

RedHat Kickstart

Cookie Cutter Installations

Documentation ?

- <https://docs.centos.org/en-US/8-docs/advanced-install/>
- This document is adapted and modified from the Red Hat Enterprise Linux 8 Installation Guide, available at https://access.redhat.com/documentation/en-us/red_hat_enterprise_linux/8/.

What are Kickstart Installations?

- From the documentation on the previous slide:
- Kickstart provides a way to automate the CentOS installation process, either partially or fully.
- They are based on (surprisingly enough) *Kickstart* files.

Kickstart versus Containers

- Both allow “Configuration as Code”, albeit very different.
- Kickstart is well suited for individual systems, physical or virtual.
- Containers require a Docker/Podman server, but allow a low overhead virtual infrastructure.

So how can I make my first kickstart file?

- Cheat ! Really !
- If you have used the GUI Install Configuration to build a system, you have also created a kickstart file.
- */root/anaconda-ks.cfg*
- Cheat, steal it and peek at it.

Example of anaconda-ks.cfg

- From example build of ***kick-01***
- With very minor changes we can make another system practically identical.

How do I use it?

- Multiple methods are supported, all require hijacking the normal boot process.
- My preference is to use http.

Hijacking Boot Process (1)

- For VMs, must use BIOS firmware, not EFI
- Wait until you see the following screen (on next slide)...
- Press ESCAPE to get the boot prompt, then enter:
linux ks=<Kickstart file URL>
- Press return

Hijacking Boot Process (2)

```
CentOS Linux 8

Install CentOS Linux 8
Test this media & install CentOS Linux 8

Troubleshooting >

Press Tab for full configuration options on menu items.
```

OR, use Red Hat's online tool

- Requires a Red Hat account (but you can create one at no cost)

<https://access.redhat.com/labs/kickstartconfig/>

- Field trip – test drive the online tool

Using Minimal Boot ISO (1)

- Because full installation ISOs have grown in size, it is impractical (and wasteful) to copy the full image to DVD.
- Boot ISOs are available that will fit on a CD if needed, or easily fits on a USB drive.
- Using Kickstart, you only need a single copy of the full installation image on your network.

Using Minimal Boot ISO (2)

- Kickstart provides a method to specify a URL that has a copy of the full installation media:

```
url --url=http://<hostname or IP>/CentOS8
```

Creating a Kickstart Server (1)

https://docs.centos.org/en-US/8-docs/advanced-install/assembly_creating-installation-sources-for-kickstart-installations/

- Start with a server that has httpd installed
- Create a directory for the kickstart files that is within the scope of httpd:

```
mkdir /var/www/html/ks
```

Creating a Kickstart Server (2)

- Load the desired ISO onto the web server
- Mount the ISO using:

```
mount -o loop,ro -t iso9660 <full path & name>.iso  
/mnt/CentOS8
```

Creating a Kickstart Server (3)

- Copy the mounted contents into Apache's scope

```
cp -r /mnt/CentOS8 /var/www/html/
```

- When finished, unmount the ISO

```
umount /mnt/CentOS8
```

Creating a Kickstart Server (4)

- You now have a web server that allows access to your kickstart files here:

`http://<hostname or IP>/ks/mykickstartfile.cfg`

- And the full installation image is available here:

`http://<hostname or IP>/CentOS8`

Kickstart Reference (1)

https://docs.centos.org/en-US/8-docs/advanced-install/assembly_kickstart-script-file-format-reference/

- Commands
- Sections
- Section Types

Add on sections (%addon addon_name)

Package Selection Sections (start with %packages)

Script Sections (start with \$pre, %pre-install, %post, %onerror)

Kickstart Reference (2)

- # This is a comment line
- 'Commands' typically come first.
- Other sections can have more than one instance and can be in any order.
- Missing required items will result in the installer pausing for user input for the missing piece.

Kickstart Reference (3)

- %packages – marks beginning of package list
- @^Env – Specifies an entire environment
 - @^Infrastructure Server
- @Group – Specifies group to install
 - @X Window System
 - @Desktop
- %end – marks the end of the package list

Kickstart Reference (4)

- Specify individual packages by name

sqlite

curl

- * acts as wildcard in package names

docbook*

mingw32*

Kickstart Reference (5)

- Run ***yum module list*** on an installed system to see what modules are available
- - or -@ excludes packages or groups
- %packages also has a long list of options
@packages –multilib –ignoremissing

Converting Kickstart from 7 to 8

<https://access.redhat.com/labs/kickstartconvert/>

- Answer a few questions, click ***Start to Convert.***
- Click ***Download New File.***
- A diff window is provided so you know what was changed.

Converting Kickstart from 7 to 8

https://access.redhat.com/documentation/en-us/red_hat_enterprise_linux/8/html/considerations_in_adopting_rhel_8/installer-and-image-creation_considerations-in-adopting-rhel-8

- If only it worked!
- I tried a conversion on a .cfg file, and as of now it complains about the software packages.

That's all folks !

