redhat

**RED HAT SATELLITE**

Username

Password

Login

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Introduction

**Getting Started with Satellite 6 Command Line**

NOTE: This book has now been updated to Satellite 6.2

The previous version of the book had a number of work arounds included that are now, no longer necessary

In this, the second book in the series, we look at using Satellite 6's command line tool, called Hammer

While the web interface is very nice, its often more efficient to use the command line, especially as it enables scripting.

We shall again start of with focusing on configuring a freshly installed Satellite so that it can provision machines. We will use an "all in one" setup, where the Satellite box will also perform DNS, DHCP and TFTP

Many of the first steps are identical to those in the sister book Getting Started with Satellite 6, but we have included them here anyway

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Installation

**Installation**

**Pre-Requisites**

Before we start, you need

vanilla install of RHEL. (we will be using RHEL6, but RHEL7 is also supported) valid entitlement for RHEL and entitlement for Satellite a login to access.redat.com (for creating and downloading the manifest)

**Firewall configuration**

Its worth getting the firewall configured at this stage, so that we dont forget later. I shall assume a default firewall config exists. Configure the firewall any way you feel confortable, there is a quick option below.

**RHEL 7 Firewall**

RHEL 7 uses firewalld, which is new to all of us. Below are some simple steps to get the firewall setup as we need it

Start off by verifying what the default zone is

firewall-cmd --get-active-zones

You should see something like this that indicates its active zone is public

public

interfaces: eth0

If the active zones list is empty, its probably because the NIC has not been assigned to a group:

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Installation

firewall-cmd --zone=public \

--change-interface=nicInterfaceName

OK, now we have verified that, lets take a look at the default rules in place

firewall-cmd --zone=public --list-all ... (output omited)

Of course this is not what we require, so lets add in all the ports we require including the ones for the additional capsules (DNS & DHCP).

firewall-cmd --permanent --zone=public \

--add-service=RH-Satellite-6 --add-service=dhcp \ --add-service=dns --add-service=tftp # 6.2 still seems to needs also 8000 TCP for foreman-proxy # https://bugzilla.redhat.com/show\_bug.cgi?id=1248665 # [root@satellite ~]# lsof -i :8000 # COMMAND PID USER FD TYPE DEVICE SIZE/OFF NODE NA ME # ruby 2740 foreman-proxy 10u IPv4 22409 0t0 TCP \*: irdmi (LISTEN)

firewall-cmd --zone=public --add-port="8000/tcp" --permanent

Now run that command again.

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Installation

firewall-cmd --zone=public --list-all public (default, active)

interfaces: eth0 sources: services: RH-Satellite-6 dhcp dhcpv6-client dns ssh tftp ports: masquerade: no forward-ports: icmp-blocks: rich rules:

As I have used --permanent above, we will have to restart the firewall for this to take effect. We use firewall-cmd --reload as it will keep the existing state information. See the man page for more details

firewall-cmd --reload

More information on what each of these ports are for can be found in Installation Guide Prerequisites

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Base Install

**Base Install**

Start with a fresh installation of RHEL 7.2, which was installed via PXE and kickstart with an FTP source. I prefer this, over templates or machines deployed by Satellite/Foreman as it keeps it as clean as possible and there is no existing puppet configuration, might have lead to problems later on.

Plus, my test Sat 6 has a 300GiB vda, not keeping 2 Satelites on the hypervisor.

When installing, be sure to just use "Base" as the installation type.

Although I do add the following for comfort

acpid chrony kexec-tools

Once installed, we will register the machine to Red Hat, and fully update it. Then we will change its Satellite version, add some subscriptions and download its manifest file and get the Satellite software installed.

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**Registration**

I like to follow a very precise way of registering the box, one that I have worked out over many installation methods. While its not the way currently mentioned in the official documentation, it works for me 100% of the time.

From a command prompt type the following

subscription-manager register --type=satellite

You will then be prompted for your credentials, enter them and the system should be correctly registered, but not attached/consuming entitlements

At this point its important to logon to the Red Hat Customer Portal and set the version of Satellite to 6.0

Registration

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Attach Entitlements

**Attach Entitlements**

OK, lets get a list of whats availble to you, you are specifically looking for the Pool IDs here

subscription-manager list --available --all|less

Search for the Satellite Subscription, as a Red Hat employee, some of the output I see is as follows, yours will look a little different

Subscription Name: Red Hat Satellite Subscription Provides: Red Hat Software Collections (for RHEL Server )

Red Hat Satellite Capsule Red Hat Satellite ....

SKU: SER---US Pool ID: aaaabbbbccccddddeeeeffffgggghhh Available: 17 Suggested: 1 Service Level: Self-Support Service Type: L1-L3 Multi-Entitlement: No Ends: 01/01/22 System Type: Physical

You are interested in the Pool ID of the subscription

You can attach this to your server as follows

subscription-manager attach --pool=aaaabbbbccccddddeeeeffffggggh hh

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Attach Entitlements

NOTE: If you get an error that reads like this

Too many content sets for certificate Red Hat Satellite Employee Subscription. A newer client may be available to address this problem. See kbase https://access.redhat.com/knowledge/node/129003 for more information.

then make sure you log on to Red Hat and select the verison of Satellite, as mentioned in the previous section. Be sure to click the update button

You will then be able to attach to that pool. However, depending on your entitlemenmts, the pool you have atached to may not have Software Collections. If this is the case, use subscription manager to list all availble pools and attach one that contains Software Collections

This may enable too many repositories. The Satellite documentation makes clear which repositories you will need, and shows how to disable the ones you dont.

### RHEL 7 Repos

subscription-manager repos --disable "\*"

subscription-manager repos --enable rhel-7-server-rpms \ <<<<<<< HEAD -- enable rhel-server-rhscl-7-rpms \

**--enable rhel-7-server-satellite-6.2-rpms**

--enable rhel-server-rhscl-7-rpms \ --enable rhel-7-server-satellite-6.2-rpms

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Attach Entitlements

caf346f... remove RHEL6 refs, RHEL7 comes with free XFS and we definitely want that for /var/lib/pulp ```

Once done, check that you have access to exactly three repos

# yum repolist ...

repo id repo name rhel-7-server-rpms/7Server/x86\_64 Red Hat Enterprise Linux

7 Server (RPMs) rhel-7-server-satellite-6.2-rpms/x86\_64 Red Hat Satellite 6.2 (f or RHEL 7 Server) (RPMs) rhel-server-rhscl-7-rpms/7Server/x86\_64 Red Hat Software Collect ions RPMs for Red Hat Enterprise Linux 7 Server

Once you have confirmed that you have access to exactly those three repositories, carry on to the next part.

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Installation

**Installation**

Now we have the correct repos configured, update the server with the latest updates from Red Hat.

yum -y update

Next we perform the actual instalation.

yum install satellite

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Initial Setup

**Initial Setup**

The katello-installer is used to perform the initial setup and any future changes to the existing config. Its a puppet based installation and so can be re-run without overiding the previous settings.

We will create an "all-in-one" deployment, meaning that the Satellite will have the additional roles of TFTP proxy, DHCP server and DNS server added at install time.

The Satellite has 2 network interfaces and does not forward packets between them (to simulate a corporate firewall).

the network "default" is the outside link (to sync repos) the network "SatTesting" is where DNS, DHCP and PXE are handled by the Satellite

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Initial Setup

# provided you put your CA cert and the signed cert of the Satel lite there # otgerwise skip this and drop the cert options when installing cd /root/SSL-cert katello-certs-check \\ -c 2016-06-17.crt \\ -r 2016-06-17.csr \\ -k 2016-06-17\_unencrypted.key \\ -b pcfe-CA-pem.crt

cd /root/SSL-cert # provided you put your CA cert and the signed

cert of rthe Satellite there satellite-installer --scenario satellite \\

--foreman-initial-organization "Sat Test" \\ --foreman-initial-location "Engineering Building" \\ --foreman-proxy-dns true \\ --foreman-proxy-dns-forwarders 8.8.8.8 \\ --foreman-proxy-dns-zone sattest.example.com \\ --foreman-proxy-dns-reverse 2.168.192.in-addr.arpa \\ --foreman-proxy-dhcp true \\ --foreman-proxy-dhcp-interface eth0 \\ --foreman-proxy-dhcp-range "192.168.2.100 192.168.2.150" \\ --foreman-proxy-dhcp-gateway 192.168.2.2 \\ --foreman-proxy-dhcp-nameservers 192.168.2.2 \\ --foreman-proxy-tftp true \\ --foreman-proxy-tftp-servername $(hostname) \\ --capsule-puppet true \\ --certs-server-cert \$(pwd)/2016-06-17.crt \\ --certs-server-cert-req \$(pwd)/2016-06-17.csr \\ --certs-server-key \$(pwd)/2016-06-17\_unencrypted.key \\ --certs-server-ca-cert \$(pwd)/pcfe-CA-pem.crt

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Initial Setup

Note: forwarders are stored in /etc/named/options.conf should you wish to change them later.

Note: if you omit --capsule-dhcp-nameservers then a default nameservers option will be created in the dhcp config for the satellite servers own address, meaning that the DHCP server will advertise the satellite as the DNS server. If this is not what you want, you can add something like -- capsule-dhcp-nameservers 10.0.0.1, 10.0.0.2 to the main katello- installer options above

A full list of other katello-setup options are available via

katello-installer --help

Once the installer has finished, you should be able to login by pointing your browser to https://<servername> (assuming you have made the necessary firewall changes).

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Initial Configuration, adding Red Hat Repos

**Initial Configuration, adding Red Hat Repos**

The following sections will cover adding different repositories (or repos) to the Satellite server, starting with the official Red Hat repos. Adding other repos will be left until the next book

Each type of repo can either be syncronised on demand or alternatively can be scheuled to syncronise on a regular basis

Before we can add Red Hat repositories, we need to create an organisation and location then create and import a manifest file however.

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**Creating the Manifest**

Login to access.redhat.com to generate our manefest file.

Locate the system, within access.redhat.com.

Be sure to re-set the Version, if it has become unset (as in the screenshot below) and hit Update

Then locate the "Attach a subscription" (bottom right in the screenshot below).

Navigate to the subscription you wish to add, select the checkbox on the left and enter a quantity on the right before selecting Attach Selected

It may take some time to attach the subscription, as it will say on the screen (see screenshot below).

Creating the Manifest

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Creating the Manifest

Hit refresh from time to time until it completes and then click on the Download Manifest button and save the mainfest somewhere safe

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Hammer Credentials

**Hammer Credentials**

To run hammer you need to provide authentication, you can specify your username and password each time

hammer -u admin -p <password> <subcommands>

**or simply create ~/.hammer/cli\_config.yml**

:foreman:

:enable\_module: true :host: 'https://localhost/' :username: 'admin' :password: '<password>'

Personally I find the second option much more convenient,ne so I shall assume you have done this for all further examples

With the release of GA, the setup program was changed to randomise this password. The password is dumped to the screen, once the katello-installer has finished.

Just incase you didnt make a note of it, it can be recovered by running

awk '/^ \*admin\_password:/ { print $2 }' \ /etc/katello-installer/answers.katello-installer.yaml

Once you have edited this file, it might be worth chmod 600 the config file and stripping the password from the answers file just to safe

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Quick Introduction to Hammer

**Quick Introduction to Hammer**

The command line tool that is shipped with Satellite 6 is called Hammer

You can examime which commands Hammer is capable of with

hammer --help

You will see output line this

Usage:

hammer [OPTIONS] SUBCOMMAND [ARG] ...

Parameters:

SUBCOMMAND subcommand [ARG] ... subcommand arguments

Subcommands:

activation-key Manipulate activation keys. architecture Manipulate architectures. capsule Manipulate capsule compute-resource Manipulate compute resources. content-host manipulate content hosts on th e server

content-view Manipulate content views. domain Manipulate domains. environment Manipulate environments. fact Search facts. global-parameter Manipulate global parameters. gpg manipulate GPG Key actions on the server

host Manipulate hosts. host-collection Manipulate host collections hostgroup Manipulate hostgroups.

...

To get more specific help, you can be more specific with your request

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Quick Introduction to Hammer

hammer activation-key --help

Usage:

hammer activation-key [OPTIONS] SUBCOMMAND [ARG] ...

Parameters:

SUBCOMMAND subcommand [ARG] ... subcommand arguments

Subcommands:

add-host-collection Associate a resource add-subscription Add subscription create Create an activation key host-collections List associated host collectio ns

info Show an activation key list List activation keys remove-repository Disassociate a resource remove-subscription Remove subscription subscriptions List associated subscriptions update Update an activation key

Options:

-h, --help print help

The more specific the request, the more specific the answer

hammer activation-key create --help

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Quick Introduction to Hammer

Usage:

hammer activation-key create [OPTIONS]

Options:

--content-view CONTENT\_VIEW\_NAME --content-view-id CONTENT\_VIEW\_ID content view id --description DESCRIPTION description --environment ENVIRONMENT\_NAME --environment-id ENVIRONMENT\_ID environment id --name NAME name --organization ORGANIZATION\_NAME --organization-id ORGANIZATION\_ID organization identifier --organization-label ORGANIZATION\_LABEL --usage-limit USAGE\_LIMIT maximum number of registered c ontent hosts, or 'unlimited'

-h, --help print help

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Prepare for Manifest Import

**Prepare for Manifest Import**

Once the manifest has been created, we simple need to import it into our Satellite server.

However, first we must create our Organization and Location

**Organisation**

The oganisation that I shall use for this book is Example Org and the location I shall use is Europe

Lets get our orgainisation created, starting off with getting some help on the syntax

hammer organization create --help Usage:

hammer organization create [OPTIONS]

Options:

--description DESCRIPTION description --label LABEL unique label --name NAME name -h, --help print help

So its probably enough to just specify the --name option

Lets setup some variables to use throughout the book, replace them with the values that are meaningful to you

ORG="Example Org" LOC="Europe"

Ok, now we have those set, we need to get an organisation and a location set, before we import the manifest.

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Prepare for Manifest Import

hammer organization create --name "${ORG}" Organization created

**Location**

Now the location

hammer location create --help Usage:

hammer location create [OPTIONS]

Options:

--name NAME -h, --help print help

OK, that also looks simple then

hammer location create --name "${LOC}" Location created

Congratulations, your first hammer commands have completed successfully. Remember to make good use of the --help option

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Importing the Manifest

**Importing the Manifest**

Earlier on we created and downloaded our manifest, now we should import it

A quick look at the help shows it should be easy

hammer subscription upload --help Usage:

hammer subscription upload [OPTIONS]

Options:

--async Do not wait for the task --file MANIFEST Subscription manifest file --organization ORGANIZATION\_NAME --organization-id ORGANIZATION\_ID Organization id --organization-label ORGANIZATION\_LABEL --repository-url REPOSITORY\_URL repository url -h, --help print help

So the following is all we need

hammer subscription upload --organization "${ORG}" --file <filen ame here>

NOTE: At the time of writing using the organisation name wasnt working for me, so I had to use --organization-id method instead. The ID was found by doing hammer organization list

hammer subscription upload --organization-id 5 --file <filename>

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Adding Red Hat Repositories

**Adding Red Hat Repositories**

OK, once the manifest is imported we can look at enabling the Red Hat repositories to be downloaded to the Satellite server

The hammer command for enabling these Red Hat repositories is

hammer repository-set

There are a large number of repositories available, as can be seen by doing

hammer repository-set list --product "Red Hat Enterprise Linux Server" \ --organization "${ORG}"

To get us started we shall only enable three Red Hat repositories - these are enough to enable us to perform provisioning

**Example RHEL 6 Channels**

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Adding Red Hat Repositories

# hammer repository-set enable --organization "${ORG}" \

--product "Red Hat Enterprise Linux Server" \ --name "Red Hat Enterprise Linux 6 Server (Kickstart)" \ --releasever "6.5" --basearch "x86\_64"

# hammer repository-set enable --organization "${ORG}" \

--product "Red Hat Enterprise Linux Server" \ --name "Red Hat Enterprise Linux 6 Server (RPMs)" \ --releasever "6.5" --basearch "x86\_64"

hammer repository-set enable --organization "${ORG}" \

--product "Red Hat Enterprise Linux Server" \ --name "Red Hat Satellite Tools 6.2 (for RHEL 6 Server) (RPMs)" \ --basearch "x86\_64"

# hammer repository-set enable --organization "${ORG}" \

--product "Red Hat Enterprise Linux Server" \ --name "Red Hat Enterprise Linux 6 Server - RH Common (RPMs)" \ --basearch "x86\_64"

**Example RHEL 7 Channels**

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Adding Red Hat Repositories

hammer repository-set enable --organization "${ORG}" \

--product "Red Hat Enterprise Linux Server" \ --name "Red Hat Enterprise Linux 7 Server (Kickstart)" \ --releasever "7.2" --basearch "x86\_64"

hammer repository-set enable --organization "${ORG}" \

--product "Red Hat Enterprise Linux Server" \ --name "Red Hat Enterprise Linux 7 Server (RPMs)" \ --releasever "7Server" --basearch "x86\_64"

hammer repository-set enable --organization "${ORG}" \

--product "Red Hat Enterprise Linux Server" \ --name "Red Hat Satellite Tools 6.2 (for RHEL 7 Server) (RPMs)" \ --basearch "x86\_64"

hammer repository-set enable --organization "${ORG}" \

--product "Red Hat Enterprise Linux Server" \ --name "Red Hat Enterprise Linux 7 Server - RH Common (RPMs)" \ --releasever "7Server" --basearch "x86\_64"

NOTE: In Satellite 6.1, you will need to add the Satellite Tools repository but the RH Common repository can be removed (unless you use it for other things like the rhevm-guest-agent, in which case you will need both)

So now you have enabled s few repositories, but they are not syncronised. See the next section for this

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Synchronising Repositories

**Synchronising Repositories**

Before we can create hosts to be provisioned, we need to synchronise the repositories that we selected in the previous section. This may take time, depending on the speed of your internet connection

Repository synchronisation is perfromed with

hammer repository synchronize

So in theory this should work

hammer repository synchronize --product "Red Hat Enterprise Linu x Server" \

--name "Red Hat Enterprise Linux 7 Server Kickstart x86\_64 7.1" \ --organization "${ORG}"

However, once you have started creating content views, you may see errors due to the repository existing more than once

hammer repository synchronize --product "Red Hat Enterprise Linu x Server" \

--name "Red Hat Enterprise Linux 7 Server Kickstart x86\_64 7.1" \ --organization "${ORG}" Could not synchronize the repository:

Error: repository found more than once

If we take a look at the repositories we have, we can confirm this

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Synchronising Repositories

hammer repository list --organization "${ORG}" ---|------------------------------------------------------------ -------|---------------------------------|--------------|------- ---------------------------------------------------------------- ---------- ID | NAME

| PRODUCT | CONTENT TYPE | URL

---|------------------------------------------------------------ -------|---------------------------------|--------------|------- ---------------------------------------------------------------- ---------- 1 | Red Hat Enterprise Linux 7 Server Kickstart x86\_64 7.1

| Red Hat Enterprise Linux Server | yum | https: //cdn.redhat.com/content/dist/rhel/server/7/7.1/x86\_64/kickstart

4 | Red Hat Enterprise Linux 7 Server - RH Common RPMs x86\_64 7 Server | Red Hat Enterprise Linux Server | yum | https: //cdn.redhat.com/content/dist/rhel/server/7/7Server/x86\_64/rh-co mmon/os 2 | Red Hat Enterprise Linux 7 Server RPMs x86\_64 7Server

| Red Hat Enterprise Linux Server | yum | https: //cdn.redhat.com/content/dist/rhel/server/7/7Server/x86\_64/os

3 | Red Hat Satellite Tools 6.1 for RHEL 7 Server RPMs x86\_64

| Red Hat Enterprise Linux Server | yum | https: //cdn.redhat.com/content/dist/rhel/server/7/7Server/x86\_64/sat-t ools/6.... ---|------------------------------------------------------------ -------|---------------------------------|--------------|------- ---------------------------------------------------------------- ----------

As a general rule, you should use the lowest ID for each duplicate and then you can synchronise via ID

hammer repository synchronize --id 1 --organization "${ORG}"

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Synchronising Repositories

Unless you are happy to wait for it to finish you can also add the --async option to the command

hammer repository synchronize --id 1 --organization "${ORG}" -- async

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Lifecycle Environments

**Lifecycle Environments**

Satellite 6 has the concept of Lifecycle Environments. These should generally match the names of your tiers, such as Crash, Development, QA, Production etc etc

The idea is that your hosts or clients will exist in one of these tiers. A Content View describing how the host should be configured is defined and pushed or promoted to the first tier (Crash in our example) where it is tested and refined before it is promoted to the next environment for the next team to test.

We will discuss Content Views in more detail in a later section

For now lets go ahead and create the four Lifecycle Environments mentioned above

hammer lifecycle-environment create --name "Engineering" \ --description "For Engineering" --organization "${ORG}" \ --prior "Library"

hammer lifecycle-environment create --name "Development" \ --description "Initial testing for the App guys" \ --organization "${ORG}" --prior "Engineering"

hammer lifecycle-environment create --name "QA" \ --description "QA testing for the App guys" \ --organization "${ORG}" --prior "Development"

hammer lifecycle-environment create --name "Production" \ --description "Production Environment" \ --organization "${ORG}" --prior "QA"

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Content Views

**Content Views**

At this point we will have to wait for our Red Hat Repositories to be syncronised, before we define content views.

Content views contain RPM packages from repos as well as puppet modules from puppet repos. Everything needed in order to correctly configure the hosts

Once defined, your content views will be published and promoted to the appropriate Lifecycle Environment

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Defining Content Views

**Defining Content Views**

Once the repositories that we need are syncronised, we can get our content view created. The content view will create a frozen view of the repositories until further updates are added to it and published.

OK, lets remind ourself of the IDs of our syncronised repositories, as its simpler to define the repositories we want to add to our content view, by ID

Again, to simplify cut and paste, lets define another variable

CV1="cv-rhel7-base"

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Defining Content Views

hammer repository list --organization "${ORG}" ---|-----------------------------------------------------------| ---------------------------------|--------------|--------------- ---------------------------------------------------------------- -- ID | NAME |

PRODUCT | CONTENT TYPE | URL ---|-----------------------------------------------------------| ---------------------------------|--------------|--------------- ---------------------------------------------------------------- -- 3 | Red Hat Satellite Tools 6.2 for RHEL 7 Server RPMs x86\_64 | Red Hat Enterprise Linux Server | yum | https://cdn.re dhat.com/content/dist/rhel/server/7/7Server/x86\_64/sat-tools/6.. .. 6 | Red Hat Satellite Tools 6.2 for RHEL 6 Server RPMs x86\_64 | Red Hat Enterprise Linux Server | yum | https://cdn.re dhat.com/content/dist/rhel/server/6/6Server/x86\_64/sat-tools/6.. .. 2 | Red Hat Enterprise Linux 7 Server RPMs x86\_64 7Server | Red Hat Enterprise Linux Server | yum | https://cdn.re dhat.com/content/dist/rhel/server/7/7Server/x86\_64/os 1 | Red Hat Enterprise Linux 7 Server Kickstart x86\_64 7.2 | Red Hat Enterprise Linux Server | yum | https://cdn.re dhat.com/content/dist/rhel/server/7/7.2/x86\_64/kickstart 5 | Red Hat Enterprise Linux 6 Server RPMs x86\_64 6.5 | Red Hat Enterprise Linux Server | yum | https://cdn.re dhat.com/content/dist/rhel/server/6/6.5/x86\_64/os 4 | Red Hat Enterprise Linux 6 Server Kickstart x86\_64 6.5 | Red Hat Enterprise Linux Server | yum | https://cdn.re dhat.com/content/dist/rhel/server/6/6.5/x86\_64/kickstart ---|-----------------------------------------------------------| ---------------------------------|--------------|--------------- ---------------------------------------------------------------- --

We dont need the kickstart repo once the anaconda has provisioned the machine, so we will exclude that and incluse the others

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Defining Content Views

**Lets create our content view now, called cv-rhel7-base**

hammer content-view create --name "${CV1}" \

--description "Our initial first content view" \ --organization "${ORG}"

Next we add the repositories to the content view

hammer content-view update --repository-ids 3,2 \

--name "${CV1}" --organization "${ORG}"

Finally we can publish our content view

hammer content-view publish --name "${CV1}" \ --organization "${ORG}"

NOTE: Its possible to also add the --async to this publish command if required

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Capsules / Smart Proxies

**Capsules / Smart Proxies**

Satellite 6 has the concept of Capsules which are analagous to Smart Proxies in Foreman

A Capsule provides functionality to the Satellite server. Examples of Capsules are

DHCP Capsule - enabling Satellite 6 to reserve IP addresses on a DHCP server, including all the options necessary for a PXE boot DNS Capsule - enabling the Satellite to create, update and remove forward and reverse DNS records Realm Capsule - enabling Satellite to create Kerberos Host Principles on a Kerberos Server TFTP Capsule - enabling the Satellite server to place files required for PXE booting a Host Puppet Capsule - Providing Puppet functionality to Satellite (usually the Satellite server itself)

These are usually, but not always, on remote servers and not on the main Satellite server itself. However, that said, in this introductory session we configured our Satellite to have multiple local Capsules.

We chose to run TFTP,DHCP & DNS Capsules on our main Satellite server, during the initial configuration.

Capsules can be used with hammer capsule subcommands

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Capsules / Smart Proxies

hammer capsule --help Usage:

hammer capsule [OPTIONS] SUBCOMMAND [ARG] ...

Parameters:

SUBCOMMAND subcommand [ARG] ... subcommand arguments

Subcommands:

content Manage the capsule content info Show the capsule details list List all capsules

Options:

-h, --help print help

Further discussion of capsules I shall save for the next book.

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Configure the Server for Provisioning

**Configure the Server for Provisioning**

There are a number of things that need to be defined before we can add a new host to be provisioned.

The following items need to be defined

Architecture Domain Activation Key Partition Table Subnet DHCP Proxy DNS Proxy Realm Proxy TFTP Proxy Provisioning Templates Operating Systems

Each will be discussed in its own section

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Architectures

**Architectures**

Double check that the Architectures are created already

hammer architecture list ---|------- ID | NAME ---|------- 2 | i386 1 | x86\_64 ---|-------

As architectures dont cant be allocated to a location or organisation there is nothing to do here other than verify that the configure script created them

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Domains

**Domains**

Also verify that your first Domain was created by the initial configuration task

hammer domain list ---|------------ ID | NAME ---|------------ 1 | example.com ---|------------

Domains can and indeed should be part of your location and organisation, so we shall probably have to move it. We can do this with

hammer location add-domain --domain "example.com" --name "${LOC} "

**Next the location**

hammer organization add-domain --domain "example.com" --name "${ ORG}"

Finally we can verify that this has worked, using the ID we can see in step 1

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Domains

hammer domain info --id 1 Id: 1 Name: example.com Description: DNS Id: Subnets:

Locations:

\*\*\* your location Organizations:

\*\*\* your org name Parameters:

Created at: 2014/09/18 17:20:41 Updated at: 2014/09/18 17:20:41

Make a mental note that there is no subnet assigned to this domain so far, we shall take care of this later

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Activation Keys

**Activation Keys**

Activation keys are required, when registering the host, in order to apply the correct settings to the host

NOTE Unfortunatley the version of subscription manager shipped in RHEL6.5 (and below) does not function correctly with Activation Keys. The default subscription\_manager\_registration snippet has a fix to ensure that the RH Common repo is included, so that provisioning should work fine. RHEL6.6 and RHEL7 do work correctly.

NOTE: We need to wait for our content view to publish and have an activation key created, before we continue

Once again we will use a variable to aid copy and pasting

AK1="ak-rhel7-base-1"

hammer activation-key create --name "${AK1}" \

--content-view "${CV1}" --lifecycle-environment Library \ --organization "${ORG}"

Activation key created

Even when using the UI, its easy to miss this step.

hammer activation-key update --release-version "7Server" \

--organization "${ORG}" --name "${AK1}" Activation key updated

Now the key is created but needs additional configuration such as adding Subscriptions

This step requires some interim steps to find the IDs we need. First step is to list the available Subscriptions. We need the ID (the last but one column)

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Activation Keys

hammer subscription list --organization "${ORG}"

We also need to list the activation keys as we need the ID from that also

hammer activation-key list --organization "${ORG}"

Then using the result from the ID columns, attach the subscription

hammer activation-key add-subscription --id <activation key ID> \ --subscription-id <subscription ID>

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Partition Tables

**Partition Tables**

Check that your Partition Table is associated with your Operating System. This should have been done during the initial configuration, but when you create your own, custom ones, dont forget this step

hammer partition-table list ---|------------------------------|---------- ID | NAME | OS FAMILY ---|------------------------------|---------- 1 | AutoYaST entire SCSI disk | Suse 2 | AutoYaST entire virtual disk | Suse 3 | AutoYaST LVM | Suse 4 | FreeBSD | Freebsd 5 | Jumpstart default | Solaris 6 | Jumpstart mirrored | Solaris 10 | Junos default fake | Junos 7 | Kickstart default | Redhat 9 | Preseed custom LVM | Debian 8 | Preseed default | Debian ---|------------------------------|----------

Get some more info

hammer partition-table info --id 7 Id: 7 Name: Kickstart default OS Family: Redhat Operating systems: RedHat 7.2 RedHat 7.1 Created at: 2015/12/07 09:31:13 Updated at: 2015/12/07 09:31:13

We will fix this later but just FYI, you would use hammer os add-ptable --id 1 --ptable-id 7 but as I say we will do it later

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Partition Tables

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Subnets

**Subnets**

We need to heck that the initial configuration has created your subnet and that its in the correct Organisation and Location

hammer subnet list ---|-------------|-------------|-------------- ID | NAME | NETWORK | MASK ---|-------------|-------------|-------------- 1 | 172.16.30.0 | 172.16.30.0 | 255.255.255.0 ---|-------------|-------------|--------------

You can either use the ID or the Name to see if your subnet is in the correct Organisation and Location

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Subnets

hammer subnet info --id 1 Id: 1 Name: 172.16.30.0 Network: 172.16.30.0 Mask: 255.255.255.0 Priority: DNS: satellite6.example.com (https://satellite6.exampl e.com:9090) Primary DNS: 172.16.30.200 Secondary DNS: 10.0.0.9 TFTP: satellite6.example.com (https://satellite6.exampl e.com:9090) DHCP: satellite6.example.com (https://satellite6.exampl e.com:9090) VLAN ID: Gateway: 172.16.30.1 From: 172.16.30.100 To: 172.16.30.150 Domains:

example.com Locations:

\*\*\* Your location Organizations:

\*\*\* Your Organisation

If your subnet doesnt exist, use hammer to create it

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Subnets

hammer subnet create --help Usage:

hammer subnet create [OPTIONS]

Options:

--dhcp-id DHCP\_ID DHCP Proxy to use within this subnet

--dns-id DNS\_ID DNS Proxy to use within this s ubnet

--dns-primary DNS\_PRIMARY Primary DNS for this subnet --dns-secondary DNS\_SECONDARY Secondary DNS for this subnet --domain-ids DOMAIN\_IDS Domains in which this subnet i s part

Comma separated list of values .

--from FROM Starting IP Address for IP aut o suggestion

--gateway GATEWAY Primary DNS for this subnet --mask MASK Netmask for this subnet --name NAME Subnet name --network NETWORK Subnet network --tftp-id TFTP\_ID TFTP Proxy to use within this subnet

--to TO Ending IP Address for IP auto suggestion

--vlanid VLANID VLAN ID for this subnet -h, --help print help

If it does exist but is in the wrong Organisation or Location then use hammer to move it

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Subnets

hammer organization add-subnet --help Usage:

hammer organization add-subnet [OPTIONS]

Options:

--id ID --name NAME Organization name --subnet SUBNET\_NAME Subnet name --subnet-id SUBNET\_ID -h, --help print help

and

hammer location add-subnet --help Usage:

hammer location add-subnet [OPTIONS]

Options:

--id ID --name NAME Location name --subnet SUBNET\_NAME Subnet name --subnet-id SUBNET\_ID -h, --help print help

If your subnet isn't even created, then we shall have to do it manually, lets get some help

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Subnets

hammer subnet create --help Usage:

hammer subnet create [OPTIONS]

Options:

--dhcp-id DHCP\_ID DHCP Proxy to use within this subnet

--dns-id DNS\_ID DNS Proxy to use within this s ubnet

--dns-primary DNS\_PRIMARY Primary DNS for this subnet --dns-secondary DNS\_SECONDARY Secondary DNS for this subnet --domain-ids DOMAIN\_IDS Domains in which this subnet i s part

Comma separated list of values .

--from FROM Starting IP Address for IP aut o suggestion

--gateway GATEWAY Primary DNS for this subnet --mask MASK Netmask for this subnet --name NAME Subnet name --network NETWORK Subnet network --tftp-id TFTP\_ID TFTP Proxy to use within this subnet

--to TO Ending IP Address for IP auto suggestion

--vlanid VLANID VLAN ID for this subnet -h, --help print help

We will need most of these settings, we also need to know the ID of the Capules/Smart Proxies we installed to take care of DNS & DHCP

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Subnets

hammer proxy list ---|-----------------------------|------------------------------ ------------|-------------------------- ID | NAME | URL

| FEATURES ---|-----------------------------|------------------------------ ------------|-------------------------- 1 | satellite6.example.com | https://satellite6.example.com:909 0 | TFTP, DNS, DHCP, Puppe... ---|-----------------------------|------------------------------ ------------|--------------------------

We also need to verify that the domain ID before we create the subnet

hammer domain list ---|------------ ID | NAME ---|------------ 1 | example.com ---|------------

OK, we have enough information to create the subnet

hammer subnet create --dhcp-id 1 --dns-id 1 \ --dns-primary 172.16.30.250 --domain-ids 1 \ --from "172.16.30.100" --gateway "172.16.30.1"\ --mask "255.255.255.0" --name "172.16.30.0/24"\ --network "172.16.30.0" --tftp-id 1 --to "172.16.30.199"

OK, that created the subnet, now we need to associate it with our location and organisation. The command is very similar to the one we used for our domain earlier. Check out the syntax

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Subnets

hammer location add-subnet --help Usage:

hammer location add-subnet [OPTIONS]

Options:

--id ID --name NAME Location name --subnet SUBNET\_NAME Subnet name --subnet-id SUBNET\_ID -h, --help print help

So lets associate it

hammer subnet update --name "172.16.0.0/24" --locations "${LOC}"

--organizations "${ORG}"

Finally, lets check that every thing has worked as we expected

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Subnets

hammer subnet info --id 1 Id: 1 Name: 172.16.30.0 Network: 172.16.30.0 Mask: 255.255.255.0 Priority: DNS: satellite6.example.com (https://satellite6.exampl e.com:9090) Primary DNS: 172.16.30.200 Secondary DNS: TFTP: satellite6.example.com (https://satellite6.exampl e.com:9090) DHCP: satellite6.example.com (https://satellite6.exampl e.com:9090) VLAN ID: Gateway: 172.16.30.1 From: 172.16.30.100 To: 172.16.30.199 Domains:

example.com Locations:

\*\*\* Your location Organizations:

\*\*\* Your organisation

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Provisioning Templates

**Provisioning Templates**

One of the changes from the beta version is that now, copies of provisioning templates are copied to your location and organisation, but they are read only copies.

This is a nice last minute change (from the beta) as editing one template no longer affects other orgs.

If you want to change one of them, then you will need to clone it

NOTE: At the time of writing (just after GA, hammer still had not been updated to include this clone functionality. If you need to clone a template, you will need to use the UI Bugzilla 1160292

You can get a list of Provisioning Templates by doing the following (note that this command produces paged output by defualt, so Ive used the --per-page 9999 option)

hammer template list --per-page 9999 ---|---------------------------------------|---------- ID | NAME | TYPE ---|---------------------------------------|---------- 5 | Alterator default | provision 6 | Alterator default finish | finish 7 | Alterator default PXELinux | PXELinux 34 | alterator\_pkglist | snippet 8 | AutoYaST default | provision 10 | AutoYaST default PXELinux | PXELinux 9 | AutoYaST SLES default | provision 44 | Boot disk iPXE - generic host | Bootdisk 43 | Boot disk iPXE - host | Bootdisk 35 | epel | snippet 36 | fix\_hosts | snippet 11 | FreeBSD (mfsBSD) finish | finish 12 | FreeBSD (mfsBSD) provision | provision 13 | FreeBSD (mfsBSD) PXELinux | PXELinux 37 | freeipa\_register | snippet

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Provisioning Templates

14 | Grubby default | script 38 | http\_proxy | snippet 48 | idm\_register | snippet 15 | Jumpstart default | provision 16 | Jumpstart default finish | finish 17 | Jumpstart default PXEGrub | PXEGrub 33 | Junos default finish | finish 31 | Junos default SLAX | provision 32 | Junos default ZTP config | ZTP 18 | Kickstart default | provision 20 | Kickstart default finish | finish 22 | Kickstart default iPXE | iPXE 21 | Kickstart default PXELinux | PXELinux 23 | Kickstart default user data | user\_data 39 | kickstart\_networking\_setup | snippet 19 | Kickstart RHEL default | provision 24 | Preseed default | provision 25 | Preseed default finish | finish 27 | Preseed default iPXE | iPXE 26 | Preseed default PXELinux | PXELinux 28 | Preseed default user data | user\_data 40 | puppet.conf | snippet 4 | PXEGrub default local boot | PXEGrub 2 | PXELinux default local boot | PXELinux 3 | PXELinux default memdisk | PXELinux 1 | PXELinux global default | PXELinux 41 | redhat\_register | snippet 42 | saltstack\_minion | snippet 45 | Satellite Kickstart Default | provision 47 | Satellite Kickstart Default Finish | finish 46 | Satellite Kickstart Default User Data | user\_data 49 | subscription\_manager\_registration | snippet 29 | UserData default | user\_data 30 | WAIK default PXELinux | PXELinux ---|---------------------------------------|----------

**The two that we require for provisioning are Kickstart default PXELinux and Satellite Kickstart Default. The later brings in the subscription\_manager\_registration snippet also**

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Provisioning Templates

Lets stick with the builtin provisioning template. Lets see what we need to do.

hammer template info --id 45 Id: 45 Name: Satellite Kickstart Default Type: provision Operating systems: RedHat 7.2 RedHat 7.1 Locations:

Default\_Location \*\*\* Your location Organizations:

Default\_Organization \*\*\* Your organisation

**Associate the PXE Linux Template with the OS**

The kickstart template was take care of above, now we need to make sure that the PXE template is associated with the OS correctly

# hammer template info --id 21 Id: 21 Name: Kickstart default PXELinux Type: PXELinux Operating systems: RedHat 7.2 RedHat 7.1 Locations:

Default Location \*\*\* Your location Organisations:

Default Organization \*\*\* Your organisation

This page is significantly short than the 6.0 one,as many of the 6.0 bugs have been resolved in 6.1

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Provisioning Templates

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Operating Systems

**Operating Systems**

There are a number of things that need to be set on the Operating System

Make sure that the following items have values

Partition tables Default templates: Architectures: Installation media

hammer os list ---|------------|--------------|------- ID | TITLE | RELEASE NAME | FAMILY ---|------------|--------------|------- 1 | RedHat 7.2 | | Redhat 2 | RedHat 7.1 | | Redhat ---|------------|--------------|-------

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Operating Systems

hammer os info --id 1 Id: 1 Title: RedHat 7.2 Release name: Family: Redhat Name: RedHat Major version: 7 Minor version: 2 Partition tables:

Kickstart default Default templates:

Kickstart default PXELinux (PXELinux) Kickstart default iPXE (iPXE) Satellite Kickstart Default (provision) Satellite Kickstart Default Finish (finish) Satellite Kickstart Default User Data (user\_data) Architectures:

Installation media:

Templates:

Kickstart default iPXE (iPXE) Kickstart default PXELinux (PXELinux) Satellite Kickstart Default (provision) Satellite Kickstart Default Finish (finish) Satellite Kickstart Default User Data (user\_data) Parameters:

Again, this page is much short in 6.1 as many of the additional steps required in 6.0 are no longer required

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Installation Medium

**Installation Media**

Next item to address is the fact that the installation media currently doent have your location/organisation set correctly

In order to take care of this, get a list of installation media

hammer medium list

Make of note of the ID of the media you want more info on

hammer medium info --id 7 Id: 7 Name: Example\_Org/Library/Red\_Hat\_Server/Red\_Hat\_En terprise\_Linux\_7\_Server\_Kickstart\_x86\_64\_7\_1 Path: http://satellite.example.com/pulp/repos/Examp le\_Org/Library/content/dist/rhel/server/7/7.1/x86\_64/kickstart/ OS Family: Redhat Operating systems: RedHat 7.1 Organisations:

Example Org Created at: 2015/12/07 10:11:21 Updated at: 2015/12/07 10:11:21

Looks like the organisation is set but the lociation isnt, so we will correct that

hammer location add-medium --medium-id 7 --name "${LOC}"

Final check

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Installation Medium

hammer medium info --id 7 Id: 7 Name: Example\_Org/Library/Red\_Hat\_Server/Red\_Hat\_En terprise\_Linux\_7\_Server\_Kickstart\_x86\_64\_7\_1 Path: http://satellite.example.com/pulp/repos/Examp le\_Org/Library/content/dist/rhel/server/7/7.1/x86\_64/kickstart/ OS Family: Redhat Operating systems: RedHat 7.1 Locations: Europe Organisations:

Example Org Created at: 2015/12/07 10:11:21 Updated at: 2015/12/07 10:11:21

Looks like I forgot to get the 7.2 kickstart as well, so lets add that repo and get it syncronised

hammer repository-set enable --organization "${ORG}" --product "Red Hat Enterprise Linux Server" --name "Red Hat Enterprise L inux 7 Server (Kickstart)" --releasever "7.2" --basearch "x86\_6 4"

Repository enabled

hammer repository list --organization "${ORG}" ---|------------------------------------------------------------ -------|---------------------------------|--------------|------- ---------------------------------------------------------------- ---------- ID | NAME

| PRODUCT | CONTENT TYPE | URL

---|------------------------------------------------------------ -------|---------------------------------|--------------|------- ---------------------------------------------------------------- ---------- 1 | Red Hat Enterprise Linux 7 Server Kickstart x86\_64 7.1

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Installation Medium

| Red Hat Enterprise Linux Server | yum | https: //cdn.redhat.com/content/dist/rhel/server/7/7.1/x86\_64/kickstart

11 | Red Hat Enterprise Linux 7 Server Kickstart x86\_64 7.2

| Red Hat Enterprise Linux Server | yum | https: //cdn.redhat.com/content/dist/rhel/server/7/7.2/x86\_64/kickstart

4 | Red Hat Enterprise Linux 7 Server - RH Common RPMs x86\_64 7 Server | Red Hat Enterprise Linux Server | yum | https: //cdn.redhat.com/content/dist/rhel/server/7/7Server/x86\_64/rh-co mmon/os 2 | Red Hat Enterprise Linux 7 Server RPMs x86\_64 7Server

| Red Hat Enterprise Linux Server | yum | https: //cdn.redhat.com/content/dist/rhel/server/7/7Server/x86\_64/os

3 | Red Hat Satellite Tools 6.2 for RHEL 7 Server RPMs x86\_64

| Red Hat Enterprise Linux Server | yum | https: //cdn.redhat.com/content/dist/rhel/server/7/7Server/x86\_64/sat-t ools/6.... ---|------------------------------------------------------------ -------|---------------------------------|--------------|------- ---------------------------------------------------------------- ----------

hammer repository synchronize --id 11 --organization "${ORG}"

We will also need to add the location to this one

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Installation Medium

hammer location add-medium --medium-id 8 --name "${LOC}"

hammer medium info --id 8 Id: 8 Name: Example\_Org/Library/Red\_Hat\_Server/Red\_Hat\_En terprise\_Linux\_7\_Server\_Kickstart\_x86\_64\_7\_2 Path: http://satellite.example.com/pulp/repos/Examp le\_Org/Library/content/dist/rhel/server/7/7.2/x86\_64/kickstart/ OS Family: Redhat Operating systems: RedHat 7.2 Locations: Europe Organisations:

Example Org Created at: 2015/12/07 13:08:54 Updated at: 2015/12/07 13:08:54

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Puppet Environment

**Puppet Environment - Location**

Now we need to make sure that the puppet environment is assigned to our location. So lets list the environments

hammer environment list ---|--------------------------------------- ID | NAME ---|--------------------------------------- 2 | KT\_Example\_Org\_Library\_cv\_rhel7\_base\_3 1 | production ---|---------------------------------------

Now to get more info about our puppet environment

# hammer environment info --id 2 id: 2 Name: KT\_Example\_Org\_Library\_cv\_rhel7\_base\_3 Puppetclasses:

access\_insights\_client Locations:

Default Location Organisations:

Example Org Created at: 2015/12/07 12:23:58 Updated at: 2015/12/07 12:23:58

OK, so we can see that the location isnt set (its only in the Default Location right now), lets fix that

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Puppet Environment

# hammer environment update --help Usage:

hammer environment update [OPTIONS]

Options: --id ID --location-ids LOCATION\_IDS Comma separated list of val ues.

--locations LOCATION\_NAMES Comma separated list of val ues.

--name NAME Environment name --new-name NEW\_NAME --organization-ids ORGANIZATION\_IDS organization ID

Comma separated list of val ues.

--organizations ORGANIZATION\_NAMES Comma separated list of val ues.

-h, --help print help

So that looks straighforward then

# hammer environment update --id 2 --locations "${LOC}" Environment updated

Lets check

hammer environment info --id 2 Id: 2 Name: KT\_Example\_Org\_Library\_cv\_rhel7\_base\_3 Puppetclasses:

access\_insights\_client Locations: Europe Organisations:

Example Org Created at: 2015/12/07 12:23:58 Updated at: 2015/12/07 12:23:58

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Puppet Environment

Looks good now

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Host Groups

**Host Groups**

Rather than applying multiple settings to an individual host, Satellite 6 uses hostgroups.

Multiple HostGroups can be added and they can also be nested in a hierarchical manner.

Examples

DC North

Applications Database

PostgSQL MariaDB Infrastructure Online

DC South

Applications Database

Oracle Mongo Infrastructure Online

Webservers

Configuration can be applied at any level.

For example, your DNS servers can be set at the top level (DC North/DC South) where as mailserver settings may be defined lower down the hierachy

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Defining Host Groups

**Defining Host Groups**

This page has been entirely re-written in the update to 6.1, nearly all of the work arounds are now not required thankfully.

hammer hostgroup create --help Usage:

hammer hostgroup create [OPTIONS]

Options:

--architecture ARCHITECTURE\_NAME Architect ure name

--architecture-id ARCHITECTURE\_ID --content-source-id CONTENT\_SOURCE\_ID --content-view CONTENT\_VIEW\_NAME Name to s earch by

--content-view-id CONTENT\_VIEW\_ID content v iew numeric identifier

--domain DOMAIN\_NAME Domain na me

--domain-id DOMAIN\_ID Numerical ID or domain name --environment ENVIRONMENT\_NAME Environme nt name

--environment-id ENVIRONMENT\_ID --lifecycle-environment LIFECYCLE\_ENVIRONMENT\_NAME Name to s earch by

--lifecycle-environment-id LIFECYCLE\_ENVIRONMENT\_ID ID of the environment --location-ids LOCATION\_IDS Comma sep arated list of values.

--locations LOCATION\_NAMES Comma sep arated list of values.

--medium MEDIUM\_NAME Medium na me

--medium-id MEDIUM\_ID --name NAME --operatingsystem OPERATINGSYSTEM\_TITLE Operating

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Defining Host Groups

system title --operatingsystem-id OPERATINGSYSTEM\_ID --organization-ids ORGANIZATION\_IDS organizat ion ID

Comma sep arated list of values.

--organizations ORGANIZATION\_NAMES Comma sep arated list of values.

--parent PARENT\_NAME Name of p arent hostgroup

--parent-id PARENT\_ID --partition-table, --ptable PARTITION\_TABLE\_NAME Partition table name --partition-table-id, --ptable-id PARTITION\_TABLE\_ID --puppet-ca-proxy PUPPET\_CA\_PROXY\_NAME Name of p uppet CA proxy

--puppet-ca-proxy-id PUPPET\_CA\_PROXY\_ID --puppet-class-ids, --puppetclass-ids PUPPETCLASS\_IDS List of p uppetclass ids

Comma sep arated list of values.

--puppet-classes PUPPET\_CLASS\_NAMES Comma sep arated list of values.

--puppet-proxy PUPPET\_PROXY\_NAME Name of p uppet proxy

--puppet-proxy-id PUPPET\_PROXY\_ID --realm REALM\_NAME Name to s earch by

--realm-id REALM\_ID Numerical ID or realm name --subnet SUBNET\_NAME Subnet na me

--subnet-id SUBNET\_ID -h, --help print hel p

**We will create a host group called "DC North" in the Library - Lifecycle Environment. From the previous section, we know that our --operatingsystem- id is 1 and the --partition-table is "Kickstart default"**

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Defining Host Groups

hammer hostgroup create --name "DC North" \

--architecture "x86\_64" --domain "example.com"\ --environment "KT\_Example\_Org\_Library\_cv\_rhel7\_base\_3"\ --medium "Example\_Org/Library/Red\_Hat\_Server/Red\_Hat\_Enterprise \_Linux\_7\_Server\_Kickstart\_x86\_64\_7\_2"\

--operatingsystem-id 1 --partition-table "Kickstart default"\ --puppet-ca-proxy-id 1 --puppet-proxy-id 1 \ --subnet "172.16.0.0/24" --content-source-id "1" \ --organizations "${ORG}" --locations "${LOC}" \ --lifecycle-environment "Library" --content-view "${CV1}"

There are two things we cant do with the above command

Set the activation key Set the root password

To fix the first one

hammer hostgroup set-parameter --hostgroup "DC North" --name "k t\_activation\_keys" --value "${AK1}"

Unfortunately the second one (setting the root password at the host group level still cant be done, although it looks like the code has been merged upstream and so is hopefully coming to Satellite soon.

We will just live with this for now and set the root password at the host creation time, in the next section

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Host Creation

**Host Creation**

Just as for the previous section, this page is now dramatically simpler, the workarounds have been removed, as in Satellite 6.1, they are no longer needed as there are many more options in hammer host create

hammer host create --help

Usage:

hammer host create [OPTIONS]

Options:

--architecture ARCHITECTURE\_NAME Architec ture name

--architecture-id ARCHITECTURE\_ID --ask-root-password ASK\_ROOT\_PW One of t rue/false, yes/no, 1/0.

--build BUILD One of t rue/false, yes/no, 1/0.

Default: "true" --comment COMMENT Addition al information about this host

--compute-attributes COMPUTE\_ATTRS Compute resource attributes.

Comma-se parated list of key=value.

--compute-profile COMPUTE\_PROFILE\_NAME Name to search by

--compute-profile-id COMPUTE\_PROFILE\_ID --compute-resource COMPUTE\_RESOURCE\_NAME Compute resource name

--compute-resource-id COMPUTE\_RESOURCE\_ID --domain DOMAIN\_NAME Domain n ame

--domain-id DOMAIN\_ID Numerica l ID or domain name

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Host Creation

--enabled ENABLED One of t rue/false, yes/no, 1/0.

Default: "true" --environment ENVIRONMENT\_NAME Environm ent name

--environment-id ENVIRONMENT\_ID --hostgroup HOSTGROUP\_NAME Hostgrou p name

--hostgroup-id HOSTGROUP\_ID --image IMAGE\_NAME Name to search by

--image-id IMAGE\_ID --interface INTERFACE Interfac e parameters.

Comma-se parated list of key=value.

Can be s pecified multiple times.

--ip IP not requ ired if using a subnet with DHCP proxy

--location LOCATION\_NAME Location name --location-id LOCATION\_ID --mac MAC required for managed host that is bare metal, not required if it's a

virtual machine

--managed MANAGED One of t rue/false, yes/no, 1/0.

Default: "true" --medium MEDIUM\_NAME Medium n ame

--medium-id MEDIUM\_ID --model MODEL\_NAME Model na me

--model-id MODEL\_ID --name NAME --operatingsystem OPERATINGSYSTEM\_TITLE Operatin

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Host Creation

g system title

--operatingsystem-id OPERATINGSYSTEM\_ID --organization ORGANIZATION\_NAME Organisa tion name

--organization-id ORGANIZATION\_ID organiza tion ID

--owner OWNER\_LOGIN Login of the owner --owner-id OWNER\_ID ID of th e owner

--owner-type OWNER\_TYPE Host's o wner type

Possible value(s): 'User', 'Usergroup' --parameters PARAMS Host par ameters.

Comma-se parated list of key=value.

Comma-se parated list of key=value.

--partition-table, --ptable PARTITION\_TABLE\_NAME Partitio n table name

--partition-table-id, --ptable-id PARTITION\_TABLE\_ID --progress-report-id PROGRESS\_REPORT\_ID UUID to track orchestration tasks status, GET

/api/orc hestration/:UUID/tasks

--provision-method METHOD Possible value(s): 'build', 'image' --puppet-ca-proxy PUPPET\_CA\_PROXY\_NAME --puppet-ca-proxy-id PUPPET\_CA\_PROXY\_ID --puppet-class-ids, --puppetclass-ids PUPPET\_CLASS\_IDS Comma se parated list of values.

--puppet-classes PUPPET\_CLASS\_NAMES Comma se parated list of values.

--puppet-proxy PUPPET\_PROXY\_NAME --puppet-proxy-id PUPPET\_PROXY\_ID --realm REALM\_NAME Name to search by

--realm-id REALM\_ID Numerica

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Host Creation

l ID or realm name

--root-pass ROOT\_PASS required if host is managed and value is not inherited from host group o r

default password in settings

--root-password ROOT\_PW --subnet SUBNET\_NAME Subnet n ame

--subnet-id SUBNET\_ID --volume VOLUME Volume p arameters

Comma-se parated list of key=value.

Can be s pecified multiple times.

-h, --help print he lp

As also mentioned in the previous section, setting of the root password at the host-group level is not possible, so we will set it here at the host creation stage (we can even have it prompt us for the password, of you dont want such things in your bash history)

All we really need now, for bare metal provisioning (physical or virtual without compute resources configured) is a mac-address

hammer host create --hostgroup "DC North" --name="satellite-prov ision-test" \

--mac "00:1a:4a:16:01:7a" --root-password "redhat00" \ --organization "${ORG}" --location "${LOC}" Host created

or get it to prompt us for the password

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hammer host create --hostgroup "DC North" --name="satellite-prov ision-test" \

--mac "00:1a:4a:16:01:7a" --ask-root-password yes \ --organization "${ORG}" --location "${LOC}" Enter the root password for the host: Host created

Now power on the host to be provisioned.

The build should progress in these distinct stages

The initial Anaconda package install stage

Host Creation

Next the post section will run, switching you to VT3 so that you can follow.

First it will register, via subscription-manager, to the Satellite

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Next it will install the katello-agent

Host Creation

This will be followed by a yum update

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After the full update, the final install will happen, it will install puppet

Host Creation

Finally, once puppet installs, it will configure puppet and inform the Satellite server that it is built

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Back on the Satellite Server, under Hosts > All Hosts , you will see the new host initally has a blue A (Active) next to it. This simply means that puppet has made changes during its initial run. It will change to a green O (no changes) next time puppet runs -in about 30 mins time.

Also on the Satellite Server, check the status of the Content Hosts Hosts > Content Hosts

Host Creation

*Click on the Content Host to see more details (the screenshots abave and below need updating)*

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Host Creation

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Troubleshooting

**Troubleshooting**

Its quite possible, with all the configuration that we have just done, that we missed something or that a bug (this is a \*.0 release afterall) has meant that we are unable to provision.

In this section I will give you a few places to check that have been common issues with my own Satellite configuration.

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Locations and Organisations

**Locations and Organisations**

These are relatively new in the development lifecycle, and while the GA is better than the beta, there is still room for improvement.

A nice way to check that we have all the elements we need in each Location and Organisation is to use the hammer command to list all info about each one

hammer location list ---|----------------- ID | NAME ---|----------------- 2 | Default\_Location 9 | Europe ---|-----------------

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Locations and Organisations

hammer location info --id 9 Id: 9 Name: Europe Users:

Smart proxies:

Subnets:

172.16.30.0/24 (172.16.30.0/24) Compute resources:

Installation media:

Templates:

freeipa\_register () idm\_register () Kickstart default iPXE (iPXE) Kickstart default PXELinux (PXELinux) puppet.conf () PXELinux global default (PXELinux) Satellite Finish Default (finish) Satellite Kickstart Default (provision) Satellite User Data Default (user\_data) subscription\_manager\_registration () Domains:

Example.com Environments:

Hostgroups:

DC North Parameters:

Created at: 2014/09/18 17:58:16 Updated at: 2014/09/20 16:03:21

The things that jump out to me above are

missing Smart Proxies Missing Installation Media

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Locations and Organisations

Missing (puppet) Envronments Missing Parameters

Next lets take a look for organisations

hammer organization list ---|----------------------|----------------------|-------------- -------------------- ID | NAME | LABEL | DESCRIPTION ---|----------------------|----------------------|-------------- -------------------- 1 | Default\_Organization | Default\_Organization | Default\_Organ ization Organization 10 | Example Org | Example\_Org | ---|----------------------|----------------------|-------------- --------------------

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Locations and Organisations

hammer organization info --id 10 Id: 10 Name: Example Org Users:

Smart proxies:

sat6-hammer-test.example.com Subnets:

172.16.30.0/24 (172.16.30.0/24) Compute resources:

Installation media:

Example\_Org/Library/Red\_Hat\_6\_Server\_Kickstart\_x86\_64\_6\_5 Templates:

freeipa\_register () idm\_register () Kickstart default iPXE (iPXE) Kickstart default PXELinux (PXELinux) puppet.conf () PXELinux global default (PXELinux) Satellite Finish Default (finish) Satellite Kickstart Default (provision) Satellite User Data Default (user\_data) subscription\_manager\_registration () Domains:

example.com Environments:

KT\_Example\_Org\_Library\_RHEL65\_Content\_View\_1\_5 Hostgroups:

DC North Parameters:

Created at: 2014/09/18 17:58:19 Updated at: 2014/09/20 16:03:12 Label: Example\_Org Description: Red Hat Repository URL: https://cdn.redhat.com

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Locations and Organisations

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Tasks

**Tasks**

From time to time a task with either get stuck or fail. The steps listed on this upstream webpage can be very useful to help on these occasions

http://www.katello.org/troubleshooting/index.html

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Next Steps

**Next Steps**

In the next book in the series, Next Steps with Satellite 6 Command Line, I will cover

Adding Other Repositories

Third Party RPM Repositories Puppet Repositories Adding Existing Hosts to Satellite Backing Up the Satellite Working with Capsules

The sister book this one, Getting Started with Satellite 6 Command line is aimed to achieving the same results as this book but by using only the command line interface, called Hammer

**Other Books**

Here are details of other books I have planned.

Getting Started with Satellite 6 (sister to this book) Getting Started with Satellite 6 Command line (THIS BOOK) Next Steps with Satellite 6 (Working on the outline)

*Next Steps with Satellite 6 Command line (sister to this book, not started) Doing More with Satellite 6 (not started) Doing More with Satellite 6 Command line (not started)*

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