

RockCluster GTCMC

Manual RockCluster 6.1.1

Autor: Carlos Alberto Vaz de Moraes Júnior.

UFPel, Pelotas, RS

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1 Post Install

1.1 Yum download only

- Download only package plugin for yum

Install the package including “downloadonly” plugin (RHEL6):

```
# yum install yum-plugin-downloadonly.
```

Run yum command with “-downloadonly” to only download the package option as follows:

```
# yum install -downloadonly -downloadaddir=<directory> <package>
```

Confirm the RPM files are available in the specified download directory.

- Yumdownloader

If downloading a installed package, “yumdownloader” is useful.

Install the yum-utils package:

```
# yum install yum-utils
```

Run the command followed by the desired package:

```
# yumdownloader <package>
```

1.2 Disable Hard Boot

- Disable the feature that reinstalls compute nodes after a hard reboot

When compute nodes experience a hard reboot (e.g., when the compute node is reset by pushing the power button or after a power failure), they will reformat the root file system and reinstall their base operating environment.

To disable this feature:

Login to the frontend

Create a file that will override the default:

```
# cd /export/rocks/install  
# cp rocks-dist/arch/build/nodes/auto-kickstart.xml  
site-profiles/6.1.1/nodes/replace-auto-kickstart.xml
```

Where arch is “i386” or “x86_64”.

Edit the file site-profiles/6.1.1/nodes/replace-auto-kickstart.xml

Remove the line:

```
<package>rocks-boot-auto<package>
```

Rebuild the distribution:

```
# cd /export/rocks/install  
# rocks create distro
```

Reinstall all your compute nodes.

- An alternative to reinstalling all your compute nodes is to login to each compute node and execute:

```
# /etc/rc.d/init.d/rocks-grub stop  
# /sbin/chkconfig -del rocks-grub
```

1.3 Install freenx server

- Currently there is a version of NX and FreeNX in the CentOS Extras repository for both CentOS 5 and CentOS 6.

```
nano /etc/yum.repos.d/CentOS-Base.repo
```

turn on

To install the stable version of NX / FreeNX, issue this command from the server:

```
[root@server ~]# yum install nx freenx
```

1.4 Remote power on configuration

- Configure remote management

```
chmod a+s /sbin/shutdown (optional and unsafe)
```

```
ethtool eth0
```

```
ethtool -s eth0 wol g
```

```
echo '/usr/sbin/ethtool -s eth0 wol g' >> /etc/rc.d/rc.local
```

2 Updating the kernel and rocks-boot to support newer machines in the sand boa (6.1.1) rockcluster.

2.1 Step 1 - Update Headnode Kernel

- Bring the kernel from 2.6.32-431 to kernel 2.6.32-696 (current update) in the head node with:

```
# yum --enablerepo base upgrade kernel (upgrades kernel on head node)
```

```
# cp /var/cache/yum/base/packages/kernel*.rpm  
/export/rocks/install/contrib/6.1.1/x86_64/RPMS/
```

```
# cp /var/cache/yum/base/packages/dracut*.rpm  
/export/rocks/install/contrib/6.1.1/x86_64/RPMS/
```

```
# cd /export/rocks/install
```

```
# rocks create distro
```

```
# reboot
```

OBS: list of packages in the export RPM folder

```
dracut-004*.rpm
```

```
dracut-kernel-004*.rpm
```

```
kernel-2.6.32-*.el6.x86_64.rpm
```

```
kernel-firmware-2.6.32-*.el6.noarch.rpm
```

OBS: See F.A.Q if the copies of the rpm files fail.

Optional: reinstall at least one compute node to verify if it loads correctly with the new kernel.

```
# rocks list host
```

```
# rocks run host compute "/boot/kickstart/cluster-kickstart"
```

2.2 Step 2 - Build New Booting Rocks Utility

- Build the kernel to create a new booting Rocks utility on the Head Node. To accomplish this task, get the new kernel from Rocks Git Repo:

https://github.com/rocksclusters-attic/kernel/tree/ROCKS_6_1_1

- seek for clone or download → download zip (zip name: kernel-ROCKS_6_1_1.zip size: 55,3MB)

or download using wget (as described below).

```
wget https://github.com/rocksclusters-attic/kernel/archive/ROCKS_6_1_1.zip
```

After the download, follow the steps below:

```
# cd /export/
```

```
# mkdir src
```

```
# cd src
```

put the downloaded kernel-ROCKS_6_1_1.zip file in /export/src/ folder and unzip the file with:

```
unzip ROCKS_6_1_1.zip
```

the folder kernel-ROCKS_6_1_1 will be created. Now enter in the following folder

```
# cd /export/src/kernel-ROCKS_6_1_1/src/rocks-boot
```

```
# make rpm (takes a long time: around 20 40 minutes depending the cpu)
```

2.3 Step 3 - Install New Booting Utility

- Now copy binary RPMs into the directory where the distribution building utility (rocks-dist) will find and include them. Then rebuild the Rock Cluster.

```
# cp /export/src/kernel-ROCKS_6_1_1/RPMS/x86_64/rocks-boot*
```

```
/export/rocks/install/contrib/6.1.1/x86_64/RPMS/
```

```
# cd /export/rocks/install
```

```
# rocks create distro
```

- Install the newly created initrd.img-6.1.1-x86_64 and its matching kernel vmlinuz-6.1.1-x86_64 so the PXE boot node utility will get the new kernel.

```
# cd /export/rocks/install
```

```
# rpm -Uvh --force rocks-dist/x86_64/RedHat/RPMS/rocks-boot-6*.rpm
```

```
# cp /boot/kickstart/default/initrd.img-6.1.1-x86_64 /tftpboot/pxelinux/
```

```
# cp /boot/kickstart/default/vmlinuz-6.1.1-x86_64 /tftpboot/pxelinux/
```

- Optional: Reinstall nodes

```
# rocks run host compute "/boot/kickstart/cluster-kickstart"
```

2.3.1 F.A.Q

1. Q: Missing anaconda*tar.gz in step 2.

A: Wrong kernel-ROCKS*zip file. The correct one already has all necessary files and binaries. Correct size file around 55MB.

See https://github.com/rocksclusters-attic/kernel/tree/ROCKS_6_1_1 for correct file.

2. Q:Error:Package: kernel-2.6.32-*.el6.x86_64 (updates) Requires: dracut-kernel >= 004-*.el6 Installed: dracut-kernel-004-*.el6.noarch

A: Missing dracut-kernel update in the /export/rocks/install/contrib/6.1/x86_64/RPMS/ folder

reinstall or download (see faq 3) dracut and dracut-kernel rpms, and copy the files to /export/rocks/install/contrib/6.1.1/x86_64/RPMS/ folder

3. If the system erases the packages after the update:

Sometimes, yum erases the packages after the install. As a result, it is not possible copy the necessary rpm files to the appropriate folder. To fix this problem, follow one of the steps below:

A: 1) Downloadonly plugin for yum Install the package including "downloadonly"plugin:

```
# yum install yum-plugin-downloadonly Run yum command with --downloadonly"option as follows:
```

```
# yum install --downloadonly --downloaddir=<directory> <package> Confirm the RPM files are available in the specified download directory.
```

Or:

2) Yumdownloader

If downloading a installed package, "yumdownloader" is useful.

Install the yum-utils package:

```
# yum install yum-utils Run the command followed by the desired package:
```

```
# yumdownloader <package>
```

3 SGE

3.1 sge queues errors

- running in specific node
qsub -l hostname='compute-0-1' job.sh
- host list:
qconf -sh
- error test list:
qstat -f
- reset node errors (in all.q queue):
qmod -cq all.q

3.2 sge queue enable and disable

- `qmod -e all.q@compute-0-3`
`qmod -d all.q@compute-0-3`

Referências

- [1] The primary mode for support for Rocks is through our email discussion list. **Docs and Support**. Disponível em: <http://www.rocksclusters.org/docs.html>. Acesso em: 29 de outubro de 2018.