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New Deployment Features in Red Hat Satellite Server

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Red Hat
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presented by



Agenda

Overview of Red Hat Satellite Server, Spacewalk, & Cobbler

Summary of New Features

In Detail

Kickstart Templating & Snippet Examples

New Command Line Tools

Q&A

Red Hat Network (RHN) Satellite

is an easy-to-use, advanced systems management platform for your Linux infrastructure

Based on the open source project, Spacewalk

Features

Configuration

Updating

Monitoring

Provisioning



About Cobbler

Project Started ~2006

Next Generation Install Server for Linux

Handles PXE, Reinstallation, Virtualization

General Purpose “IT glue”

“Let's share all the tools we typically build in house”

Why Integrate The Two

Lots of people already using these together

#1 reason -- PXE integration, be able to reinstall via
MAC/IP or menu “off the truck”

More virtualization controls

Better templating features for kickstart

Be able to include upstream advancements

Provide support from Red Hat

Ability to initiate kickstarts from the CLI with koan

Full PXE Integration

/tftpboot is now managed automatically for you

No manual setup or custom scripting required

Boot menus automatically served-up

MAC based targetting and reinstalls

More Virtualization Control

Avoid extra data entry. Can now save virt ram/disk settings with a profile

Install into LVM volume groups and partitions

Control over bridging choices: support for multi-homed guests

Can now do KVM and Xen FV installs

Kickstart Templating

Manage Seas of Chaos

CheetahTemplate.org/learn.html

Define arbitrary variables at distro, profile, or system level,
use them in your kickstarts

```
"backup=vanhalen.example.org" ... $backup
```

Use programming statements:

```
#if $foo == "bar"
```

```
#for $nameserver in $nameservers
```

```
#set $ct = $ct + 2
```

Variable editor

Define variables to be used in the templates

Three places variables can be defined:

Kickstart Distribution

Kickstart Profile

System

The screenshot shows the 'Kickstart Variables' editor. At the top, there is a navigation bar with tabs: 'Kickstart Details' (selected), 'System Details', 'Software', 'Activation Keys', 'Scripts', and 'Kickstart File'. Below this is a secondary bar with 'Details', 'Operating System', 'Variables' (selected), 'Advanced Options', and 'Bare Metal Kickstart'. The main heading is 'Kickstart Variables'. A text box explains: 'Kickstart variables can be used to substitute values into kickstart profiles. To define a variable simply add 'name=value' to the box below. You would then use \$name within the profile to substitute in the value.' Below the text is a large text area labeled 'Variables:' on the left. The text area contains the text 'org=19'. At the bottom left of the text area is a button labeled 'Update Variables'.

Kickstart Snippets

Reuse pieces of common kickstart code between kickstarts

Kickstart Templating variables can be used in snippets

Allows building up a library of reusable tricks

Eliminates cutting & pasting in install logic

Sample snippet

Kickstart Snippet: cobbler_register

Snippet Details

File Path: /var/lib/cobbler/snippets/cobbler_register

Tip: This is where the snippet resides on the RHN Satellite file system.

Snippet Macro: \$SNIPPET('cobbler_register')

Tip: Copy and paste the snippet macro into your kickstart profiles to make the full snippet appear in that kickstart profile.

Snippet Type: Default

Tip: Default kickstart snippets are available to all organizations. These snippets cannot be modified.

Kickstart Snippet Contents

Contents

```
# Begin cobbler registration
#if $getVar('system_name','') = ''
#if $str($getVar('register_new_installs','')) in [ "1", "true", "yes", "y" ]
if [ -f "/usr/bin/cobbler-register" ]; then
    cobbler-register --server=$server --fqdn '*AUTO*' --profile=$profile_name --batch
fi
#else
# cobbler registration is disabled in /etc/cobbler/settings
#end if
#else
# skipping for system-based installation
#end if
# End cobbler registration
```

Snippet creation

Create New Snippet

Create Snippet

Snippet Name*

Tip: The snippet name is the name of a file that will reside in this organization's snippet directory. Any standard unix file name characters are acceptable. Snippet names containing slash character or snippet names beginning with period are not allowed.

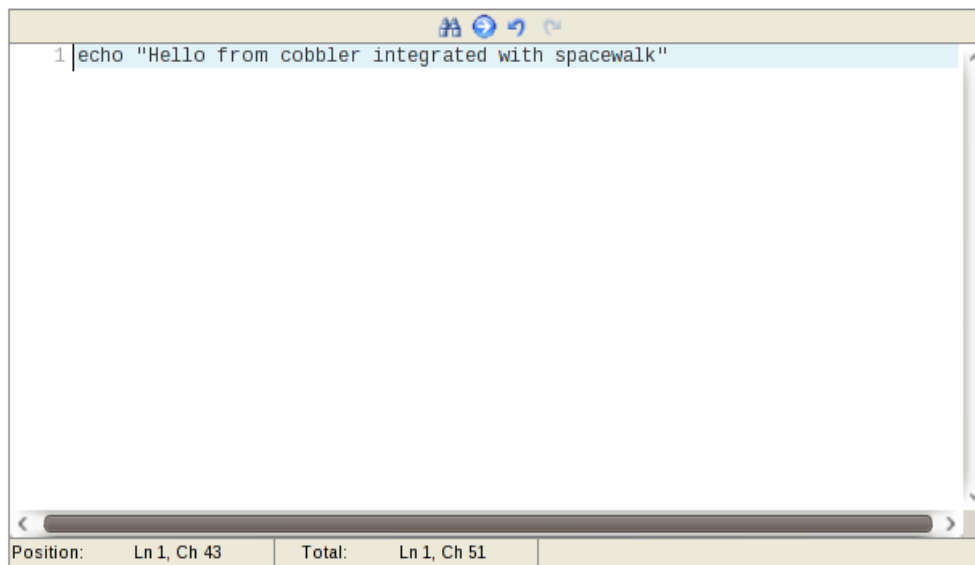
Snippet Type:

Custom

Tip: Custom kickstart snippets will be only available to the organization.

Kickstart Snippet Contents

Contents*



```
1 | echo "Hello from cobbler integrated with spacewalk"
```

Position: Ln 1, Ch 43 Total: Ln 1, Ch 51

☒ Toggle editor

Create Snippet

Example Snippets that Ship With Cobbler

redhat_register (already shown)

keep_ssh_host_keys

(Will preserve arbitrary files in future versions)

Advanced Networking (several, used in concert)

Keeps mac order intact

Allows arbitrarily named interfaces

Allows defining of static routes

Etc ...

And many more (28)

Software RAID Snippet (1/2)

```
#set disks = $getVar('$disks', 'sda')

#set count = len($disks.split(','))

#if $count >= 2

part /boot --fstype ext3 --size=100 --asprimary --ondisk=${disks.split(',')[0]}

part /boot2 --fstype ext3 --size=100 --asprimary --ondisk=${disks.split(',')[1]}

part swap --size=1024 --asprimary --ondisk=${disks.split(',')[0]}

part swap --size=1024 --asprimary --ondisk=${disks.split(',')[1]}

part raid.10 --size=1 --grow --ondisk=${disks.split(',')[0]}

part raid.11 --size=1 --grow --ondisk=${disks.split(',')[1]}

raid pv.01 --fstype "physical volume (LVM)" --level=RAID1 --device=md0 raid.10 raid.11

#else
```

(CONTINUED)

Software RAID Snippet (2/2)

```
part /boot --fstype ext3 --size=100 --asprimary --ondisk=${disks.split(',')[0]}  
  
part swap --size=1024 --asprimary --ondisk=${disks.split(',')[0]}  
  
part pv.01 --size=1 --grow --ondisk=${disks.split(',')[0]}  
  
#end if  
  
volgroup internal_hd --pesize=32768 pv.01  
  
logvol / --name=slash --vgname=internal_hd --fstype ext3 --size=4096  
  
logvol /tmp --name=tmp --vgname=internal_hd --fstype ext3 --size=1024  
  
logvol /var --name=var --vgname=internal_hd --fstype ext3 --size=8192  
  
logvol /usr --name=usr --vgname=internal_hd --fstype ext3 --size=8192
```

Cobbler Buildiso

Don't have a PXE-capable network setup?

“cobbler buildiso”

Generates a PXE-equivalent net install CD with all of your profiles on it

Kickstarts are sourced from the cobbler server and changes do not require a rebuild of the CD.

Cobbler Command Line

```
Cobbler distro edit --name=RHEL4
```

```
  kopts="selinux=disabled" # just kidding, Dan
```

```
Cobbler profile edit --name=RHEL5-webserver --
```

```
  kickstart=/opt/kickstarts/foo.ks --virt-ram=2048
```

```
Cobbler profile find --distro=RHEL4-i386 | xargs -n1 --
```

```
  replace cobbler profile edit --name={} --distro=RHEL5-  
i386
```

```
Cobbler system find --profile=dbserver | xargs -n1 --
```

```
  replace cobbler system edit --name={} --netboot-  
enabled=1
```

Koan Command Line

```
koan --list=profiles --server=mgmt.example.org
```

```
ssh host.example.org koan --virt --profile=webserver --  
server=mgmt.example.org
```

```
ssh host.example.org koan --replace-self --  
server=mgmt.example.org
```

Future Plans

Largely User Driven

Cobbler:

- More Developments around the “Koan Live CD”

- More Deployment Features Available From Cobbler API

- Making the Codebase Even Easier For New Contributors

Spacewalk Future Plans:

- Support Cobbler DHCP/DNS/Power Management?

Together:

- World Domination

Project Pages

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

Cobbler <http://fedorahosted.org/cobbler>



QUESTIONS?

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