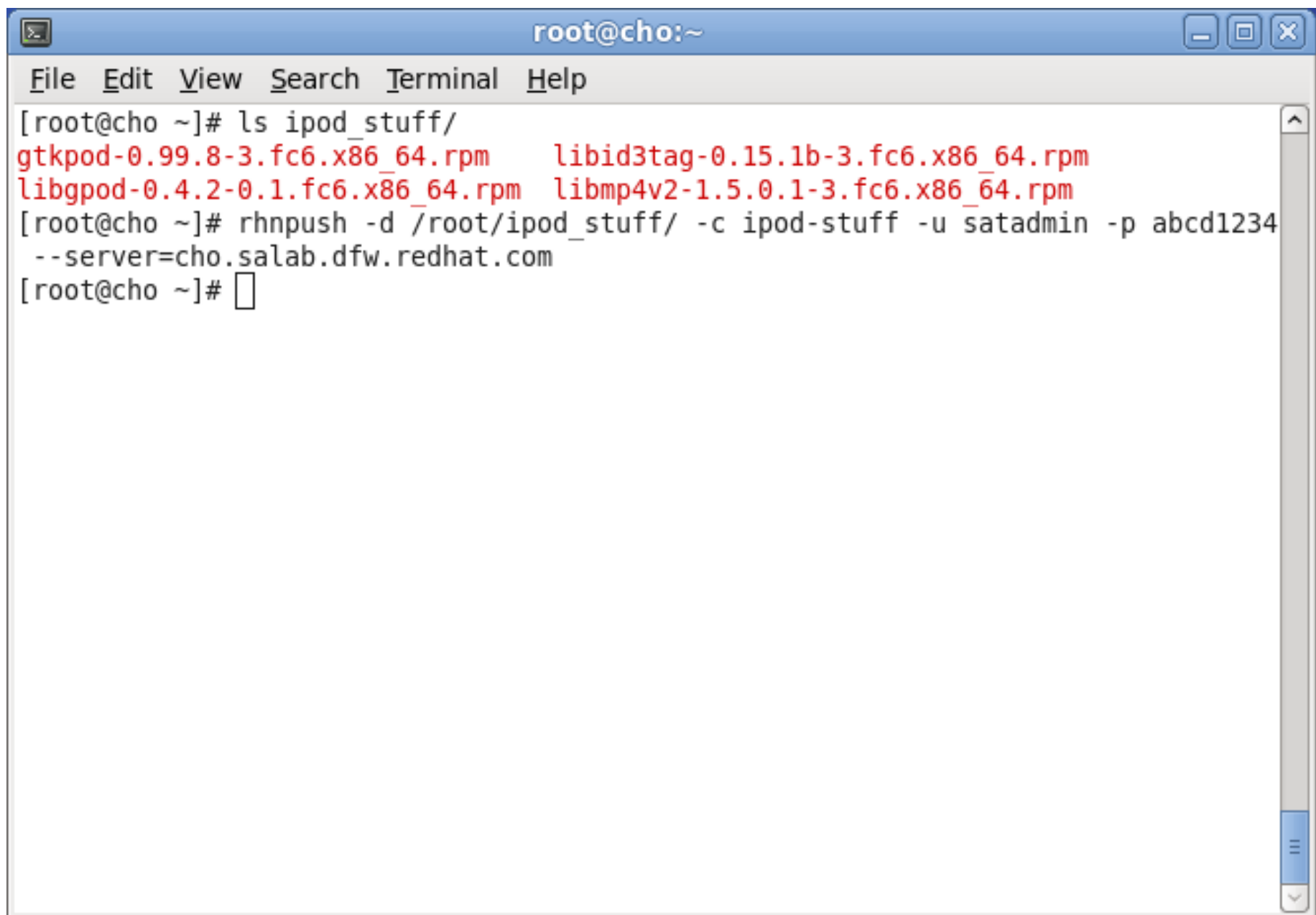
```
rhnpush -d [directory] -c [channel] \  
-u [satellite user] --server [server]
```

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A terminal window titled "root@cho:~" with a menu bar (File, Edit, View, Search, Terminal, Help). The terminal shows the following commands and output:

```
[root@cho ~]# ls ipod_stuff/
gtkpod-0.99.8-3.fc6.x86_64.rpm      libid3tag-0.15.1b-3.fc6.x86_64.rpm
libgpod-0.4.2-0.1.fc6.x86_64.rpm  libmp4v2-1.5.0.1-3.fc6.x86_64.rpm
[root@cho ~]# rhnpush -d /root/ipod_stuff/ -c ipod-stuff -u satadmin -p abcd1234
--server=cho.salab.dfw.redhat.com
[root@cho ~]#
```

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RHN Satellite - Channels - Manage Software Channels - Mozilla Firefox

FileEditViewHistoryBookmarksToolsHelp

←→↺⌂

redhat.comhttps://cho.salab.dfw.redhat.com/rhn/channels/manage/Manag

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English (change)

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USER: satadmin | ORGANIZATION: Red Hat GSS Lab | Preferences | Sign Out

 RED HAT NETWORK SATELLITE

SystemsSearch

OverviewSystemsErrataChannelsConfigurationScheduleUsersMonitoringAdminHelp

NO SYSTEMS SELECTEDMANAGECLEAR

Software ChannelsPackage SearchManage Software ChannelsManage Software Packages

Software Channel Management

[create new channel](#) [clone channel](#)

The following software channels are owned by your organization.

Modify an existing software channel by selecting it from the list below, or create a new software channel.

Filter by Channel Name: Display 500 items per page 1 - 17 of 17

Go

Channel Name	Packages
Red Hat Enterprise Linux (v. 5 for 64-bit x86_64)	9529
└ iPod Stuff	4
DEV Red Hat Enterprise Linux (v. 5 for 64-bit x86_64)	9529
└ DEV Red Hat Network Tools for RHEL Server (v.5 64-bit x86_64)	431
└ DEV RHEL Cluster-Storage (v. 5 for 64-bit x86_64)	167
└ DEV RHEL Clustering (v. 5 for 64-bit x86_64)	134
└ DEV RHEL Virtualization (v. 5 for 64-bit x86_64)	309

Done

Import the GPG Key into the Satellite Server

Systems Tab

Kickstart in left nav

GPG and SSL Keys in left nav

Create new stored key/cert

SUMMIT

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[+ create new stored key/cert](#)

0 1 2 3 4 5 6 7 8 9 A B C D E F G H I J K L M N O P Q **R** S T U V W X Y Z

1 - 1 of 1

1 - 1 of 1

Kickstart Snippets

Create Key

RHN Satellite - Systems - Kickstart - GPG and SSL Keys - Mozilla Firefox

FileEditViewHistoryBookmarksToolsHelp

←→↺⌂

redhat.comhttps://cho.salab.dfw.redhat.com/rhn/keys/CryptoKeysList.do

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RED HAT NETWORK SATELLITE

SystemsSearch

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NO SYSTEMS SELECTEDMANAGECLEAR

OverviewSystemsSystem GroupsSystem Set ManagerAdvanced SearchActivation KeysStored ProfilesCustom System InfoKickstartProfilesBare MetalGPG and SSL KeysDistributionsFile PreservationKickstart Snippets

Key updated.

GPG Public Keys and SSL Certificates

create new stored key/cert

You can refer to these keys and/or certificates in your kickstart profiles in order to install those keys/certificates on systems during a kickstart. A system will need the correct keys to install signed packages, and correct certificate to be kickstarted by an RHN Satellite Proxy Server or RHN Satellite Server. For more information, see the [RHN Reference Guide](#)

0123456789ABCDEFGHIJKLMN**OPQR**STUVWXYZ

Display items per page1 - 2 of 2

Description	Type
RHN-ORG-TRUSTED-SSL-CERT	SSL
Summit GPG Key	GPG

1 - 2 of 2

Done

Put the public key in /var/www/html/pub

Or anywhere else that everyone on the network can get to it.

Since we've added it to the Satellite Server it is available for all machines installed in the future. For existing machines it is simply a matter of having them run a command like:

```
rpm --import \
```

```
https://cho.salab.dfw.redhat.com/pub/summit.pubkey
```

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Index of /pub - Mozilla Firefox

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Index of /pub

Name	Last modified	Size	Description
Parent Directory		-	
RHN-ORG-TRUSTED-SSL-CERT	09-Sep-2009 20:21	5.2K	
bootstrap/	14-May-2010 14:47	-	
export/	25-Jan-2010 07:50	-	
groups.html	27-Apr-2010 22:06	577	
rhn-org-trusted-ssl-cert-1.0-1.noarch.rpm	09-Sep-2009 20:21	4.7K	
rhn-solaris-bootstrap-5.2.0-2-i386-sol9.tar.gz	11-Aug-2008 06:28	9.9M	
rhn-solaris-bootstrap-5.2.0-2-i386-sol10.tar.gz	11-Aug-2008 06:28	9.9M	
rhn-solaris-bootstrap-5.2.0-2-sparc-sol8.tar.gz	11-Aug-2008 06:29	14M	
rhn-solaris-bootstrap-5.2.0-2-sparc-sol9.tar.gz	11-Aug-2008 06:29	14M	
rhn-solaris-bootstrap-5.2.0-2-sparc-sol10.tar.gz	11-Aug-2008 06:29	14M	
rhn-solaris-bootstrap-5.3.0-10-i386-sol9.tar.gz	22-May-2009 08:47	9.9M	
rhn-solaris-bootstrap-5.3.0-10-i386-sol10.tar.gz	22-May-2009 08:47	9.9M	
rhn-solaris-bootstrap-5.3.0-10-sparc-sol8.tar.gz	22-May-2009 08:47	14M	
rhn-solaris-bootstrap-5.3.0-10-sparc-sol9.tar.gz	22-May-2009 08:47	14M	
rhn-solaris-bootstrap-5.3.0-10-sparc-sol10.tar.gz	22-May-2009 08:47	14M	
summit.pubkey	21-Jun-2010 12:59	1.6K	

Apache Server at cho.salab.dfw.redhat.com Port 443

https://cho.salab.dfw.redhat.com/pub/summit.pubkey

Madness break!

Now that we've created a custom channel, we'll let it spin in the autoclave for a while...



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Set up an activation key

Go to the Systems tab

Click on Activation Keys in left nav bar

Click on “create new key”

Description

Key (note the 1-[key] format)

Usage

Base Channels

Add-on Entitlements (note virt vs virt-platform!)

Universal Default

Click “Create Activation Key”

SUMMIT

JBoss
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RHN Satellite - Systems - Activation Keys - Mozilla Firefox

File Edit View History Bookmarks Tools Help

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redhat.comhttps://cho.salab.dfw.redhat.com/rhn/activationkeys/List.do ☆

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🛑

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RHN Satellite - Systems - Activ... +

English (change) Knowledgebase | Documentation

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 [ RED HAT NETWORK SATELLITE]

Systems Search

Overview Systems Errata Channels Configuration Schedule Users Monitoring Admin Help

NO SYSTEMS SELECTED

Overview Systems System Groups System Set Manager Advanced Search Activation Keys Stored Profiles Custom System Info Kickstart



Activation Keys

 ?

[+ create new key](#)

Activation Keys are used to register systems. Systems registered with an activation key will inherit the characteristics defined by that key.

Universal Default

If a universal default activation key is set for your organization, then systems registered to your organization will inherit the properties of that key by default without the need to explicitly specify that key during registration.

You do not currently have a universal default activation key set. To set a key as the universal default, please visit the details page of that key and check off the 'Universal Default?' checkbox.

All Activation Keys

The following activation keys have been created for use by your organization.

0 1 2 3 4 5 6 7 8 9 A B C D E F G H I J **K** L M N O P Q R S T U V W X Y Z

Filter by Description:

1 - 1 of 1 (1 selected)

https://cho.salab.dfw.redhat.com/rhn/activationkeys/Create.do

RHN Satellite - Systems - Activation Keys - Mozilla Firefox

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RHN Satellite - Systems - Activ...

+

Activation Keys

Stored Profiles

Custom System Info

Kickstart

Description

Summit Key

Tip:

Use this to describe what kind of settings this key will reflect on systems that use it. If left blank, this field will be filled in 'None'.

Key:

1- summit-key

Tip:

Leave blank for automatic key generation. Note that the prefix is an indication of the RHN Satellite organization the key is associated with.

Usage:

Tip:

Leave blank for unlimited use.

Base Channels:

RHN Satellite Default

Tip:

Choose "RHN Satellite Default" to allow systems to register to the default Red Hat provided channel that corresponds to their installed version of Red Hat Enterprise Linux. You may also choose particular Red Hat provided channels or custom base channels here, but please note if a system using this key is not compatible with the selected channel, it will fall back to its Red Hat default channel.

Add-On Entitlements:

☒ Monitoring

☒ Provisioning

☐ Virtualization

☒ Virtualization Platform

Universal Default:

☐

Tip:

Only one universal default activation key may be set for this organization. By setting this key as universal default, you will remove universal default status from the current universal default key if it exists. If

Done



Systems

Search

Help

MANAGE

CLEAR

Kickstart

 delete key

Activated Systems

Systems registered with this activation key will inherit the settings listed below.

Summit Key

Key:

1- summit-key

Tip: Leave blank for automatic key generation. Note that the prefix is an indication of the RHN Satellite organization the key is associated with.

Make Sure You Check the “Configuration File Deployment” Checkbox

This will automatically add some packages under the “Packages” tab.

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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466
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RHN Satellite Default

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- ☒ Monitoring
- ☒ Provisioning
- ☐ Virtualization
- ☒ Virtualization Platform

☒☐

Note about Base Channel

“Default” just means use the channel which is the default for the distro installed on disk.

If you want to use one of the cloned channels we created earlier, change it here.

In this example we're changing this key to register systems to the DEV channel

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RHN Satellite - Systems - Activation Keys - Details - Mozilla Firefox

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Stored Profiles

Custom System Info

Kickstart

Description

Summit Key

Tip: Use this to describe what kind of settings this key will reflect on systems that use it. If left blank, this field will be filled in 'None'.

Key:

1- summit-key

Tip: Leave blank for automatic key generation. Note that the prefix is an indication of the RHN Satellite organization the key is associated with.

Usage:

Tip: Leave blank for unlimited use.

Base Channels:

DEV Red Hat Enterprise Linux (v. 5 for 64-bit x86_64)

Tip: Choose "RHN Satellite Default" to allow systems to register to the default Red Hat provided channel that corresponds to their installed version of Red Hat Enterprise Linux. You may also choose particular Red Hat provided channels or custom base channels here, but please note if a system using this key is not compatible with the selected channel, it will fall back to its Red Hat default channel.

Add-On Entitlements:

☒ Monitoring

☒ Provisioning

☐ Virtualization

☒ Virtualization Platform

Configuration File Deployment:

☒

Tip: Deploy configuration files to systems when they are registered with this activation key.

Done

Customize the activation key

Click on the key name (it's a hyperlink)

Go through Details, Child Channels, Packages, Configuration, Groups and Activated Systems sub-tabs

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Search

CLEAR



 delete key

Activated Systems

Customize the activation key

Add child channels

Make sure you add the channel for your custom content!

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SystemsSearch

OverviewSystemsErrataChannelsConfigurationScheduleUsersMonitoringAdminHelp

NO SYSTEMS SELECTEDMANAGECLEAR

OverviewSystemsSystem GroupsSystem Set ManagerAdvanced SearchActivation KeysStored ProfilesCustom System InfoKickstart



Summit Key?

delete key

DetailsChild ChannelsPackagesConfigurationGroupsActivated Systems

Any system registered using this activation key will be subscribed to the selected child channels.

RHEL Clustering (v. 5 for 64-bit x86_64)RHEL FasTrack (v. 5 for 64-bit x86_64)RHEL Hardware Certification (v. 5 for 64-bit x86_64)RHEL Hardware Certification (v. 5 for 64-bit x86_64) BetaRHEL Optional Productivity Apps (v. 5 for 64-bit x86_64)RHEL Supplementary (v. 5 for 64-bit x86_64)

Update Key

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Red Hat Network release 5.3.0

Done

Madness from the method!

Note that because we checked the boxes for virtualization and configuration file deployment, we automatically get some packages added.

I recommend you add the osad package as well so you can issue remote commands from the Satellite server once the system is activated



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RHN Satellite - Systems - Activation Keys - Packages - Mozilla Firefox

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Systems

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NO SYSTEMS SELECTEDMANAGECLEAR

OverviewSystemsSystem GroupsSystem Set ManagerAdvanced SearchActivation KeysStored ProfilesCustom System InfoKickstart

Summit Key?

delete key

DetailsChild ChannelsPackagesConfigurationGroupsActivated Systems

Any system registered with this activation key will have the packages listed below installed, if those packages are available. Package names may be listed as package name only or may include an extension to specify the desired architecture. There should only one package name included per line.

Enter package names below

rhv-virtualization-host
rhncfg-client
rhncfg-actions
rhncfg
osad
|

Update Key

MANAGE

CLEAR

 delete key

Kickstart

[List/Unsubscribe from Channels](#) [Subscribe to Channels](#) [View/Modify Rankings](#)

Continue

RHN Satellite - Systems - Activation Keys - Configuration - List/Unsubscribe from Channels - Mozilla Firefox

FileEditViewHistoryBookmarksToolsHelp

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NO SYSTEMS SELECTEDMANAGECLEAR

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Channel Subscriptions successfully changed for Summit Key

🔑Summit Key?

🗑️delete key

DetailsChild ChannelsPackagesConfigurationGroupsActivated Systems

List/Unsubscribe from ChannelsSubscribe to ChannelsView/Modify Rankings

⚙️Configuration Channels

Below are all the centrally-managed configuration channels to which this activation key is subscribed. They are in priority order with the highest-ranked channels appearing first in the list.

0123456789ABCDEFGHIJKLMNOPQRSTUUVWXYZ

Filter by Channel Name:Display500items per page1 - 1 of 1 (0 selected)

Go

☐

Channel Name

Files & Directories

Rank

☐

🖨️

Summit Config Channel

1 file and 1 directory

1

Update List

Select All

1 - 1 of 1 (0 selected)

Done

RHN Satellite - Systems - Activation Keys - Groups - Join - Mozilla Firefox

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Summit Key

delete key

DetailsChild ChannelsPackagesConfigurationGroupsActivated Systems

List / LeaveJoin

System Group Membership

Below is a list of system groups available to this activation key. To join a system group, check its checkbox. Make sure you click the "Join Selected Groups" button when you are finished with your changes.

0123456789ABCDEFGHIJKLMNOPQRSTUUVWXYZ

Filter by Group Name:

Display500items per page

1 - 1 of 1 (1 selected)

☒

Group Name

☒Summit Group

Update List

Select All

1 - 1 of 1 (1 selected)

Join Selected Groups

Done

Note about Base Channel

In the next slide I've created activation keys for each of the cloned channels we discussed earlier

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🔑

Activation Keys?

➕ create new key

Activation Keys are used to register systems. Systems registered with an activation key will inherit the characteristics defined by that key.

Universal Default

If a universal default activation key is set for your organization, then systems registered to your organization will inherit the properties of that key by default without the need to explicitly specify that key during registration.

You do not currently have a universal default activation key set. To set a key as the universal default, please visit the details page of that key and check off the 'Universal Default?' checkbox.

All Activation Keys

The following activation keys have been created for use by your organization.

0123456789ABCDEFGHIJKLMN**OPQR**STUVWXYZ

Filter by Description: 1 - 5 of 5 (5 selected)

Enabled?	Description	Key	Usage
☒	DEV Activation Key	1-dev-key	0/(unlimited)
☒	PROD Activation Key	1-prod-key	0/(unlimited)
☒	QA Activation Key	1-qa-key	0/(unlimited)
☒	Summit Key	1-summit-key	0/(unlimited)

Done

Madness break!

Now that the activation key is set up, we'll leave it in the centrifuge for a bit...



SUMMIT

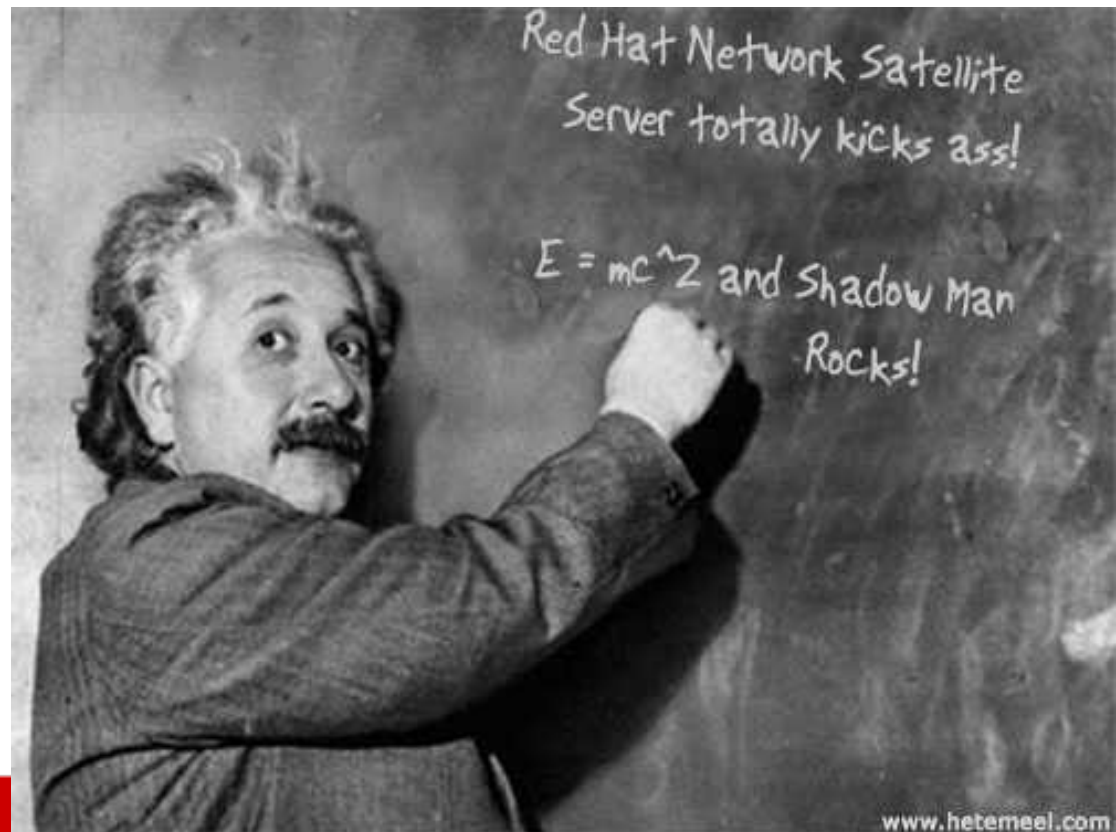
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Sanity! Tying it all together

As I indicated, the seemingly random steps we've defined so far (config channels, activation keys, system groups, cloned channels, custom channels) are going to all come together in the kickstart process.



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Kickstart

System Tab

Kickstart in left nav

Create a new kickstart

- Kickstart Profile Label
- Base Channel
- Kickstartable Tree
- Virtualization Type

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⬇

Kickstart Overview

create new kickstart profile

upload new kickstart file

Kickstart Summary

Red Hat Enterprise Linux 5 Kickstart Profiles1

Kickstart Actions

View a List of Kickstart Profiles

Create a New Kickstart Profile

Upload a New Kickstart File

Systems Currently Kickstarting

Kickstarting Systems

Status

Last Change

Unregistered System

Kickstart complete.

17 days ago

1 - 1 of 1

https://cho.salab.dfw.redhat.com/rhn/kickstart/CreateProfileWizard.do

Kickstart

This this case, a RHEL 5.4 machine

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Step 1: Create Kickstart Profile

A kickstart file is a simple text file containing a list of items, each identified by a keyword, that answers the questions an installer needs in order to successfully install Red Hat Enterprise Linux. A kickstart profile includes a kickstart file, as well as other saved options such as the version of Red Hat Enterprise Linux to be installed and the location of the installation files.

Label*:summit-kickstart

Base Channel*:Red Hat Enterprise Linux (v. 5 for 64-bit x86_64)

Kickstartable Tree*:ks-rhel-x86_64-server-5-u4

Virtualization Type:None

Next

Done

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Step 2: Distribution File Location

In order to install Red Hat Enterprise Linux during kickstart, the Red Hat Enterprise Linux installation files must be available to the kickstarting system via network connection. You can make these available either via http or ftp.

Default Download Location:

☒ /ks/dist/ks-rhel-x86_64-server-5-u4

Custom Download Location:

Previous

Next

Done

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GPG and SSL Keys

Distributions

File Preservation

Kickstart Snippets

Step 3: Root Password

The kickstart profile will need to have a root password for the system(s) to be kickstarted in order to complete the kickstart process.

New Root Password*:

Verify New Root Password*:

Previous

Finish

Done

Kickstart

Once complete, you can define logging and ks.cfg preservation and kernel options.

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Kickstart Details

This kickstart profile may be edited using the form provided below. Entries marked with an asterisk (*) are required.

Kickstart Label*:

summit-kickstart

Tip: The label field should not be easily guessable, since it could be used to expose information about this kickstart profile to a 3rd p

Operating System:

Red Hat Enterprise Linux (v. 5 for 64-bit x86_64) (Change)

Virtualization Type:

None

NOTE: Changing the Virtualization Type may require changes to the kickstart profile's bootloader and partition options, potentially overwriting user customizations. Please visit the Partitioning tab to verify the new settings.

Active:

☒ You cannot kickstart a system registered to RHN Satellite using an inactive kickstart profile. However, the kickstart files for inactive kickstart profiles are still available for manual download and may be used for bare metal kickstarts.

Log custom post scripts:

☒ If selected, all output of custom post scripts will be logged to /root/ks-post.log.

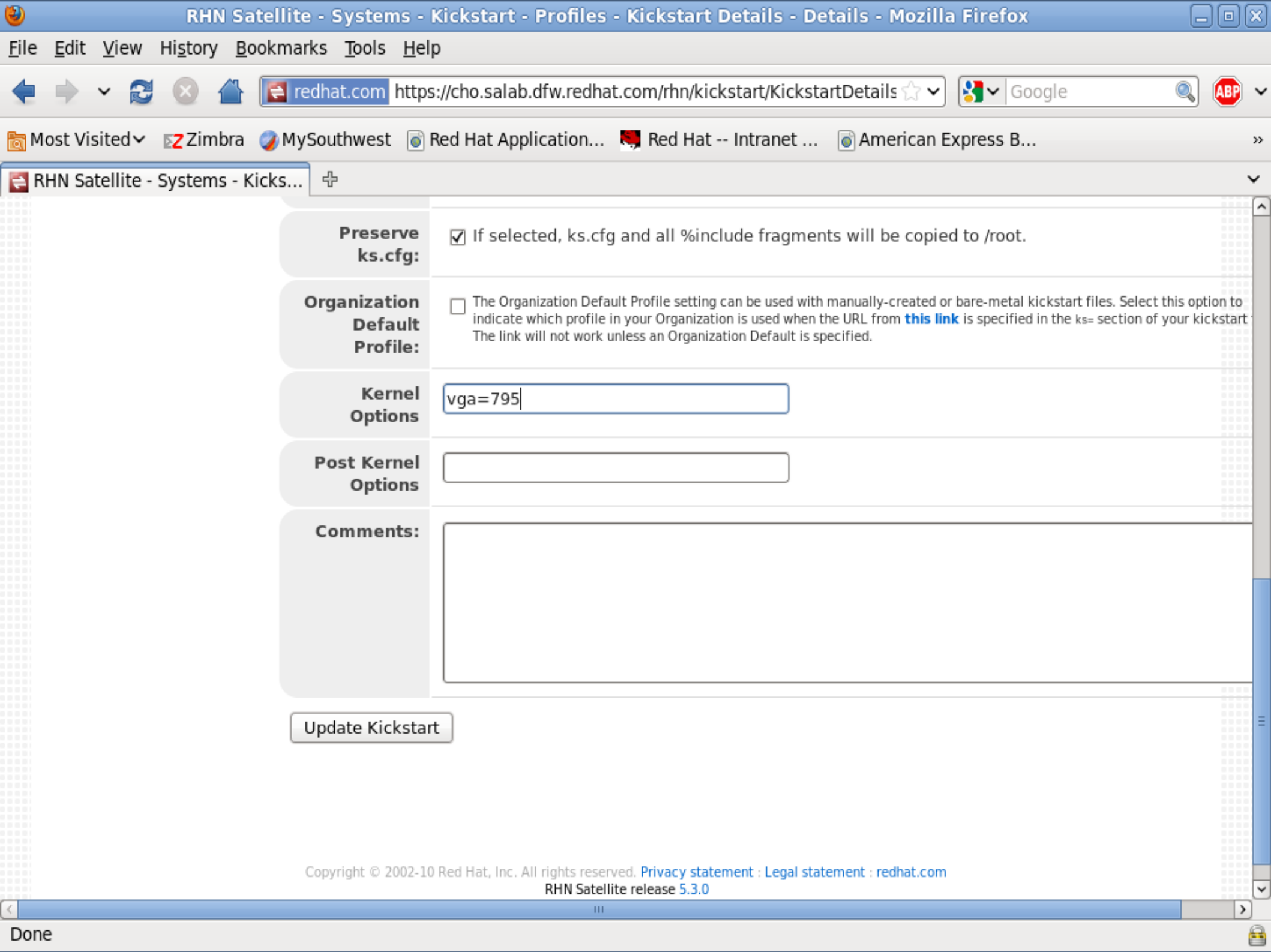
Log custom pre scripts:

☒ If selected, all output of pre scripts will be logged to /root/ks-pre.log.

Preserve ks.cfg:

☒ If selected, ks.cfg and all %include fragments will be copied to /root.

Done

**Preserve
ks.cfg:**☒ If selected, ks.cfg and all %include fragments will be copied to /root.**Organization
Default
Profile:**☐ The Organization Default Profile setting can be used with manually-created or bare-metal kickstart files. Select this option to indicate which profile in your Organization is used when the URL from [this link](#) is specified in the ks= section of your kickstart. The link will not work unless an Organization Default is specified.**Kernel
Options****Post Kernel
Options****Comments:**

Kickstart

Under Kickstart/Operating System you can define which child channels you want available to the installer.

If you don't specify an activation key, you can turn on repositories via the “Child Channels” section (but you should always use an activation key).

The “Repositories” section will turn on repositories for the %files section.

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Modify Operating System

You can modify the software this kickstart profile will deploy below.

Base Channel*

Red Hat Enterprise Linux (v. 5 for 64-bit x86_64) ⌵

Tip: Changing the base channel will require you to reselect any child cannels that may be associated with this profile.

Child Channels*

☐ rhel-x86_64-server-cluster-5

☐ rhel-x86_64-server-cluster-storage-5

☐ rhel-x86_64-server-productivity-5

☐ rhel-x86_64-server-supplementary-5

☐ rhel-x86_64-server-vt-5

☐ rhn-tools-rhel-x86_64-server-5

☐ jbappplatform-4-x86_64-server-5-rpm

☐ jbappplatform-4.3.0-x86_64-server-5-rpm

☐ redhat-rhn-proxy-5.2-server-x86_64-5

☐ redhat-rhn-proxy-5.3-server-x86_64-5

☐ rhel-x86_64-server-5-appstk-2

☐ rhel-x86_64-server-5-mrg-grid-1

☐ rhel-x86_64-server-5-mrg-management-1

Done

- 1

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----

100

100

10

—

Kickstart Details/Advanced Options

Pretty much anything you can do in ks.cfg is an option here

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Advanced Options

You may wish to modify the following options for special-case kickstart scenarios. We recommend consulting the Red Hat Enterprise Linux System Administration Guide for detailed documentation of all of these options.

autostep:

☐

interactive:

☐

install:

☒

upgrade:

☐

text:

☒

network:

☒

--bootproto dhcp

cdrom:

☐

harddrive:

☐

nfes:

☐

Done

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reboot:

☒

skipx:

☒

xconfig:

☐

key:

☒

49af89414d147589

ignoredisk:

☐

autopart:

☐

cmdline:

☐

firstboot:

☐

graphical:

☐

iscsi:

☐

iscsiname:

☐

logging:

☐

monitor:

☐

multinath:

☐

Done

Kickstart Details/Bare Metal Kickstart

You can get the URL to the virtual kickstart file here.

This is needed to set up PXE or boot CDs. Remember that there is not actually a physical file - it is just a web representation of entries in the database.

You can also associate kickstarts with a range of IP addresses in this interface.

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 clone kickstart  delete kickstart

[Kickstart File](#)

Bare Metal Kickstart

In order to kickstart "bare metal systems", you will need to provide them with a boot image that is compatible with the version of the operating system you are kickstarting to via boot CD.

Once these systems have booted using the appropriate image, you will need to provide a kickstart file. You may use the following URL in your Boot CD or in your PXE configuration to provide these systems with the kickstart file associated with this kickstart profile:

<http://cho.salab.dfw.redhat.com/ks/cfg/org/1/label/summit-kickstart>

Resource: The RHN Reference Guide Kickstart section

Alternatively, you may associate each of your kickstart profiles with particular ip ranges. Then, you can provide bare metal systems with a single URL that will provide each system the kickstart file associated with

System Details/Details

“Kickstart Network Connection” is only used for auto-kickstart

SELinux (Please see my “SELinux for Mere Mortals” presentation and set it to Enforcing)

Enable RHN Configuration Management

Enable RHN Remote Commands

Root password

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SELinux:

☒ Enforcing - SELinux policy enforced

☐ Permissive - SELinux prints warnings instead of enforcing

☐ Disabled - SELinux is fully disabled

RHN Satellite Preferences

Enable RHN Satellite Configuration Management:

☒

Tip: Enabling this will allow you to deploy configuration files from RHN Satellite to any system that uses this kickstart profile. If you do not use RHN Satellite configuration management, it is a good security practice to leave this box unchecked. You can always enable it on individual systems later.

Enable RHN Satellite Remote Commands:

☒

Tip: Enabling this will allow you to execute commands remotely from RHN Satellite on any system that uses this profile. It is a good security practice to leave this box unchecked unless you are sure you will use the remote command feature. You can always enable it on individual systems later.

Root Password

New Root

Done

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RHN Satellite Preferences

Enable RHN Satellite Configuration Management:

☒

Tip: Enabling this will allow you to deploy configuration files from RHN Satellite to any system that uses this kickstart profile. If you do not use RHN Satellite configuration management, it is a good security practice to leave this box unchecked. You can always enable it on individual systems later.

Enable RHN Satellite Remote Commands:

☒

Tip: Enabling this will allow you to execute commands remotely from RHN Satellite on any system that uses this profile. It is a good security practice to leave this box unchecked unless you are sure you will use the remote command feature. You can always enable it on individual systems later.

Root Password

New Root Password:

Verify New Root Password:

Update System Details

System Details/Locale

Set time zone and whether the clock is set to UTC.

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Locale

You can modify the following options to specify Locale options:

Timezone:Hardware Clock uses UTC: ☐[Update Locale Preferences](#)

System Details/Partitioning

You can do LVM, RAID, etc. here.

I strongly recommend you cheat - set up one system by hand and then grab the partitioning info which was written in `/root/anaconda-ks.cfg`

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Edit Hard Drive Partitions

You may edit the partitions that will be created on systems kickstarted with this system below:

Partition Details*

partition pv.01 --size=1000 --grow

partition /boot --fstype=ext3 --size=200

partition swap --size=1000 --maxsize=2000

volgroup myvg pv.01

logvol / --vgname=myvg --name=rootvol --size=1000 --grow

Update Partitions

Done

System Details/GPG & SSL

Here is where you can add in the GPG key you defined earlier

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Kickstart Details

Below is a list of the GPG and SSL keys you have created. Selected keys will be imported during the %post section of all kickstarts scheduled using this profile.

1 - 2 of 2 (2 selected)

☒	Description	Type
☒	RHN-ORG-TRUSTED-SSL-CERT	SSL
☒	Summit GPG Key	GPG

Update List

Select All

Unselect All

1 - 2 of 2 (2 selected)

Update keys

Done

Software/Package Groups

Add individual files by name

Add package groups with @ [group]

Get groups via “yum grouplist” or look at the comps*.xml files in each repository on the installation media

/Server, /Cluster, ClusterStorage and /VT

Skip files by using “-name”

Note that if you “-name” a package which is a prerequisite for another package, the prerequisite file **will** get installed.

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Package Groups

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Install Packages by Package Name and Group

Specify below the packages and package groups you'd like to install on systems during kickstart. Please list packages and groups one per line. For more information please see *The Red Hat Enterprise Linux System Administration Guide*. If you would prefer to specify packages to be installed by package profile sync, please visit the *Package Profiles* tab to change the kickstart software installation method.

Note: only packages available in your Enterprise Linux install tree should be specified here. To install packages available in RHN Satellite software channels, please associate an appropriate activation key with this kickstart profile in the *Activation Keys* tab.

@ Base
@ Clustering
@ ClusterStorage
nmap
screen
-tcsh

Update Packages

Done

Software/Package Profiles

You can capture a profile of a “golden image” system and then use it as a template.

We'll come back to this in the section on package profiles.

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You may sync kickstarting systems to the package profile of a system registered to RHN Satellite by choosing a package profile below. **Note:** This list will only show package profiles that were made against the same Base Channel chosen on the [Operating System](#) page.

Description

No kickstart profiles.

Tip: Make sure you subscribe systems to the appropriate software channels during kickstart so they have access to the packages in the package profile you sync them to. Visit the [Activation Keys](#) tab to subscribe systems to software channels during kickstart.

Clear Package Profile

Update profile

Done

Activation Keys

Here you can associate the keys you defined earlier with your kickstart.

You can associate multiple keys to “stack” or mix-n-match capabilities.

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You can associate one or more activation keys with this kickstart profile. Activation keys will allow systems kickstarted with this profile to automatically register to RHN Satellite, gain RHN Satellite service level entitlements, subscribe to specified software and configuration channels, and subscribe to specified system groups. Activation keys can also specify packages to be installed on a system. Please consider how this may affect your package selection in this profile's [Software](#) tab.

1 - 5 of 5 (1 selected)

☐	Description	Key	Usage
☐	DEV Activation Key	1-dev-key	(unlimited)
☐	PROD Activation Key	1-prod-key	(unlimited)
☐	QA Activation Key	1-qa-key	(unlimited)
☒	Summit Key	1-summit-key	(unlimited)
☐	kvm-host-key	1-kvm-host-key	(unlimited)

Update List

Select All

1 - 5 of 5 (1 selected)

Note: The selection of incompatible activation keys can prevent a system from registering properly after it is kickstarted. You'll want to review the RHN Reference Guide section on using multiple activation keys before making use of this feature.

Warning: Any child channel subscriptions associated with this profile will be overridden if any activation keys are

Done

Scripts

You can add %pre, %post and %post --nochroot scripts here.

You can choose your interpreter - bash, perl, python, etc.

%pre scripts are run before partitioning or installation.
Great place to write logic for partitioning.

%post --nochroot scripts are run while the target disk is still mounted under /mnt/sysimage

%post scripts are run after the installer chroot's /mnt/sysimage to /



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Kickstart Script Details

You can edit the pre and post scripts for this kickstart below. Kickstart pre-scripts are run immediately after a kickstart file has been parsed on a system. You can access the network in this section, but you must use IP addresses (name service has not been configured at this point). For more details on kickstart pre scripts, please refer to the **Red Hat Enterprise Linux System Administration Guide**.

You can also edit the post script for this kickstart below. First, commands related to RHN Satellite will automatically be performed (for example, esystem registration to RHN Satellite). Next, the non-chroot post script will be executed, and finally the post script will be executed. For more details on kickstart post scripts, please refer to the **Red Hat Enterprise Linux System Administration Guide**.

Kickstart Script Scripting Language

Scripting Language

Examples: '/usr/bin/python' '/usr/bin/perl'.
Tip: Leave this field blank to use the install-time shell as language for your post script.

Kickstart Script

Script Contents*

1

echo "Private system. Trespassers will be violated" > /etc/motd

Done

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Position:Ln 5, Ch 28Total:Ln 5, Ch 167

☒ Toggle editor

Script Execution Time*

Post Script⌵

Tip: This specifies when the script gets ran (before or after kickstart).

nochroot

☐

Template

☐

Tip: Enable this to enable templating on this script using cobbler.

Update Kickstart

Done

Kickstart File

This is **not** the URL for kickstart, this is merely a way for you to check out what the final product looks like. The URL to the kickstart “file” can be gotten under Kickstart Details/Bare Metal Kickstart

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Kickstart: summit-kickstart

clone kickstart

delete kickstart

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System Details

Software

Activation Keys

Scripts

Kickstart File

Kickstart File

The kickstart file generated by this kickstart profile is viewable below:

Download Kickstart File

Kickstart config file generated by RHN Satellite Config Management

Profile Label : summit-kickstart

Date Created : 2010-06-21 15:41:08.0

install

text

network --bootproto dhcp

url --url http://cho.salab.dfw.redhat.com/ks/dist/ks-rhel-x86_64-server-5-u4

lang en_US

keyboard us

zerombr

clearpart --all

part /boot --fstype=ext3 --size=200

part pv.01 --size=1000 --grow

part swap --size=1000 --maxsize=2000

volgroup myvg pv.01

logvol / --vgname=myvg --name=rootvol --size=1000 --grow

bootloader --location mbr

timezone --utc America/Chicago

auth --enablemd5 --enablesshadow

rootpw --iscrypted \$1\$a.7mofQm\$7C2sj5jxGw7Im56419sSL0

selinux --permissive

http://cho.salab.dfw.redhat.com/cblr/svc/op/ks/profile/summit-kickstart:1:RedHatGSSLab

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```
install
text
network --bootproto dhcp
url --url http://cho.salab.dfw.redhat.com/ks/dist/ks-rhel-x86_64-server-5-u4
lang en_US
keyboard us
zerombr
clearpart --all
part /boot --fstype=ext3 --size=200
part pv.01 --size=1000 --grow
part swap --size=1000 --maxsize=2000
volgroup myvg pv.01
logvol / --vgname=myvg --name=rootvol --size=1000 --grow
bootloader --location mbr
timezone --utc America/Chicago
auth --enablemd5 --enablesshadow
rootpw --iscrypted $1$a.7mofQm$7C2sj5jxGw7Im56419sSL0
selinux --permissive
reboot
firewall --disabled
skipx
repo --name=Cluster --baseurl=http://cho.salab.dfw.redhat.com/ks/dist/ks-rhel-x86_64-server-5-u4/Cluster
repo --name=ClusterStorage --baseurl=http://cho.salab.dfw.redhat.com/ks/dist/ks-rhel-x86_64-server-5-u4/ClusterS
repo --name=VT --baseurl=http://cho.salab.dfw.redhat.com/ks/dist/ks-rhel-x86_64-server-5-u4/VT
key 49af89414d147589

%packages

@ Base
@ Clustering
@ ClusterStorage
nmap
screen
-tcsh

%pre
```

http://cho.salab.dfw.redhat.com/cblr/svc/op/ks/profile/summit-kickstart:1:RedHatGSSLab

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```
# --Begin RHN Satellite command section--
cat > /tmp/gpg-key-1 <<'EOF'
-----BEGIN PGP PUBLIC KEY BLOCK-----
Version: GnuPG v1.4.5 (GNU/Linux)

mQGibEwfoakRBADv6aS7Y9AXt5LVXXTaxFR30Strp3mq4AekEW8jsb6LXFjo1Jsh
uw4UZ5gtmom3NsC2f4nYfSGsNdbQG60d3Rq2Do0vA+oI1HkQ7KwNfP2Gm25lBYqR
rVRJQj340aJO2Xkd345ykG8xJ/znfbw80jMG6yrLrh6k+kRo8B0eeXVZAwCg7xdE
tG9P7tVlBZA0gBMRPSp70j8EAJTAryONKtPYcLJEEnycTiaFxnU2cuQAH7bt016
qrZeD3mU8vQ6ME1atvveZu0vizkfnnIMP2zkmBDbJk00Weo5vRDorgP7pdJLDhRq
1/bZLV0Sa5aQV4PeB0pGB6bYsNZbIZBPWZGnigu0bSIVDVFiqXSXmco0gqhpeOSE
KGF0A/kBCAQTEutQAT+bPLiewlm3ovH13t61FiFbw9MlyfeHLZmgOqEtZZEixxQH
TA47E21VEQtK5pvnPwxWF9/E4a+EjLGyMLOPr6dglSm4waf2Xx0M5DepZ+433+un
vYh5SE7De0tnPk7ie4HHU4ClfD7jm9cEi30SJyGM+RLkdNeDPbQdU1BNIEFkbWlu
IDx0aG9tYXNacmVkaGF0LmNvbT6IYAQTEQIAIAUCTB+hqQIbAwYLCQgHawIEFQII
AwQWAgMBAh4BAheAAoJEGCSCYFE5Ac6xNYAnjT52jcTXziYlW4eNqfhczCQbusE
AJ9PxHGyAY5Fk5Fowl9fLIggWd74ELkCDQRMH6G0EAgAuxlM8JCOW4wmgos8jxLO
Rdzu6WkypU8WkHgBmrF+rcL01di7w9xlSMPyrPXNE8xkJ0qli0dgDU6AQZ6E3vsp
IG291FSdx6ae7KY6wNSH0F1w1FisP2tldQ4Pd9NJDs9v+7PL7G7UrDhnFV43h/tl
7MBIm1I1du2jo3/VwHys3XlksMd7wic9xF8/yhs9dA1ksEmdJNddJMySuRvbnFqP
S4K4PNP1C9KHfgvbtoYxJJ0puslt65TI2z24B7n3jvA4CcdkGDMEjALOfw8G5/5z
4KLrpqe0J50db10wCCbdc6QgJIWwV5hPTLzXkPl7MoswgDHCmJbhuPYALa8U9PDC
uwADBQgAn9mg/QUQ75eEzUoJPcw2EE8hCul+4GVo0dbZ+uokBTfSFzA11cRkHPCm
q5s+rCTN+XBo/IaNg0+TiAKKnme2tDwjN5fFakP/9YpzKIZiYerCdvyhx2ievk1L
oWHw6T1I6Q2jtD4EZnkZtfYZh0tfZayqKez+ytirNtmem3+KrvNZVNe6/IOLZi48
6VBPIV/xCGbbnV1MCEj2d9ARHrsL32G93zs5UXboVfVhQG4dwUIPGroUTf0+dGbH
/p8kBdGmmC39xEBmCof3Gw7a6v1Q7R3F4xoZZURBN2QguuXduEFgKQWo6x7Kfk+V
Hxwfu+Zb5o0GViCzEgRdBLEkU7Akg4hJBBgRagAJBQJMH6G0AhsMAAoJEGCSCYFE
5Ac6r3MAoI5s3fdpvH+Mdeozmk7PhrXzRVvxAJ9PxzT8FJPjcl75lmMyg71egE50
hA==
=ghau
-----END PGP PUBLIC KEY BLOCK-----

EOF
# gpg-key1
rpm --import /tmp/gpg-key-1
cat > /tmp/ssl-key-1 <<'EOF'
Certificate:
```

http://cho.salab.dfw.redhat.com/cblr/svc/op/ks/profile/summit-kickstart:1:RedHatGSSLab

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2E:30:99:75:44:C1:a3:D5:a1:22:21:0a:62:11:57:ec:08:f7:0d:51:d9:3b:e2:4a:b9:b2:81:cd:a9:f6:a8:3a:96:69:2e:f4:0d:47:43:d1:30:41:2b:32:87:85:95:5d:33:11:c9:f5:95:dc:3e:44:fc:de:33:49:d6:6e:98:5a:7d:fe:c4:28:d1:72:53:c3:45:7e:db:9e:d1:4a:48:9a:11:c5:66:c5:85:b7:d0:e6:10:cf:3a:0d:41:f5:d5:d4:c1:ec:d7:84:60:a6:c4:6f:3f:99:90:35:f3:fb:dc:33:d4:41:d6:3d:e1:05:bc:5c:49:05:64:f6:f0:4b:58:54:cb:03:0c:71:6c:58:70:3f:c4:2c:96:4f:e2:cc:dd:a4:ef:7d:5f:e7:49:da:76:95:a1:6e:4d:52:7a:6f:f6:12:0e:c8:7f:bc:26:3d:be:e1:b6:0f:1e:62:93:0e:de:2d:5f:f1:28:18:1a:4e:c4:c1:78:4f:b0:c8:94:ec:78:f2:b1:1d:3a:00:87:d3:48:e1:4c:4b:2d:d1:52:6d:c4:c0:04:2a:fa:51

Exponent: 65537 (0x10001)

X509v3 extensions:

X509v3 Basic Constraints:

CA:TRUE

X509v3 Key Usage:

Digital Signature, Key Encipherment, Certificate Sign

X509v3 Extended Key Usage:

TLS Web Server Authentication, TLS Web Client Authentication

Netscape Comment:

RHN SSL Tool Generated Certificate

X509v3 Subject Key Identifier:

F3:F2:52:FC:58:0B:24:CB:5E:B9:DB:E1:47:ED:9F:52:E1:E3:CF:9C

X509v3 Authority Key Identifier:

keyid:F3:F2:52:FC:58:0B:24:CB:5E:B9:DB:E1:47:ED:9F:52:E1:E3:CF:9C

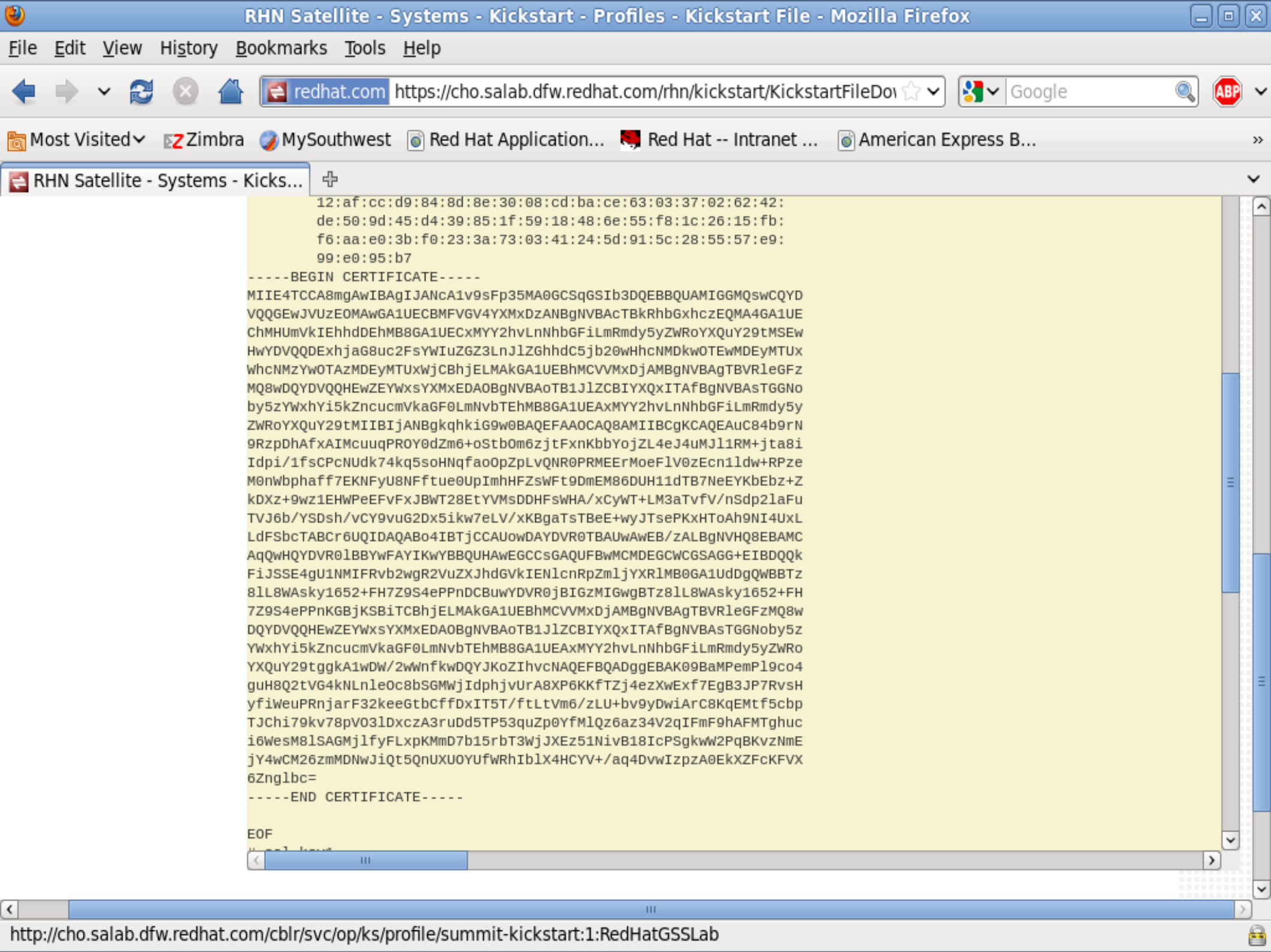
DirName:/C=US/ST=Texas/L=Dallas/O=Red Hat/OU=cho.salab.dfw.redhat.com/CN=cho.salab.dfw.redhat.co

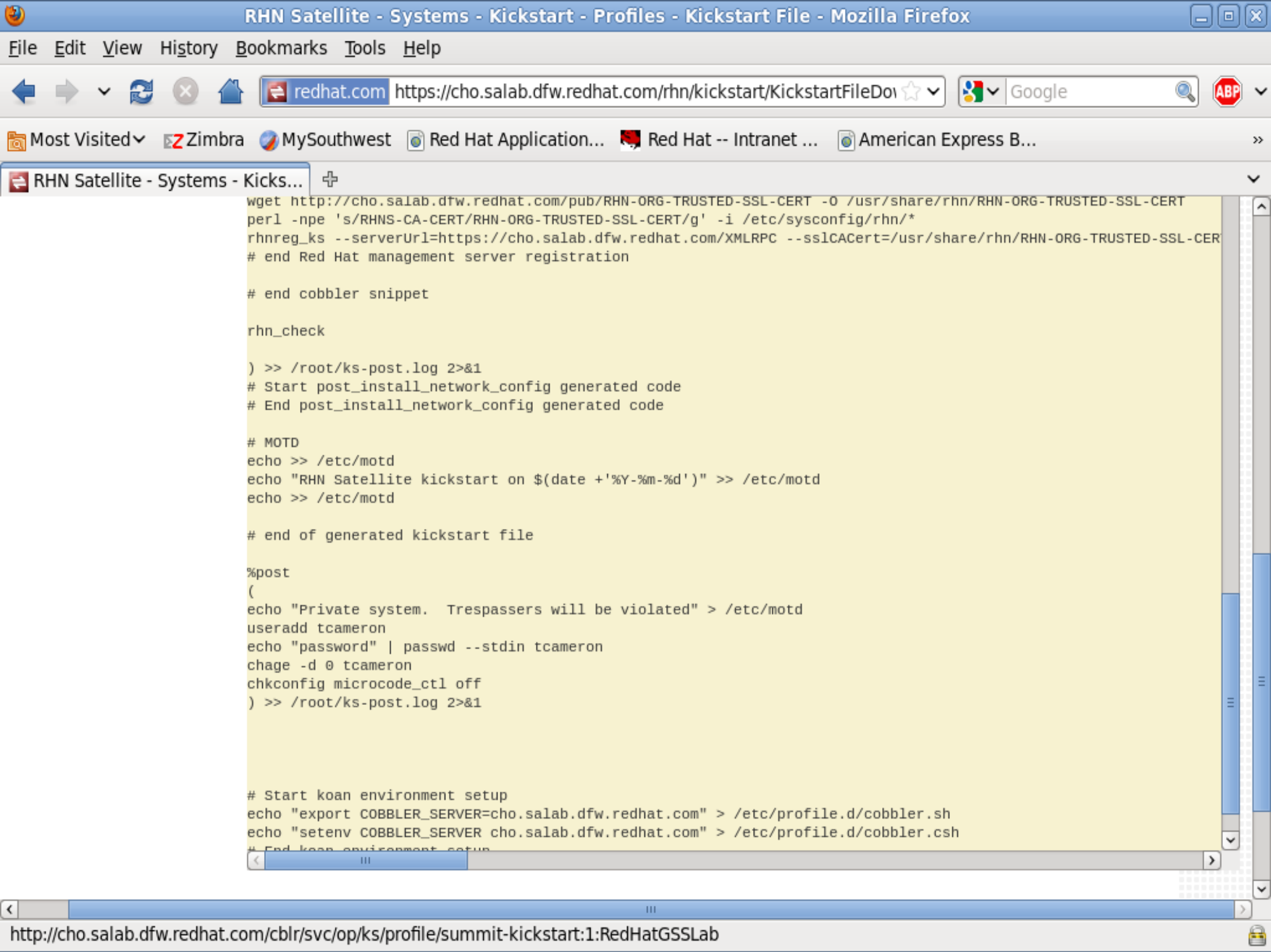
serial:D7:00:D6:FF:6C:16:9D:F9

Signature Algorithm: sha1WithRSAEncryption

ad:3d:05:a3:0f:7a:63:e5:f5:ca:38:82:e1:fc:43:6b:55:1b:89:0d:2e:79:5e:39:cf:1b:48:63:16:8c:87:69:86:3b:d4:ac:0f:17:3f:a2:8a:7d:36:63:e1:ec:d7:c0:4c:5f:ec:48:01:dc:93:fb:46:fb:07:c9:f8:96:7a:e3:d1:9e:36:ab:17:7d:a4:79:e1:ad:6c:27:df:0f:12:13:e5:3f:df:b4:bb:55:9b:af:f3:2d:

http://cho.salab.dfw.redhat.com/cblr/svc/op/ks/profile/summit-kickstart:1:RedHatGSSLab





DHCP/PXE

With the advent of Satellite 5.3, all of the manual PXE setup is handled. No more system-config-netboot!

Make sure that tftp and xinetd are installed and turned on on the Satellite.

Make sure that iptables is set to allow tftp through.

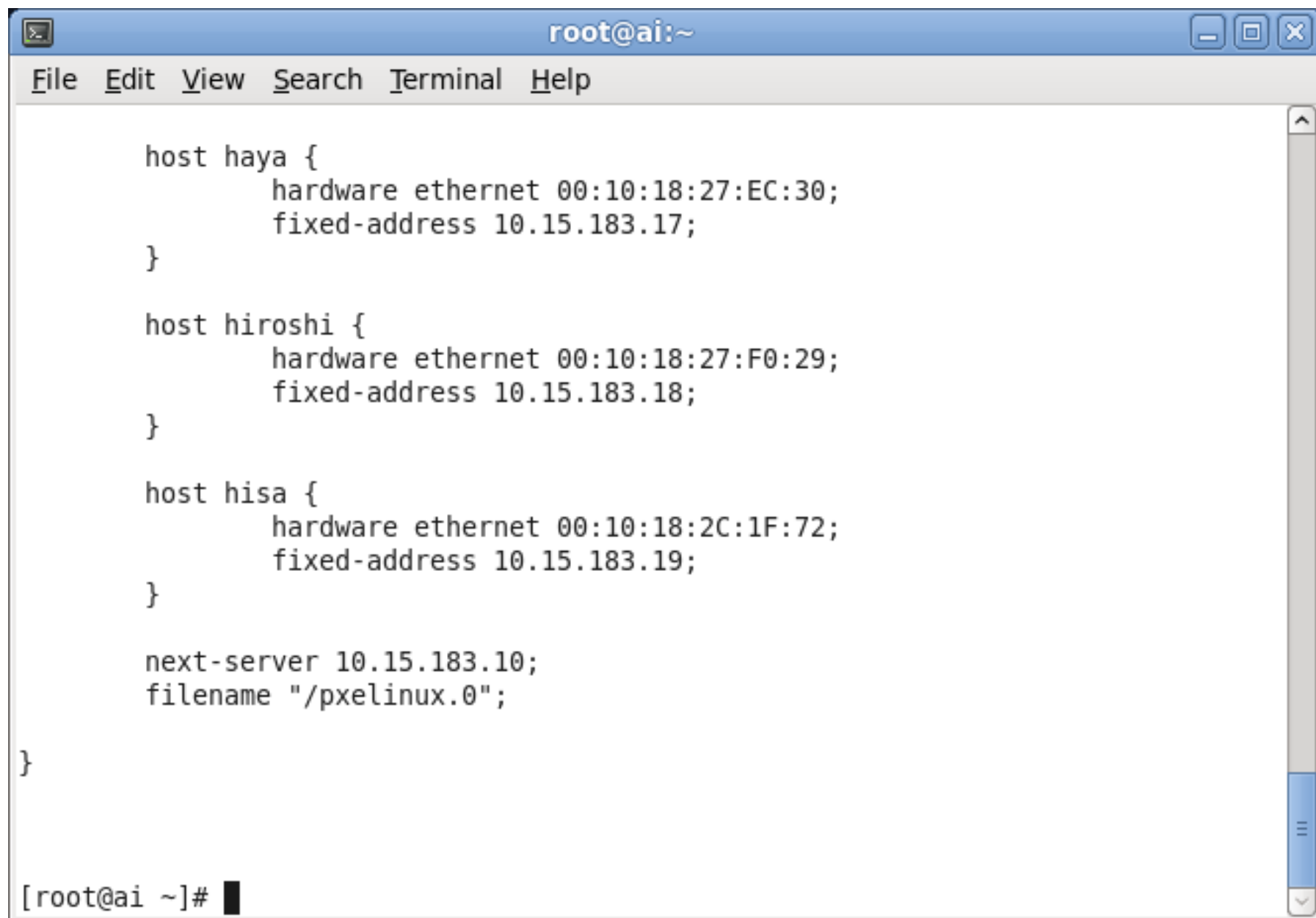
Set up dhcpd.conf on your DHCP server has the following stanza:

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A terminal window titled "root@ai:~" with a menu bar containing "File", "Edit", "View", "Search", "Terminal", and "Help". The terminal displays a network configuration script. The script defines three hosts: "haya", "hiroshi", and "hisa". Each host configuration block includes "hardware ethernet" with a MAC address and "fixed-address" with an IP address. Additionally, there is a "next-server" and a "filename" line. The prompt at the bottom is "[root@ai ~]#".

```
host haya {  
    hardware ethernet 00:10:18:27:EC:30;  
    fixed-address 10.15.183.17;  
}  
  
host hiroshi {  
    hardware ethernet 00:10:18:27:F0:29;  
    fixed-address 10.15.183.18;  
}  
  
host hisa {  
    hardware ethernet 00:10:18:2C:1F:72;  
    fixed-address 10.15.183.19;  
}  
  
next-server 10.15.183.10;  
filename "/pxelinux.0";  
}  
  
[root@ai ~]#
```

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DHCP/PXE

Cobbler will build a PXE boot environment based on the kickstart we've defined:

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Cobbler : <http://cobbler.et.redhat.com>

```
(local)
anadarko-oracle-test:1:RedHatGSSLab
summit-kickstart:1:RedHatGSSLab
```

Press [Tab] to edit options

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Welcome to Red Hat Enterprise Linux Server

Package Installation

Name : tree-1.5.0-4-x86_64

Size : 42k

Summary: A utility which displays a tree view of the contents of directories.

Status:

0%

	Packages	Bytes	Time
Total :	498	1063M	0:07:32
Completed:	162	255M	0:01:48
Remaining:	336	808M	0:05:43

24%

<Tab>/<Alt-Tab> between elements | <Space> selects | <F12> next screen

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DHCP/PXE

We see the new machine, takai.salab.dfw.redhat.com

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☐		16	31	haya.salab.dfw.redhat.com - ronak.mallik	Red Hat Enterprise Linux (v. 5 for 64-bit x86_64)	Management, Monitoring, Provisioning, Virtualization Platform
☐		16	31	hiroshi.salab.dfw.redhat.com - ronak.mallik	Red Hat Enterprise Linux (v. 5 for 64-bit x86_64)	Management, Monitoring, Provisioning, Virtualization Platform
☐		17	34	hisa.salab.dfw.redhat.com SWELLS	Red Hat Enterprise Linux (v. 5 for 64-bit x86_64)	Management, Monitoring, Provisioning, Virtualization Platform
☐		213	161	takai.salab.dfw.redhat.com	Red Hat Enterprise Linux (v. 5 for 64-bit x86_64)	Management, Monitoring, Provisioning

Update List Select All

1 - 13 of 13 (0 selected)

Download CSV

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RHN Satellite - Systems - Syste...

Lock Status:



System is **unlocked**
([Lock system](#))

Subscribed Channels ([Alter Channel Subscriptions](#))

■ Red Hat Enterprise Linux (v. 5 for 64-bit x86_64)

└ iPod Stuff

└ Red Hat Network Tools for RHEL Server (v.5 64-bit x86_64)

└ RHEL Clustering (v. 5 for 64-bit x86_64)

└ RHEL Cluster-Storage (v. 5 for 64-bit x86_64)

└ RHEL Optional Productivity Apps (v. 5 for 64-bit x86_64)

└ RHEL Supplementary (v. 5 for 64-bit x86_64)

└ RHEL Virtualization (v. 5 for 64-bit x86_64)

Notifications:

Daily Summary

Errata Email

Auto Errata Update:

No

System Name:

takai.salab.dfw.redhat.com

Description:

Initial Registration Parameters:
OS: redhat-release
Release: 5Server
CPU Arch: x86_64-redhat-linux

Location:

(none)

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RHN Satellite release 5.3.0

Done

```
root@takai:~  
File Edit View Search Terminal Help  
[tcameron@tcx60 ~]$ ssh root@takai.salab.dfw.redhat.com  
The authenticity of host 'takai.salab.dfw.redhat.com (10.15.183.112)' can't be e  
stablished.  
RSA key fingerprint is 58:3f:06:c1:14:d7:85:02:72:89:5f:0c:64:62:b7:ab.  
Are you sure you want to continue connecting (yes/no)? yes  
Warning: Permanently added 'takai.salab.dfw.redhat.com,10.15.183.112' (RSA) to t  
he list of known hosts.  
root@takai.salab.dfw.redhat.com's password:  
Last login: Tue Jun 22 02:59:24 2010  
Private system. Trespassers will be violated  
[root@takai ~]# cat /etc/redhat-release  
Red Hat Enterprise Linux Server release 5.4 (Tikanga)  
[root@takai ~]#
```

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```
root@takai:~  
File Edit View Search Terminal Help  
[root@takai ~]# cat /etc/summit/summit.conf  
systemid=1000010522  
profile_name=takai.salab.dfw.redhat.com  
system_description=Initial Registration Parameters:  
OS: redhat-release  
Release: 5Server  
CPU Arch: x86_64-redhat-linux  
hostname=takai.salab.dfw.redhat.com  
ip_address=10.15.183.112  
eth0=10.15.183.112  
netmask=255.255.255.0  
broadcast=10.15.183.255  
mac_addr=54:52:00:0d:76:da  
nic_driver=Unknown  
[root@takai ~]#
```

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NO SYSTEMS SELECTED [MANAGE](#) [CLEAR](#)

- Overview
- Systems
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- Virtual Systems
- Out of Date
- Untitled
- Ungrouped
- Inactive
- Recently Registered
- Proxy
- System Groups
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- Activation Keys
- Stored Profiles
- Custom System Info
- Kickstart

 takai.salab.dfw.redhat.com

[+ add to ssm](#) | [- delete system](#)

[Details](#) [Software](#) [Configuration](#) [Provisioning](#) [Monitoring](#) **Groups** [Events](#)

[List / Leave](#) [Join](#)

System Groups

Below are all the system groups that have been added to this system. To remove a system group membership, check its checkbox and make sure you click the "Leave Selected Groups" button when you are finished with your changes.

0 1 2 3 4 5 6 7 8 9 A B C D E F G H I J K L M N O P Q R **S** T U V W X Y Z

Filter by Group Name: Display items per page **1 - 1 of 1 (0 selected)**

☐	Group Name
☐	Summit Group

1 - 1 of 1 (0 selected)

And that's it!

All the seemingly disconnected parts come together to make a system which can be managed at first boot.

There **is** a method to the madness!

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Thank You Very Much!

If you liked today's presentation, please let us know!

If you have questions, you can reach me at thomas@redhat.com, choirboy on #spacewalk on Freenode, or thomasdcameron on Twitter.

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Appendix A - channel-to-update script

Grab the tarball from

<https://fedorahosted.org/spacewalk/wiki/channel-to-update>
to a temporary directory.

Unpack it on your Satellite server

Read The Fine Manual - see the README file in that directory.

Create a parent channel with syntax like:

```
./create-channel-update -l satadmin \  
-s satellite.tc.redhat.com -D ./data/5-u2-server-i386 \  
-d rhel-5.2-i386-server
```

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```
root@satellite:~/c2u
File Edit View Terminal Help
[root@satellite c2u]# ./create-channel-update -l satadmin -s satellite.tc.redhat
.com -D ./data/5-u2-server-i386 -d rhel-5.2-i386-server
Password:
You have not specified a source channel, we will try to determine it from inputs
Trying with source channel: rhel-i386-server-5
Creating channel, rhel-5.2-i386-server, with arch IA-32 2223 packages in source
file to push.
Pushing 2223 packages, please wait.
Sucessfully pushed 2223 packages out of 2223
[root@satellite c2u]#
```



Appendix A - channel-to-update script

Create any child channels. For example, here is the syntax for creating the clustering child channel:

```
./create-channel-update -s satellite.tc.redhat.com \  
-l satadmin -D ./data/5-u2-server-i386-Clusterstorage \  
-c rhel-i386-server-cluster-storage-5 \  
-d rhel-5.2-i386-cluster-storage -P rhel-5.2-i386-server
```



```
root@satellite:~/c2u
File Edit View Terminal Help
[root@satellite c2u]# ./create-channel-update -l satadmin -s satellite.tc.redhat
.com -D ./data/5-u2-server-i386 -d rhel-5.2-i386-server
Password:
You have not specified a source channel, we will try to determine it from inputs
Trying with source channel: rhel-i386-server-5
Reusing rhel-5.2-i386-server as destination channel
2223 packages in source file to push.
Pushing 2223 packages, please wait.
Sucessfully pushed 2223 packages out of 2223
[root@satellite c2u]# ./create-channel-update -s satellite.tc.redhat.com -l sata
dmin -D ./data/5-u2-server-i386-Clusterstorage -c rhel-i386-server-cluster-stora
ge-5 -d rhel-5.2-i386-cluster-storage -P rhel-5.2-i386-server
Password:
Trying with source channel: rhel-i386-server-cluster-storage-5
Reusing rhel-5.2-i386-cluster-storage as destination channel
37 packages in source file to push.
Pushing 37 packages, please wait.
Sucessfully pushed 37 packages out of 37
[root@satellite c2u]#
```



Appendix A - channel-to-update script

Repeat for each other child channel you want.

Take a peek in ./data for the names of the channels available.

Note that this does not clone package groups - yum grouplist, yum groupinstall and yum groupremove will not work.

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Red Hat Network - Channels - Manage Software Channels - Mozilla Firefox

File Edit View History Bookmarks Tools Help

redhat.com https://satellite.tc.redhat.com/network/software/channels/manage/index.pxt

Most Visited Red Hat Zimbra Intranet Salesforce SME satellite.tc.redhat... Axiom Travel Red Hat Apps cho.salab.dfw.redh... luci

Red Hat Network - Channels - Ma...

QA RHEL Cluster-Storage (v. 5 for 32-bit x86)	176
QA RHEL Clustering (v. 5 for 32-bit x86)	118
QA RHEL Optional Productivity Apps (v. 5 for 32-bit x86)	1011
QA RHEL Supplementary (v. 5 for 32-bit x86)	411
QA RHEL Virtualization (v. 5 for 32-bit x86)	152
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PROD Red Hat Network Tools for RHEL Server (v.5 32-bit x86)	417
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rhel-5.2-i386-cluster	32
rhel-5.2-i386-cluster-storage	37
rhel-5.2-i386-supplementary	66
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