

# osg roll: Users Guide



Open Science Grid

**3.1.40 Edition**



**osg roll: Users Guide :**    **Open Science Grid**

3.1.40 Edition

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# Preface

The Rocks osg Roll uses the latest stable OSG Release to provide High Throughput Computing environment for Rocks clusters. The Rocks osg Roll builds on the very good work by the OSG team, to seamlessly install and configure the *de facto* standard grid middleware on Rocks Clusters.

- Cluster Planning: To understand the default value of some attributes, this roll roll assumes the following minimal partition scheme by default:

```
/          (reformatted at kickstart)
/var       (reformatted at kickstart)
/scratch   (a partition to host local dirs to be shared in cluster)
/hadoop    (a partition to be used by hadoop)
```

For any given CE node/server, if the partition intended for local dirs to share is NOT `/scratch`, then it can be set by using the rocks attr `"OSG_CE_Export_LocalDir"` to a desired value. For example we want to share local dirs located in `/export`, then use:

```
###global
#/opt/rocks/bin/rocks set attr OSG_CE_Export_LocalDir value="/export "
### or host specific
#/opt/rocks/bin/rocks set host attr login-0-0 OSG_CE_Export_LocalDir value="/export "
```

Similarly, to change the default partition/dir used by hadoop, require change in rocks attrs `OSG_HadoopDataDir` and/or `OSG_HadoopData`.

Please visit the Open Science Grid site<sup>1</sup> to learn more about their release and the individual software components.

## Notes

1. <https://twiki.grid.iu.edu/bin/view/Documentation/Release3/>

# Chapter 1. Overview

**Table 1-1. Summary**

|                        |              |
|------------------------|--------------|
| Name                   | osg          |
| Version                | 3.1.40       |
| Maintained By          | Rocks Group  |
| Architecture           | i386, x86_64 |
| Compatible with Rocks® | 3.1.40       |

The osg roll has the following requirements of other rolls. Compatability with all known rolls is assured, and all known conflicts are listed. There is no assurance of compatiblity with third-party rolls.

**Table 1-2. Compatibility**

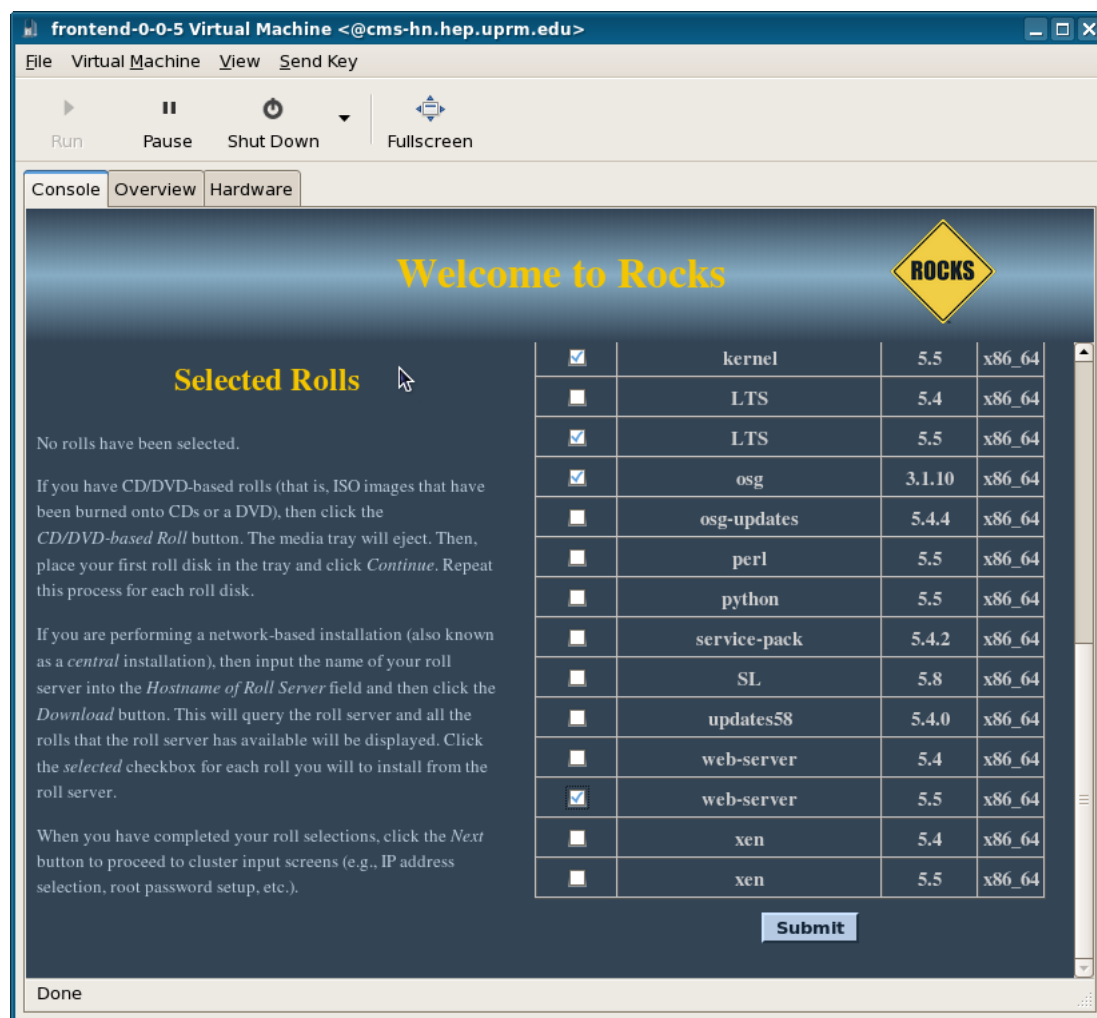
| Requires | Conflicts |
|----------|-----------|
| Base     |           |
|          | Condor    |
| Ganglia  |           |
|          | Java      |
| Kernel   |           |
| OS       |           |

# Chapter 2. Installing the osg Roll

The osg roll can be installed during the Frontend installation or added to a running frontend. In either case, client nodes must be (re)installed.

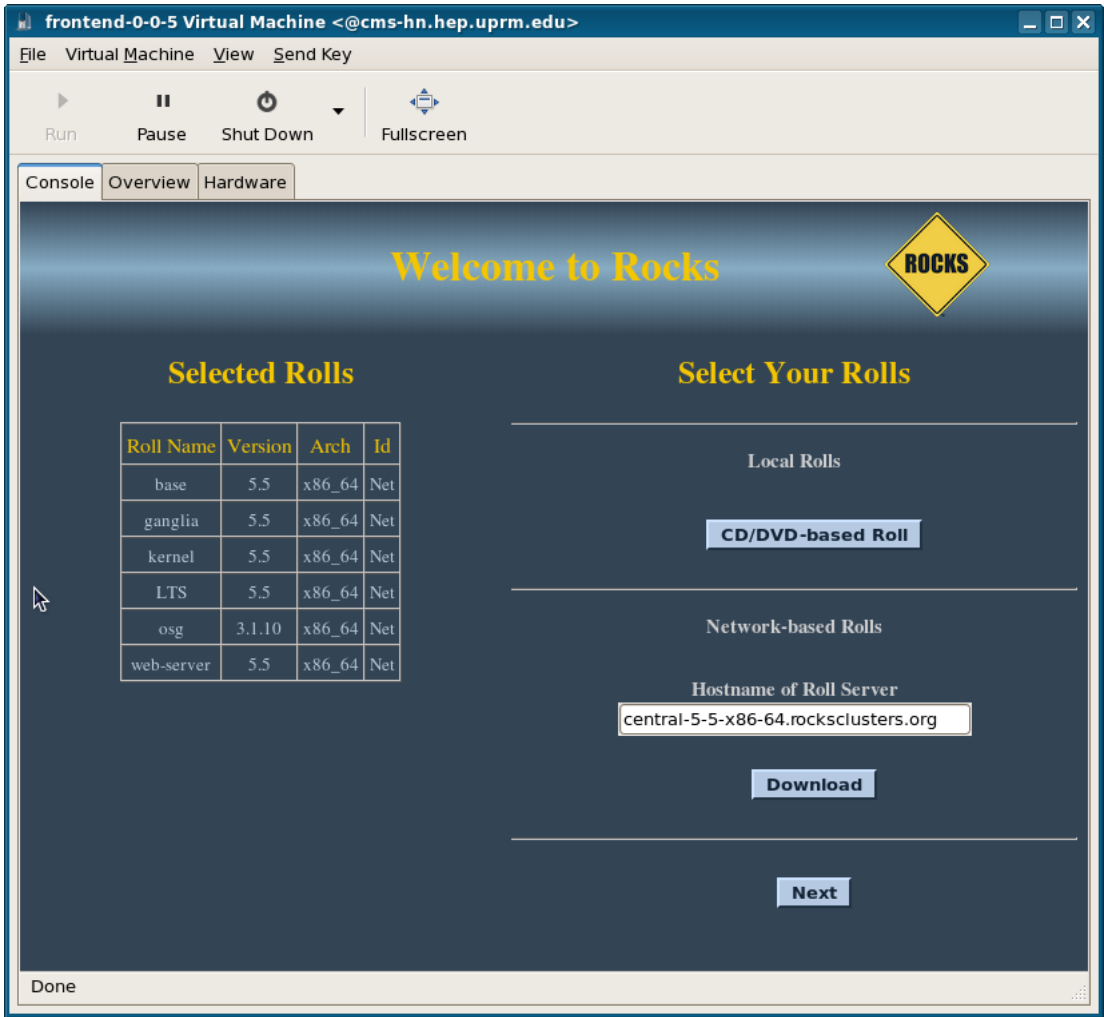
## 2.1. On a New Server

When the osg roll is installed during the initial installation of your server (or cluster), the procedure is documented in section 1.2 of Rocks® usersguide. You should reach a screen as shown below.

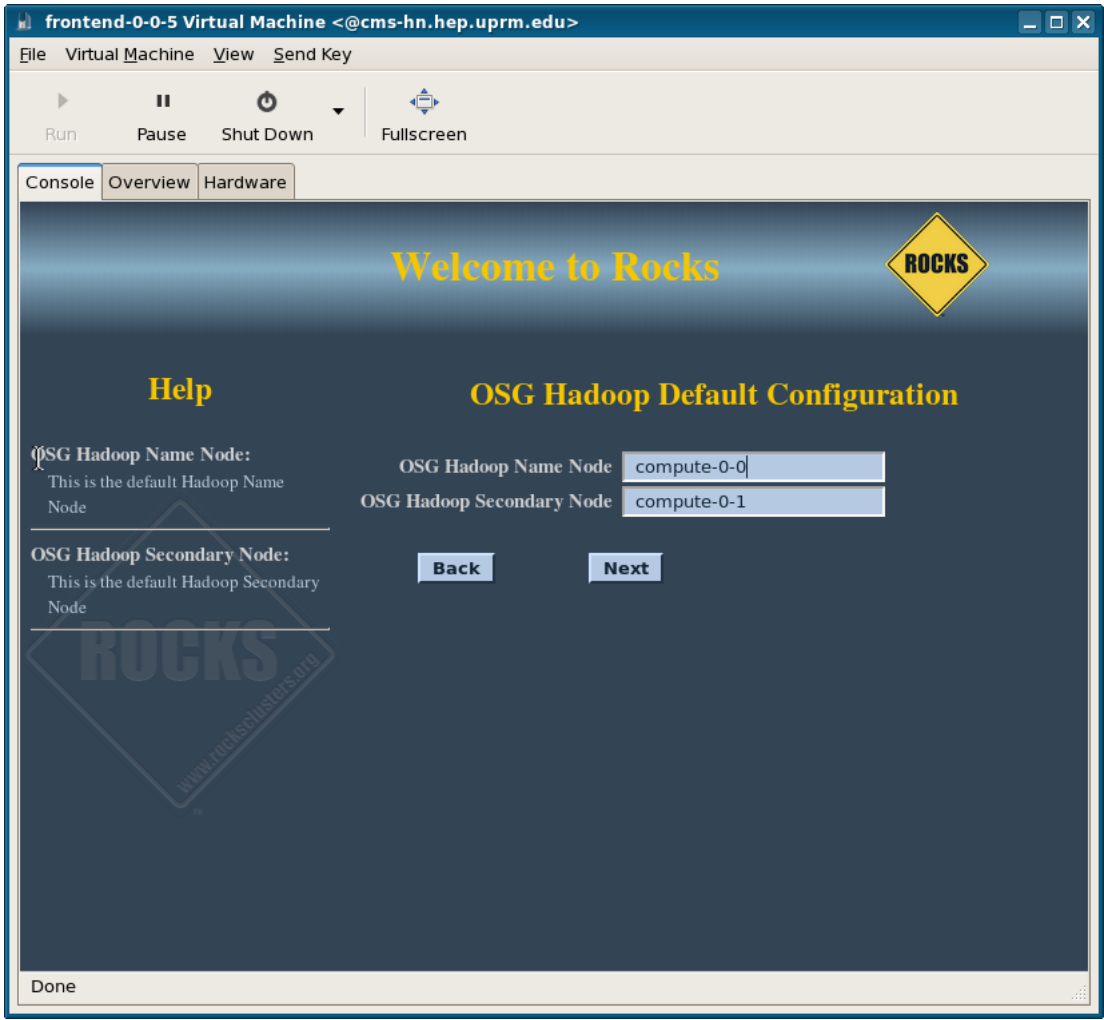


Remember conflicting rolls are HTCondor and Java.

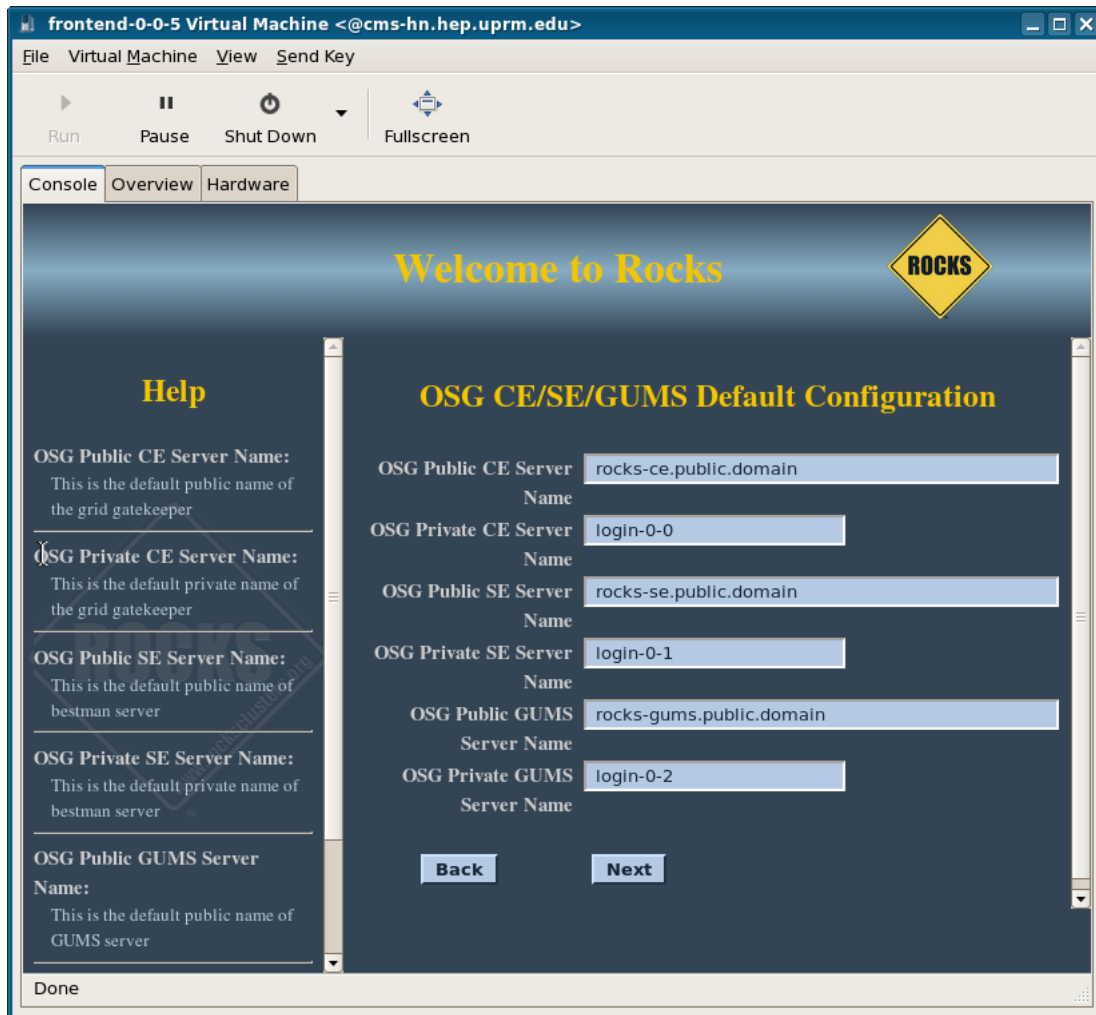
Select the osg roll from the list of available rolls when you see a screen like shown below:



During the installation process, there will be two screens related to the osg roll. As shown below. The first to choose the default hadoop primary and secondary servers.



The second to choose the default gridservers CE (gatekeeper), SE (bestman), GUMS servers.



If not sure leave it as is, these default can be changed later any time.

Once the osg roll is loaded the installer will continue installation automatically with no further user input.

Other appliances can be made part of the execution pool through setting an appliance attribute and reinstalling those nodes.

## 2.2. Install on Running System

The osg roll can be installed on a running system. The following assumes that roll is available in .iso form and is called "osg.iso".

```
$ su - root
# rocks add roll osg.iso
# rocks enable roll osg
# rocks create distro
# rocks run roll osg | bash
# shutdown -r now
```

# Chapter 3. Customizing the OSG Roll -- Attributes

This chapter present the different attributes used by the OSG roll and the default values. The list of attributes is organized in tables according to its function.

By default, Hadoop, Condor and WorkerClient with glexec are installed on Rocks **compute** appliances, but turned off. For more information see Customizing OSG packages to install.

## 3.1. Customizing user/group ID attrs

This section list the default OSG configuration value of attributes used to set uid/gid for system users/groups used by OSG packages.



Since Rocks 5.4.3 and beyond, by default Rocks uid<500 are not exported to nodes. However all gid are still exported.



In case of change of gid attr also requires manually change in /etc/group on frontend since groups are exported to nodes.



Change of **OSG\_hdfsuid** requires additional manually change in /etc/passwd and /export/home/hadoop on frontend to correct ownership.

**Table 3-1. Attributes Used in OSG Roll for userid/group customization (uid/gid)**

| Attribute Name | Description                                                                |
|----------------|----------------------------------------------------------------------------|
| OSG_condoruid  | Configure uid for condor user. Created on Frontend. Default: 407           |
| OSG_condorgid  | Configure gid for condor user (group). Created on Frontend. Default: 407   |
| OSG_hdfsuid    | Configure uid for hdfs user. Created on Frontend. Default: 458             |
| OSG_hadoopgid  | Configure gid for hadoop group. Created on Frontend. Default: 409          |
| OSG_mapreduid  | Configure uid for mapred user (hadoop) . Default: 461                      |
| OSG_mapredgid  | Configure gid for mapred group (hadoop). Created on Frontend. Default: 461 |
| OSG_tomcatuid  | Configure uid for tomcat user. Default: 91                                 |

| Attribute Name  | Description                                                                       |
|-----------------|-----------------------------------------------------------------------------------|
| OSG_tomcatgid   | Configure gid for tomcat group. Created on Frontend. Default: 91                  |
| OSG_gratiauid   | Configure uid for gratia user. Default: 464                                       |
| OSG_gratiagid   | Configure gid for gratia group. Created on Frontend. Default: 464                 |
| OSG_bestmanuid  | Configure uid for bestman user. Default: 459                                      |
| OSG_bestmangid  | Configure gid for bestman group. Created on Frontend. Default: 410                |
| OSG_xrootduid   | Configure uid for xrootd user. Default: 460                                       |
| OSG_xrootdgid   | Configure gid for xrootd group. Default: 412                                      |
| OSG_glexecuid   | Configure uid for glexec user. Default: 463                                       |
| OSG_glexecgid   | Configure gid for glexec group. Created on Frontend. Default: 464                 |
| OSG_squiduid    | Configure uid for squid user. Default: 450                                        |
| OSG_squidgid    | Configure gid for squid user (group). Default: 450                                |
| OSG_cvmfsuid    | Configure uid for cvmfs user. Default: 470                                        |
| OSG_cvmfsgid    | Configure gid for cvmfs user (group). Default: 470                                |
| OSG_fusegid     | Configure gid for fuse group. Default: 408                                        |
| OSG_rsvuid      | Configure uid for rsv user. Default: 452                                          |
| OSG_rsvgid      | Configure gid for rsv group. Created on Frontend. Default: 452                    |
| OSG_cndrcronuid | Configure uid for cndrcron user (condor cron). Default: 466                       |
| OSG_cndrcrongid | Configure gid for cndrcron group (condor cron). Created on Frontend. Default: 467 |

## 3.2. Customizing install ('triggers') attrs

By default, Hadoop, Condor and WorkerClient with glexec are installed on Rocks **compute** appliances, while Gridftp and gatekeeper server **are ready** to install on **login-0-0** host and Gridftp hadoop and bestman2 **are ready** to install on **login-0-1** host.

For Rocks 5.4 and newer, the OSG roll makes use of *attributes* to enable install of Hadoop, Condor, WorkerClient with glexec, Bestman2 server (SE), gridftp server, hdfs gridftp server, gatekeeper server (CE), squid server, gums server and cvmfs to be installed on any host or appliance. This may be particularly useful to groups who are including the Xen/KVM roll and would like OSG servers to install on VM Container appliances.

**Table 3-2. Attributes Used in OSG Roll for packages install ('triggers')**

| Attribute Name    | Description                                                                                                  |
|-------------------|--------------------------------------------------------------------------------------------------------------|
| OSG_Condor_Client | Enable/Disable Condor Installation on any particular Appliance or Host. Default: true (on compute appliance) |

| Attribute Name | Description                                                                                                                                                                                                                                                                                                                                              |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OSG_Client     | Enable/Disable OSG Client installation on any particular Appliance or Host. Install includes hadoop and glexec. Default: true (on compute appliance)                                                                                                                                                                                                     |
| OSG_CE         | Enable/Disable Gatekeeper installation on any particular Appliance or Host. Install includes hadoop (and condor if OSG_CE set to "condor"). Depending on the cluster scheduler acceptable values are "condor", "sge." If default configuration is kept (login-0-0 as CE), then it is needed to set OSG_CE to "condor" or "sge" on login-0-0. No Default. |
| OSG_SE         | Enable/Disable bestman-server installation on any particular Appliance or Host. Install includes hadoop. If default configuration is kept (login-0-1 as SE), then it is needed to set OSG_SE to 'true' on login-0-1. No Default.                                                                                                                         |
| OSG_GRIDFTP    | Enable/Disable gridftp server installation on any particular Appliance or Host. If default configuration is kept (login-0-0 as classic gridftp server), then it is needed to set OSG_GRIDFTP to 'true' on login-0-0. No Default.                                                                                                                         |
| OSG_GFTP_HDFS  | Enable/Disable hadoop gridftp server installation on any particular Appliance or Host. Install includes hadoop. If default configuration is kept (login-0-1 as hdfs gridftp server), then it is needed to set OSG_GFTP_HDFS to 'true' on login-0-1. No Default.                                                                                          |
| OSG_HADOOP     | Enable/Disable hadoop installation on any particular Appliance or Host. Not needed if set already OSG_Client or OSG_SE or OSG_GFTP_HDFS or OSG_CE on the node. No Default.                                                                                                                                                                               |
| OSG_XRD        | Enable/Disable xrootd server installation on any particular Appliance or Host. No Default.                                                                                                                                                                                                                                                               |
| OSG_RSV        | Enable/Disable rsv installation on any particular Appliance or Host. No Default.                                                                                                                                                                                                                                                                         |
| OSG_GUMS       | Enable/Disable gums server installation on any particular Appliance or Host. No Default.                                                                                                                                                                                                                                                                 |
| OSG_SQUID      | Enable/Disable squid server installation on any particular Appliance or Host. No Default.                                                                                                                                                                                                                                                                |
| OSG_CVMFS      | Enable/Disable cvmfs installation on any particular Appliance or Host. No Default.                                                                                                                                                                                                                                                                       |

### 3.3. Customizing Hadoop

By default Hadoop is installed on Rocks **compute** appliances.

**Table 3-3. Attributes Used in OSG Roll for Hadoop customization**

| Attribute Name             | Description                                                                                                                                                                                                                                |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OSG_HadoopNameNode         | Configure Hadoop NameNode server name used on any particular Appliance or Host installation. Check for a line like this:<br>HADOOP_NAMENODE=compute-0-0 in /etc/sysconfig/hadoop Default: compute-0-0                                      |
| OSG_HadoopSecondaryNode    | Configure Hadoop SecondaryName server name used on any particular Appliance or Host installation. Check for a line like this:<br>HADOOP_SECONDARY_NAMENODE=compute-0-1 in /etc/sysconfig/hadoop Default: compute-0-1                       |
| OSG_HadoopDataDir          | Configure Hadoop base data dir used on any particular Appliance or Host installation. Check for a line like this: HADOOP_DATADIR=/hadoop in /etc/sysconfig/hadoop Default: /hadoop                                                         |
| OSG_HadoopData             | Configure Hadoop data dir used on any particular Appliance or Host installation. Check for a line like this: HADOOP_DATA=/hadoop/data in /etc/sysconfig/hadoop Default: /hadoop/data                                                       |
| OSG_HadoopCheckPointDirs   | Configure Hadoop check point dirs used on any particular Appliance or Host installation. Check for a line like this:<br>HADOOP_CHECKPOINT_DIRS=/home/hadoop,/scratch/hadoop in /etc/sysconfig/hadoop Default: /home/hadoop,/scratch/hadoop |
| OSG_HadoopCheckPointPeriod | Configure Hadoop check point period used on any particular Appliance or Host installation. Check for a line like this:<br>HADOOP_CHECKPOINT_PERIOD=600 in /etc/sysconfig/hadoop Default: 600                                               |
| OSG_HadoopUpdateFstab      | Configure Hadoop for update fstab used on any particular Appliance or Host installation. Check for a line like this: HADOOP_UPDATE_FSTAB=1 in /etc/sysconfig/hadoop Default: 1                                                             |

## 3.4. Customizing Condor

By default Condor is installed on Rocks **compute** appliances and frontend. Attributes are inspired on the original Condor roll.

**Table 3-4. Attributes Used in OSG Roll for Condor Customization**

| Attribute Name | Description |
|----------------|-------------|
|----------------|-------------|

| Attribute Name                 | Description                                                                                                                                                                                                                |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OSG_Condor_Master              | Redefine the Condor Master that nodes use. Default: public frontend name                                                                                                                                                   |
| OSG_Condor_Network             | Define which network interface is used for Condor traffic. Default: frontends are set to public, clients are set to private.                                                                                               |
| OSG_Condor_Daemons             | Define which Condor execution daemons are installed. Default: [MASTER (global)], [MASTER, SCHEDD, COLLECTOR, NEGOTIATOR (frontends)], [MASTER, SCHEDD (login appliance)], [MASTER, STARTD (compute appliance)]             |
| OSG_Condor_PortLow             | Lower Port range that Condor will use to communicate among daemons. Removal of this Attribute will result in removal of the LOWPORT entry in 01_rocks_condor_config.local after syncing the configuration. Default: 40000  |
| OSG_Condor_PortHigh            | Upper Port range that Condor will use to communicate among daemons. Removal of this Attribute will result in removal of the HIGHPORT entry in 01_rocks_condor_config.local after syncing the configuration. Default: 50000 |
| OSG_Condor_HostAllow           | Comma separates list of allowed readers/writers for Condor. Translates to HOSTALLOW directive in Condor Configuration file. Default: + rocks-ce                                                                            |
| OSG_Condor_PasswordAuth        | Use a shared pool password, instead of host-based authentication. Default: no.                                                                                                                                             |
| OSG_Condor_EnableMPI           | Configure a local scheduler for MPI Universe Support. Default: no                                                                                                                                                          |
| OSG_Condor_EnableAMAZON_EC2    | Configure a local scheduler for AMAZON_EC2 Support. Default: no                                                                                                                                                            |
| OSG_Condor_EnableT3GRID_SUBMIT | Configure a local grid submitter for interactive nodes (I use to called it CRAB submit). Default: no                                                                                                                       |
| OSG_Condor_EnableT3GRID_CMSSW  | Configure a local compute nodes for CMS jobs. (See /opt/rocks/lib/python2.6/site-packages/rocks/commands/report/host/osg/condor/config/plugin_t3cmssw Default: yes                                                         |

## 3.5. Customizing common Cluster grid attrs

By default common attributes used on **compute** appliances, CE, SE and GUMS servers.

**Table 3-5. Attributes Used in OSG Roll for common Cluster Customization**

| Attribute Name | Description |
|----------------|-------------|
|----------------|-------------|

| Attribute Name           | Description                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OSG_GlobusPortRange      | Configure Globus Port Range used on any particular Appliance or Host installation. This entry is used for setting iptable firewall on grid servers. Default: 20000:25000                                                                                                                                                                                                                                                     |
| OSG_GlobusTcpPortRange   | Configure Globus TCP Port Range used on any particular Appliance or Host installation. This entry is used for setting GLOBUS_TCP_PORT_RANGE on grid servers. (note change : by , compared with OSG_GlobusPortRange) Default: 20000,25000                                                                                                                                                                                     |
| OSG_GlobusTcpSourceRange | Configure Globus TCP Source Range used on any particular Appliance or Host installation. This entry is used for setting GLOBUS_TCP_SOURCE_RANGE on grid servers. (note change : by , compared with OSG_GlobusPortRange) Default: 20000,25000                                                                                                                                                                                 |
| OSG_StoredCertsDir       | Set Base Dir where grid certs are stored for Appliance or Host installation. During installation of CE or SE hostcert.pem and hostkey.pem are copied to /root. Default: /root/certs                                                                                                                                                                                                                                          |
| OSGCEPrivate             | Configure which cluster node is the Grid gatekeeper server node (private domain). Used as memory which node is acting as gatekeeper server. Default: login-0-0                                                                                                                                                                                                                                                               |
| OSGSEPrivate             | Configure which cluster node is the bestman server node (private domain). Used as memory which node is acting as bestman server. Default: login-0-1                                                                                                                                                                                                                                                                          |
| OSGGUMSPprivate          | Configure which cluster node is the gums server node (private domain). Used as memory which node is acting as gums server. Default: login-0-2                                                                                                                                                                                                                                                                                |
| OSG_GumsServer           | Configure Gums server name used on any particular Appliance or Host installation. Needed to configure authentication for gridusers in /etc/lcmaps.db. Also used to fill gums_host ( in /etc/osg/config.d/10-misc.ini) and gums_hosts (in /etc/osg/config.d/30-rsv.ini) Default: rocks-gums.&Kickstart_PublicDNSDomain; (rocks-gums.public.domain on a New Cluster Server install)                                            |
| OSG_SEServer             | Configure bestman server public name used on any particular Appliance or Host or bestman server installation. Used to match info in /boot/install_cert_se.sh as condition before try installing grid-certs. Also used in configuring CE server to fill site_read an site_write (in /etc/osg/config.d/10-storage.ini). Default: rocks-se.&Kickstart_PublicDNSDomain; (rocks-se.public.domain on a New Cluster Server install) |

## 3.6. Customizing CE (Gatekeeper) attrs

Attributes used to configure CE Server.

**Table 3-6. Attributes Used in OSG Roll CE Customization**

| Attribute Name            | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OSG_SquidServer           | Configure squid server name used by cluster. Used to fill information 'location' in <code>/etc/osg/config.d/01-squid.ini</code> on CE nodes. Default: no                                                                                                                                                                                                                                                                                                                                            |
| OSG_GFTPServer            | Configure gridftp server name (non-hdfs or hdfs) used on any particular Appliance or Host installation. Used to fill information in <code>/etc/osg/config.d/30-gip.ini</code> (gsiftp_host) on CE nodes. Default: rocks-ce.&Kickstart_PublicDNSDomain;                                                                                                                                                                                                                                              |
| OSG_CEServer              | Configure Grid gatekeeper server public name used on any particular Appliance or Host or gatekeeper installation. Used to match info in <code>/boot/install_cert_ce.sh</code> as condition before try installing grid-certs. Also used to fill information 'job_contact' and 'util_contact' in <code>/etc/osg/config.d/20-condor.ini</code> (or <code>/etc/osg/config.d/20-sge.ini</code> ). Default: rocks-ce.&Kickstart_PublicDNSDomain; (rocks-ce.public.domain on a New Cluster Server install) |
|                           | gip attributes to fill<br><code>/etc/osg/config.d/30-gip.ini</code>                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| OSG_CE_gip_multicluster   | Number of clusters. If not set assumes 1.                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| OSG_CE_gip_SubCluster1    | Subcluster id, used to fill '[Subcluster id-fill-here]' If not set, uses cluster attribute "Info_ClusterName"                                                                                                                                                                                                                                                                                                                                                                                       |
| OSG_CE_gip_ClusterName1   | Subcluster name, used to fill cluster 'name' If not set, uses cluster attribute "Info_ClusterName"_CE_1                                                                                                                                                                                                                                                                                                                                                                                             |
| OSG_CE_gip_NumberOfNodes1 | Subcluster number of nodes, used to fill cluster 'node_count' If not set, uses number of compute nodes (at least 1).                                                                                                                                                                                                                                                                                                                                                                                |
| OSG_CE_gip_mb_of_Ram1     | Subcluster RAM info, used to fill cluster 'ram_mb' If not set, uses RAM from CE.                                                                                                                                                                                                                                                                                                                                                                                                                    |
| OSG_CE_gip_cpu_model1     | Subcluster cpu model, used to fill cluster 'cpu_model' If not set, uses cpu model from CE.                                                                                                                                                                                                                                                                                                                                                                                                          |
| OSG_CE_gip_cpu_vendor1    | Subcluster cpu vendor, used to fill cluster 'cpu_vendor' If not set, uses cpu vendor from CE.                                                                                                                                                                                                                                                                                                                                                                                                       |
| OSG_CE_gip_cpu_speed1     | Subcluster cpu speed, used to fill cluster 'cpu_speed_mhz' If not set, uses cpu speed from CE.                                                                                                                                                                                                                                                                                                                                                                                                      |
| OSG_CE_gip_arch1          | Subcluster arch, used to fill cluster 'cpu_platform' If not set, uses arch from roll base.                                                                                                                                                                                                                                                                                                                                                                                                          |

| Attribute Name               | Description                                                                                                          |
|------------------------------|----------------------------------------------------------------------------------------------------------------------|
| OSG_CE_gip_CpusPerNode1      | Subcluster number of cpus per node, used to fill cluster 'cpus_per_node' If not set, uses number of cpus from CE.    |
| OSG_CE_gip_CoresPerNode1     | Subcluster number of cores per node, used to fill cluster 'cores_per_node' If not set, uses number of cores from CE. |
| OSG_CE_gip_inbound1          | Subcluster inbound network, used to fill cluster 'inbound_network' If not set, uses FALSE.                           |
| OSG_CE_gip_outbound1         | Subcluster outbound network, used to fill cluster 'outbound_network' If not set, uses TRUE.                          |
| OSG_CE_gip_NmultiSE          | Number of SE servers asociated to CE No default.                                                                     |
| OSG_CE_gip_SE1               | SE id, used to fill '[SE if-fill-here]'. No Default.                                                                 |
| OSG_CE_gip_SE_OIM_Name1      | SE OIM Name, used to fill 'name'. No Default.                                                                        |
| OSG_CE_gip_SEServer1         | SE Name (fqdn) needed to fill 'srm_endpoint'. If not set, it will try 'OSG_SE_Server'                                |
| OSG_CE_gip_SEprovider1       | SE provider implemetation. Used to fill 'provider_implementation'. If not set, it will try 'bestman'                 |
| OSG_CE_gip_SEimplementation1 | SE provider implemetation. Used to fill 'implementation'. If not set, it will try 'bestman'                          |
| OSG_CE_gip_SEversion1        | SE version. Used to fill 'version'. No default.                                                                      |
| OSG_CE_gip_SEpath1           | SE default path. Used to fill 'default_path'. No default.                                                            |
| OSG_CE_gip_SE_use_df         | SE flag to set df. Used to fill 'use_df'. If not set, will try 'True'                                                |
|                              | site info attributes to fill<br>/etc/osg/config.d/40-siteinfo.ini                                                    |

## 3.7. Customizing SE (Bestman) attrs

Attributes used to configure SE Server.

**Table 3-7. Attributes Used in OSG Roll SE Customization**

| Attribute Name              | Description                                                                                                                                                                                                                                          |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OSG_SRMlocalPathListAllowed | Configure localPathListAllowed used on any particular Appliance or Host installation of bestman server. Check for a line like this:<br>localPathListAllowed=/mnt/hadoop/data/se in<br>/etc/bestman2/conf/bestman2.rc Default:<br>/mnt/hadoop/data/se |

| Attribute Name               | Description                                                                                                                                                                                                                                                                                                            |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OSG_SRMsupportedProtocolList | Set supportedProtocolList used on any particular Appliance or Host installation of bestman server. This is the default gridftp server. Check for a line like this:<br>gsiftp://rocks-ce.&Kickstart_PublicDNSDomain;;2811 in /etc/bestman2/conf/bestman2.rc Default: gsiftp://rocks-ce.&Kickstart_PublicDNSDomain;;2811 |
| OSG_SRMuseplugging           | Setting "True" allow the use of plugin RoundRobinWithPath. By modifying /etc/bestman2/conf/bestman2.rc accordingly. The plugin uses /usr/share/java/bestman2/plugin/gsiftp.servers.txt to read the list of gridftp servers. Default: no                                                                                |

## 3.8. Customizing GUMS attrs

Attributes used to configure GUMS Server.

**Table 3-8. Attributes Used in OSG Roll GUMS Customization**

| Attribute Name    | Description                                                                                                                         |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| OSG_GUMSBackupDir | Configure the directory in which is located the backup config files and database for gums. Default: /path/to/gums/backup            |
| OSG_GUMSDNADMIN   | Configure the admin DN for gums used in the configuration scripts. Default: /DC=org/DC=doegrids/OU=People/CN=Name M LastName 123456 |

## 3.9. Customizing CVMFS attrs

Attributes used to configure cvmfs.

**Table 3-9. Attributes Used in OSG Roll CVMFS Customization**

| Attribute Name         | Description                                                       |
|------------------------|-------------------------------------------------------------------|
| OSG_CVMFS_REPOSITORIES | Configure CVMFS_REPOSITORIES for cvmfs. Default: cms.cern.ch      |
| OSG_CVMFS_CACHE_BASE   | Configure CVMFS_CACHE_BASE for cvmfs. Default: "/var/cache/cvmfs" |

| <b>Attribute Name</b> | <b>Description</b>                                                     |
|-----------------------|------------------------------------------------------------------------|
| OSG_CVMFS_QUOTA_LIMIT | Configure CVMFS_QUOTA_LIMIT for cvmfs (in MB). Default: 10000          |
| OSG_CVMFS_HTTP_PROXY  | Configure CVMFS_HTTP_PROXY for cvmfs. Default: "http://login-0-2:3128" |
| OSG_CMS_LOCAL_SITE    | Configure CMS_LOCAL_SITE for cvmfs. Default: "T3_US_PuertoRico"        |

# Chapter 4. Customizing the OSG Roll

This chapter describes some simple customizations that can be applied to the OSG roll in Rocks with version  $\geq 5.4$

A basic customization can be applied without any scripting/programming just by setting global, appliance, or host attributes and then kickstarting a node.

Customization can be done also through rocks commands, after setting attributes. Please see the commands `rocks set attr help`, `rocks list attr help` and examples in this chapter.

## 4.1. Examples of Hadoop Configuration

The following are short examples of how to customize Hadoop using Rocks commands.

- Change default Hadoop Node Name on all compute Appliances: `rocks set appliance attr compute OSG_HadoopNameNode value=hadoop-0-0`
- Change default Hadoop Secondary Name on all compute Appliances: `rocks set appliance attr compute OSG_HadoopSecondaryNode value=hadoop-0-1`
- Change default Hadoop Data Dir on all compute Appliances, for example two data disks: `rocks set appliance attr compute OSG_HadoopData value="/hadoop/data,/hadoop2/data"`

## 4.2. How to set new Gums server

The following are short examples of how to customize gums server using Rocks commands before kickstarting.

- Change default Gums server Name on all compute Appliances: `rocks set appliance attr compute OSG_GumsServer value="my-gums.my.edu."`
- Change default Gums server Name on a host: `rocks set host attr se-0-0 OSG_GumsServer value="my-gums.my.edu."`
- Change default Gums server Name global: `rocks set attr OSG_GumsServer value="my-gums.myglobal.edu."`

## 4.3. How to set Default Gridftp server used for Bestman

The following are short examples of how to customize default gridftp server using Rocks commands.

- Change default Gridftp server Name global: `rocks set attr OSG_SRMsupportedProtocolList value="gsiftp://mygridftp.my.edu:2811"`

## 4.4. Examples of Condor Configuration

The following are short examples of how to customize Condor using Rocks commands.

- Enable Condor install on all VM-Containers Appliances: `rocks add appliance attr vm-container OSG_Condor_Client true`
- Disable Condor install on particular node: `rocks set host attr compute-0-0 OSG_Condor_Client false`
- Define a New Condor Master: `rocks set attr OSG_Condor_Master central-master.my.edu`
- Enable MPI/Dedicated Scheduler: `rocks set attr OSG_Condor_EnableMPI true.`

Actively-running Condor daemons must be reconfigured for this attribute to take affect. This can be achieved dynamically on compute and frontend appliances using `rocks sync host osg condor frontend compute.`

Reinstalled nodes will build the correct configuration.

## 4.5. Reconfiguring CE/gatekeeper

A primitive configuration of CE is done during the install, the resulting configuration files are located in `/etc/osg/config.d` and is based on available information at install. To reconfigure a CE node changes on the ini files located in `/etc/osg/config.d` is needed followed by running the command `osg-configure -c`. This part is automatized by running the command

```
# rocks sync host osg CE <hostname>
```

This will rewrite `10-misc.ini`, `10-storage.ini`, `15-managedfork.ini`, `20-condor.ini` (or `20-sge.ini`), `30-gip.ini`, `40-network.ini`, `40-siteinfo.ini` and run the `osg` command `/usr/sbin/osg-configure -c`



To view the script of changes for the inifiles before making changes, use `rocks report host osg CE config <hostname>`



To generate the script, login on the CE node and run `rocks report host osg CE config <hostname> | rocks report script | bash` the output script will be written in `/root/CE_ini_filesConfigurator`

In case CE was not installed at kickstart, it is possible to install in a node or appliance after kickstart by setting `OSG_CE` to a given scheduler (in this example "condor") on a host or appliance and then syncing as shown below

```
# rocks set host attr <hostname> OSG_CE value=condor
```

```
# rocks sync host osg CE install <hostname>
```

To find information about CE configuration please see the OSG documentation at OSG twiki page<sup>1</sup>.

## 4.6. Reconfiguring SE/bestman

A initial configuration of Bestman server is done during the kickstart install, the resulting configuration files are `/etc/bestman2/conf/bestman2.rc` and `/etc/sysconfig/bestman2`. This configuration is based on available information at install. To reconfigure a bestman node after changes on any attribute that build those files requires rebuild the configuration by running the rocks command.

```
# rocks sync host osg bestman <hostname>
```

This will rewrite `/etc/bestman2/conf/bestman2.rc`, `/etc/sysconfig/bestman2`,



To view the script of changes for the files before making changes, use `rocks report host osg bestman config <hostname>`



To generate the script, login on the Bestman node and run `rocks report host osg bestman config <hostname> | rocks report script | bash` the output script will be written in `/root/BestmanConfigurator`

In case Bestman was not installed at kickstart, it is possible to install in a node or appliance after kickstart by setting `OSG_SE` to true on a host or appliance and then syncing as shown below

```
# rocks set host attr <hostname> OSG_SE value=true
# rocks sync host osg bestman install <hostname>
```

To find information about bestman configuration please see the OSG documentation at OSG twiki page<sup>2</sup>.

## 4.7. Reconfiguring xrootd

A initial configuration of xrootd server is done during the kickstart install, the resulting configuration file is `/etc/xrootd/xrootd-clustered.cfg`. This configuration is based on available information at install. To reconfigure a xrootd node after changes on any attribute that build the `.cfg` file requires rebuild the configuration by running the rocks command.

```
# rocks sync host osg xrootd <hostname>
```

This will rewrite `/etc/xrootd/xrootd-clustered.cfg`



To view the script of changes for the files before making changes, use `rocks report host osg xrootd config <hostname>`



To generate the script, login on the xrootd node and run `rocks report host osg xrootd config <hostname> | rocks report script | bash` the output script will be written in `/root/XrootdConfigurator`

In case Xrootd was not installed at kickstart, it is possible to install in a node or appliance after kickstart by setting `OSG_XRD` to true on a host or appliance and then syncing as shown below

```
# rocks set host attr <hostname> OSG_XRD value=true
# rocks sync host osg xrootd install <hostname>
```

To find information about xrootd configuration please see the OSG documentation at OSG twiki page<sup>3</sup>.

## 4.8. Reconfiguring Condor after Installation

The configuration of Condor is done during the install, the resulting configuration files are located in `/etc/condor/config.d/`. To reconfigure Condor on a node, make appropriate attribute using the commands above and then run

```
# rocks sync host osg condor <hostname>
```

This will rewrite the `01_rocks_condor_config.local` on the file and then calls the Condor command `/usr/sbin/condor_reconfig`



To view the contents of the `01_rocks_condor_config.local` before making changes, use `rocks report host osg condor config <hostname>`

To find information about administrating and using Condor Pools please see the original Condor manual at Condor manuals<sup>4</sup> or locally<sup>5</sup>.

## 4.9. Reconfiguring Hadoop after Installation

The configuration of Hadoop is done during the install, the resulting configuration file is `/etc/sysconfig/hadoop`. To reconfigure Hadoop on a node, make appropriate attribute using the commands above and then run

```
# rocks sync host osg hadoop <hostname>
```

This will rewrite the file `/etc/sysconfig/hadoop` and then calls the Hadoop command `service hadoop-firstboot start`



To view the contents of the `/etc/sysconfig/hadoop` before making changes, use `rocks report host osg hadoop config <hostname>`

## 4.10. Reconfiguring Frontier Squid after Installation

The default customization of Squid is done during the install, the resulting configuration file is `/etc/squid/customize.sh`. To reconfigure squid on a node, make appropriate attribute using the commands above and then run

```
# rocks sync host osg squid <hostname>
```

This will rewrite the file `/etc/squid/customize.sh` then you can start the service with the command `service frontier-squid start`



To view the contents of the `/etc/squid/customize.sh` before making changes, use `rocks report host osg squid config <hostname>`

## 4.11. Reconfiguring CVMFS

The default customization of CVMFS is done at the OS install, the resulting configuration files are: `/etc/cvmfs/default.local`, `/etc/cvmfs/config.d/cms.cern.ch.local`, `/etc/cvmfs/domain.d/cern.ch.local` and `/etc/fuse.conf` To reconfigure cvmfs on a node, make appropriate attribute using the commands above and then run

```
# rocks sync host osg cvmfs <hostname>
```

In case cvmfs was not installed at kickstart, it is possible to install in a node or appliance after kickstart by setting `OSG_CVMFS` on a host or appliance and then syncing as shown below

```
# rocks set host attr <hostname> OSG_CVMFS value=true
# rocks sync host osg cvmfs install <hostname>
```

This will rewrite the above files then you can reload the service with the command `cvmfs_config reload`



To view the contents of the files `/etc/cvmfs/default.local`, `/etc/cvmfs/config.d/cms.cern.ch.local`, `/etc/cvmfs/domain.d/cern.ch.local` and `/etc/fuse.conf` before making changes, use `rocks report host osg cvmfs config <hostname>`

## 4.12. Programatically changing the Contents of 01\_rocks\_condor\_config.local

Condor configuration is localized into `/etc/condor/config.d/01_rocks_condor_config.local`. This file is generated programatically from the output of `rocks report host osg condor config <hostname>`.

The command `rocks report host osg condor config` is defined by the OSG roll and is written in Python. This report command is extensible through Rocks command plugins.

To see a sample Condor plugin, view the file in location

`/opt/rocks/lib/python2.4/site-packages/rocks/commands/report/host/osg/condor/config/plugin_sample` which is reproduced here.

```
# $Id$
import rocks.commands

class Plugin(rocks.commands.Plugin):

    def provides(self):
        return 'sample'

    def run(self, argv):
        # Argv contains the hostname and the in memory key-value store
        # that is eventually written to
        # /etc/condor/config.d/01_rocks_condor_config.local
        # plugins can add/change/remove keys from the store

        # 1. Get the hostname and the key-value store, which
        #    is a python dictionary
        host, kvstore = argv

        # The following would add CONDOR_SAMPLE=Sample Plugin
        # the key = value dictionary (kvstore) that is written out
        #
        # Example 1. Read an attribute from the database and set
        # the values
        value = self.db.getHostAttr(host, 'Condor_HostAllow')
        kvstore['CONDOR_SAMPLE'] = value

        # Example 2. Set the key CONDOR_SAMPLE to the hostname
        kvstore['CONDOR_SAMPLE'] = host

        # Example 3. Remove a key from the dictionary
        if 'CONDOR_SAMPLE' in kvstore:
            del kvstore['CONDOR_SAMPLE']

RollName = "condor"
```

Users/Roll Developers can add their own plugins for the "report host condor config" command to overwrite, add, and/or delete key,value pairs that are written into /etc/condor/config.d/01\_rocks\_condor\_config.local.

In the above code sample, the Condor report command driver passes the hostname and the dictionary of already defined key,value pairs (kvstore in the sample code). The sample code shows several different examples of changing the key 'CONDOR\_SAMPLE'.

Plugins are written in Python, are called in random order, and must be named "plugin\_<name>.py".

Plugins also enable any desired configurations to be properly applied with the command `rocks sync host osg condor config`.

## Notes

1. [https://twiki.grid.iu.edu/bin/view/Documentation/Release3/InstallComputeElement#7\\_Configuration\\_Instructions](https://twiki.grid.iu.edu/bin/view/Documentation/Release3/InstallComputeElement#7_Configuration_Instructions)
2. [https://twiki.grid.iu.edu/bin/view/Documentation/Release3/InstallOSGBestmanSE#4\\_1\\_Installing\\_BeStMan2](https://twiki.grid.iu.edu/bin/view/Documentation/Release3/InstallOSGBestmanSE#4_1_Installing_BeStMan2)
3. [https://twiki.grid.iu.edu/bin/view/Documentation/Release3/InstallXrootd#Modify\\_etc\\_xrootd\\_xrootd\\_cluster](https://twiki.grid.iu.edu/bin/view/Documentation/Release3/InstallXrootd#Modify_etc_xrootd_xrootd_cluster)
4. <http://www.cs.wisc.edu/condor/manual>
5. condor-Manual

# Chapter 5. Using the osg Roll

## 5.1. Example install CE server Automatic (condor)

ce-condor can be installed as follow.

```
$ su - root
#
###set public interface
#
#rocks set host interface ip ce-0-0 iface=eth1 ip=1.2.3.5
#rocks set host interface name ce-0-0 iface=eth1 name=rocks-ce
#rocks set host interface subnet ce-0-0 eth1 public
#rocks set host attr ce-0-0 primary_net public
#rocks add host route ce-0-0 0.0.0.0 1.2.3.1 netmask=0.0.0.0
#rocks add host attr ce-0-0 OSG_CE value="condor"
#rocks add host attr ce-0-0 OSG_Condor_Daemons value="MASTER, SCHEDD"
#
## Automatic throughout attributes (survive reinstalls)
## Example
## Attrs used to fill gip (only need to set one time)
#rocks add host attr ce-0-0 OSG_CE_gip_multicluster value=2
#rocks add host attr ce-0-0 OSG_CE_gip_SubCluster1 value="MyClusterID"
#rocks add host attr ce-0-0 OSG_CE_gip_ClusterName1 value="MyClusterName"
#rocks add host attr ce-0-0 OSG_CE_gip_SubCluster2 value="MyClusterID2"
#rocks add host attr ce-0-0 OSG_CE_gip_ClusterName2 value="MyClusterName2"
## Attrs used to fill siteinfo
#rocks add host attr ce-0-0 OSG_CE_siteinfo_sponsor value="uscms"
#rocks add host attr ce-0-0 OSG_CE_siteinfo_contact value="Your Admin Name"
#rocks add host attr ce-0-0 OSG_CE_siteinfo_email value="your_admin@mail.edu"
#rocks add host attr ce-0-0 OSG_CE_siteinfo_OIM_name value="your resource OIM registered"
#rocks add host attr ce-0-0 OSG_CE_siteinfo_OIM_group value="your resource group OIM registered"
#
##Set hostcert/hostkey
#rocks add host sec_attr ce-0-0 attr=hostcert value="/path/to/cert/hostcert.pem" crypted=true
#rocks add host sec_attr ce-0-0 attr=hostkey value="/path/to/certkey/hostkey.pem" crypted=true
#rocks add host sec_attr ce-0-0 attr=httpcert value="/path/to/cert/httpcert.pem" crypted=true
#rocks add host sec_attr ce-0-0 attr=httpkey value="/path/to/certkey/httpkey.pem" crypted=true
```

Choose either reinstall or live install + config

```
#
# reinstall
#
#shoot-node ce-0-0
#
# config after reinstall
# start htcondor before running CE configurator (osg-configure needs condor running)
#rocks run host ce-0-0 command='service condor start'
#
# fetch crls (osg-configure needs crls)
#rocks run host ce-0-0 command='fetch-crl'
# run osg-configure
# (or 'rocks sync host osg CE ce-0-0' if more attr were added after install)
#rocks run host ce-0-0 command='osg-configure -c'
```

```
#
```

live install + config option below.

```
#
# install + config using rocks commands
#
#rocks sync host osg CE install ce-0-0
#
# just in case a last minute or forgotten attr was set
#         then need to sync before continue.
#         rocks sync host attr ce-0-0
#
# install certs by sync sec_attrs
#rocks sync host sec_attr ce-0-0
#
# fix ownership for /etc/grid-security/http
#rocks run host ce-0-0 command='chown -R tomcat:tomcat /etc/grid-security/http'
#
# start htcondor before running CE configurator (osg-configure needs condor running)
#rocks run host ce-0-0 command='service condor start'
#
# fetch crls (osg-configure needs crls)
#rocks run host ce-0-0 command='fetch-crl'
# use attrs to rewrite ini files and run osg-configure
# (see file /root/CE_ini_filesConfigurator in your CE)
#rocks sync host osg CE ce-0-0
#
```

Post install (this can be put in a xml file)

```
#
# post install
#
# start gatekeeper
#rocks run host ce-0-0 command='service globus-gatekeeper start'
# start fetch-crl cron
#rocks run host ce-0-0 command='service fetch-crl-cron start'
#
# set services to run on reboot
#rocks run host ce-0-0 command='chkconfig condor on'
#rocks run host ce-0-0 command='chkconfig globus-gatekeeper on'
#rocks run host ce-0-0 command='chkconfig fetch-crl-cron on'
#rocks run host ce-0-0 command='chkconfig fetch-crl-boot on'
```

## 5.2. Example install CE server Semi-automatic (condor)

ce-condor can be installed as follow. This include manual steps.

```
$ su - root
#
###set public interface
#
#rocks set host interface ip ce-0-0 iface=eth1 ip=1.2.3.5
```

```

#rocks set host interface name ce-0-0 iface=eth1 name=rocks-ce
#rocks set host interface subnet ce-0-0 eth1 public
#rocks set host attr ce-0-0 primary_net public
#rocks add host route ce-0-0 0.0.0.0 1.2.3.1 netmask=0.0.0.0
#rocks add host attr ce-0-0 OSG_CE value="condor"
#rocks add host attr ce-0-0 OSG_Condor_Daemons value="MASTER, SCHEDD"
#
#set hostcert/hostkey
#rocks add host sec_attr ce-0-0 attr=hostcert value="/path/to/cert/hostcert.pem" crypted=true
#rocks add host sec_attr ce-0-0 attr=hostkey value="/path/to/certkey/hostkey.pem" crypted=true
#
###sample of customizing/changing attribute
#rocks set host attr ce-0-0 OSG_SRMsupportedProtocolList value="gsiftp://rocks-ce.mypublic.edu:28
#
###place where grid certs are stored
###(needed if running autogenerated script /root/install_cert_ce.sh)
###this example needs hostcert, httpcert
###    /my/nfs/path/for/certs/ce-0-0/httpcert.pem
###    /my/nfs/path/for/certs/ce-0-0/httpkey.pem
#rocks set host attr ce-0-0 OSG_StoredCertsDir value="/my/nfs/path/for/certs"

#
# reinstall
#
#shoot-node ce-0-0

#
# post install
#
#rocks run host ce-0-0 command='/root/install_cert_ce.sh'
##Manual config
#edit for your site /etc/osg/config.d/30-gip.ini
#edit for your site /etc/osg/config.d/40-siteinfo.ini
#rocks run host ce-0-0 command='service condor start'
#rocks run host ce-0-0 command='configure-osg -v'
#rocks run host ce-0-0 command='configure-osg -c'

#rocks run host ce-0-0 command='chkconfig condor on'
#rocks run host ce-0-0 command='chkconfig globus-gatekeeper on'
#rocks run host ce-0-0 command='chkconfig fetch-crl-cron on'
#rocks run host ce-0-0 command='chkconfig fetch-crl-boot on'

#services for ce-condor
#rocks run host ce-0-0 command='service globus-gatekeeper start'

```

### 5.3. Example Install CE server (condor) + gridftp + rsv

ce-condor + gridftp + rsv can be installed as follow. (rsv is configured like in OSG 1.2)

```

$ su - root
#
###set public interface
#
#rocks set host interface ip ce-0-0 iface=eth1 ip=1.2.3.5
#rocks set host interface name ce-0-0 iface=eth1 name=rocks-ce

```

```

#rocks set host interface subnet ce-0-0 eth1 public
#rocks set host attr ce-0-0 primary_net public
#rocks add host route ce-0-0 0.0.0.0 1.2.3.1 netmask=0.0.0.0
#rocks add host attr ce-0-0 OSG_CE value="condor"
#rocks add host attr ce-0-0 OSG_GRIDFTP value=true
#rocks add host attr ce-0-0 OSG_RSV value=true
#rocks add host attr ce-0-0 OSG_Condor_Daemons value="MASTER, SCHEDD"
#
###sample of customizing/changing attribute
#rocks set host attr ce-0-0 OSG_SRMsupportedProtocolList value="gsiftp://rocks-ce.mypublic.edu:28
###place where grid certs are stored
###this example needs hostcert, httpcert, rsvcert
###      /my/nfs/path/for/certs/ce-0-0/rsvcert.pem
###      /my/nfs/path/for/certs/ce-0-0/rsvkey.pem
###      /my/nfs/path/for/certs/ce-0-0/httpcert.pem
###      /my/nfs/path/for/certs/ce-0-0/httpkey.pem
#rocks set host attr ce-0-0 OSG_StoredCertsDir value="/my/nfs/path/for/certs"
###setting service certs
#rocks 5.5
# rocks add host sec_attr ce-0-0 attr=hostcert value="'cat /path/to/cert/hostcert.pem'" crypted=
# rocks add host sec_attr ce-0-0 attr=hostkey value="'cat /path/to/certkey/hostkey.pem'" crypted=
#rocks 6.1.1
# rocks add host sec_attr ce-0-0 attr=hostcert value="/path/to/cert/hostcert.pem" crypted=true
# rocks add host sec_attr ce-0-0 attr=hostkey value="/path/to/certkey/hostkey.pem" crypted=true

#
# reinstall
#
#shoot-node ce-0-0

#
# post install
#
#rocks5.5#rocks sync host sec_attr ce-0-0
#rocks run host ce-0-0 command='/root/install_rsv_cert.sh'
#edit for your site /etc/osg/config.d/30-gip.ini
#edit for your site /etc/osg/config.d/40-siteinfo.ini
#rocks run host ce-0-0 command='fetch-crl'
#rocks run host ce-0-0 command='service condor start'
#rocks run host ce-0-0 command='configure-osg -v'
#rocks run host ce-0-0 command='configure-osg -c'

#services for gatekeeper
#rocks run host ce-0-0 command='service globus-gatekeeper start'
#services for gridftp
#rocks run host ce-0-0 command='service globus-gridftp-server start'
#services for rsv
#rocks run host ce-0-0 command='service condor-cron start'
#rocks run host ce-0-0 command='service rsv start'
#rocks run host ce-0-0 command='service http start'

#rocks run host ce-0-0 command='chkconfig condor on'
#rocks run host ce-0-0 command='chkconfig globus-gatekeeper on'
#rocks run host ce-0-0 command='chkconfig fetch-crl-cron on'
#rocks run host ce-0-0 command='chkconfig fetch-crl-boot on'
#rocks run host ce-0-0 command='chkconfig globus-gridftp-server on'
#rocks run host ce-0-0 command='chkconfig condor-cron on'

```

```
#rocks run host ce-0-0 command='chkconfig rsv on'
```

## 5.4. Example Install bestman server + gridftp hadoop

Bestman can be installed as follow.

```
$ su - root
#
###set public interface
#
#rocks set host interface ip se-0-0 iface=eth1 ip=1.2.3.4
#rocks set host interface name se-0-0 iface=eth1 name=rocks-se
#rocks set host interface subnet se-0-0 eth1 public
#rocks set host attr se-0-0 primary_net public
#rocks add host route se-0-0 0.0.0.0 1.2.3.1 netmask=0.0.0.0
#rocks add host attr se-0-0 OSG_SE value=true
#rocks add host attr se-0-0 OSG_GFTP_HDFS value=true
###sample of customizing/changing attribute
#rocks set host attr se-0-0 OSG_SRMsupportedProtocolList value="gsiftp://rocks-se.mypublic.edu:28
###setting service certs
###rocks 5.5
# rocks add host sec_attr se-0-0 attr=hostcert value="'cat /path/to/cert/hostcert.pem'" crypte
# rocks add host sec_attr se-0-0 attr=hostkey value="'cat /path/to/certkey/hostkey.pem'" crypte
###rocks 5.6
# rocks add host sec_attr se-0-0 attr=hostcert value="/path/to/cert/hostcert.pem" crypte=true
# rocks add host sec_attr se-0-0 attr=hostkey value="/path/to/certkey/hostkey.pem" crypte=true

#
### reinstall
#
#shoot-node se-0-0

#
### post install
#
#cp hostcert.pem and hostkey.pem to /root/.
#rocks sync host sec_attr se-0-0
#rocks run host se-0-0 command='/root/install_se_cert.sh'
#rocks run host se-0-0 command='chkconfig bestman2 on'
#rocks run host se-0-0 command='chkconfig globus-gridftp-server on'
```

## 5.5. Example Install xrootd server

xrootd can be installed as follow.

```
$ su - root
#
###set public interface
#
#rocks set host interface ip xrootd-0-0 iface=eth1 ip=1.2.3.4
#rocks set host interface name xrootd-0-0 iface=eth1 name=rocks-xrootd
#rocks set host interface subnet xrootd-0-0 eth1 public
```

```

#rocks set host attr xrootd-0-0 primary_net public
#rocks add host route xrootd-0-0 0.0.0.0 1.2.3.1 netmask=0.0.0.0
#rocks add host attr xrootd-0-0 OSG_XRD value=true
#
###site especific/changing default if needed (check defaults first)
#
# rocks set host attr xrootd-0-0 OSG_CMS_LOCAL_SITE value=T3_US_MySite
# rocks set host attr xrootd-0-0 OSG_GumsServer value="my.gums.server"
# rocks set host attr xrootd-0-0 OSG_XRDServer value="rocks-xrootd.server"
# rocks set host attr xrootd-0-0 OSG_XROOTD_LOCAL_REDIRECTOR value="my.redir.pool.server+"
#
###setting user cert path (needed to download CMS_LOCAL_SITE/PhEDEx/storage.xml )
#
# rocks add host attr xrootd-0-0 OSG_CMS_USERCERT value=/path/to/my/cert/usercert.pem
# rocks add host attr xrootd-0-0 OSG_CMS_USERKEY value=/path/to/my/cert/userkey.pem
#
###setting service certs
#
# rocks add host sec_attr xrootd-0-0 attr=hostcert value="/path/to/cert/hostcert.pem" crypted=tr
# rocks add host sec_attr xrootd-0-0 attr=hostkey value="/path/to/certkey/hostkey.pem" crypted=t

#
### reinstall
#
#shoot-node xrootd-0-0

#
### post install
#
#check /root/cert-install.log
#rocks run host xrootd-0-0 command='chkconfig xrootd on'
#rocks run host xrootd-0-0 command='chkconfig cmsd on'
#rocks run host xrootd-0-0 command='service xrootd start'
#rocks run host xrootd-0-0 command='service cmsd start'

```

## 5.6. Example Install gums server

gums can be installed as follow.

```

$ su - root
#
###set public interface
#
#rocks set host interface ip gums-0-0 iface=eth1 ip=1.2.3.6
#rocks set host interface name gums-0-0 iface=eth1 name=rocks-gums
#rocks set host interface subnet gums-0-0 eth1 public
#rocks set host attr gums-0-0 primary_net public
#rocks add host route gums-0-0 0.0.0.0 1.2.3.1 netmask=0.0.0.0
#rocks add host attr gums-0-0 OSG_GUMS value=true
#
#
###sample of customizing/changing attribute
#rocks set host attr gums-0-0 OSG_GUMSBackupDir value=/home/myusers/mygumsbackups
#rocks set host attr gums-0-0 OSG_GUMSDNADMIN value="DN my grid"
###setting service certs (option 1 is preferred )

```

```

#option 1
# rocks add host sec_attr gums-0-0 attr=hostcert value="/path/to/cert/hostcert.pem" crypted=true
# rocks add host sec_attr gums-0-0 attr=hostkey value="/path/to/certkey/hostkey.pem" crypted=true
# rocks add host sec_attr gums-0-0 attr=httpcert value="/path/to/cert/httpcert.pem" crypted=true
# rocks add host sec_attr gums-0-0 attr=httpkey value="/path/to/certkey/httpkey.pem" crypted=true
#option 2
#rocks set host attr gums-0-0 OSG_StoredCertsDir value="/my/nfs/path/for/certs"

#
# reinstall
#
#shoot-node gums-0-0

#
# post install
#
#for services gums
#https://twiki.grid.iu.edu/bin/view/Documentation/Release3/InstallGums
#
#if upgrading from pacman in OSG_GUMSBackupDir
#     use backup names gum.config_pacman and gums_1_3.sql_pacman
# rocks run host gums-0-0 command='/root/ConfigureGumsUpgradeFromPacman.sh'
#
#if upgrading from rpm in OSG_GUMSBackupDir
#     use backup names gum.config_rpm and gums_1_3.sql_rpm
# rocks run host gums-0-0 command='/root/ConfigureGumsUpgradeFromRPM.sh'
#
#if fresh install (edit to set gums password)
# rocks run host gums-0-0 command='/root/ConfigureGumsFreshInstall.sh'
#
#rocks run host gums-0-0 command='fetch-crl'
#rocks run host gums-0-0 command='service fetch-crl-boot start'
#rocks run host gums-0-0 command='service fetch-crl-cron start'
#rocks run host gums-0-0 command='service tomcat6 start'
#rocks run host gums-0-0 command='chkconfig fetch-crl-cron on'
#rocks run host gums-0-0 command='chkconfig fetch-crl-boot on'
#rocks run host gums-0-0 command='chkconfig tomcat6 on'
#rocks run host gums-0-0 command='chkconfig mysqld on'

```

## 5.7. Example Install gums server + squid + cvmfs

gums + squid + cvmfs can be installed as follow.

```

$ su - root
#
###set public interface
#
#rocks set host interface ip gums-0-0 iface=eth1 ip=1.2.3.6
#rocks set host interface name gums-0-0 iface=eth1 name=rocks-gums
#rocks set host interface subnet gums-0-0 eth1 public
#rocks set host attr gums-0-0 primary_net public
#rocks add host route gums-0-0 0.0.0.0 1.2.3.1 netmask=0.0.0.0
#rocks add host attr gums-0-0 OSG_GUMS value=true
#rocks add host attr gums-0-0 OSG_SQUID value=true
#rocks add host attr gums-0-0 OSG_CVMFS value=true

```

```

#
#
###sample of customizing/changing attribute
#rocks set host attr gums-0-0 OSG_GUMSBackupDir value=/home/myusers/mygumsbackups
#rocks set host attr gums-0-0 OSG_SquidCacheDir value=/scratch/squid
#rocks set host attr gums-0-0 OSG_SquidCacheDirSize value=30000
#rocks set host attr gums-0-0 OSG_CMS_LOCAL_SITE value=T3_US_MySite
#rocks set host attr gums-0-0 OSG_CVMFS_CACHE_BASE value=/scratch/cvmfs
#rocks set host attr gums-0-0 OSG_CVMFS_HTTP_PROXY value="http://mysquid-0-0:3128"
###setting service certs
###preferred method
# rocks add host sec_attr gums-0-0 attr=hostcert value="/path/to/cert/hostcert.pem" crypted=true
# rocks add host sec_attr gums-0-0 attr=hostkey value="/path/to/certkey/hostkey.pem" crypted=true
# rocks add host sec_attr gums-0-0 attr=hostcert value="/path/to/cert/httpcert.pem" crypted=true
# rocks add host sec_attr gums-0-0 attr=hostkey value="/path/to/certkey/httpkey.pem" crypted=true
###alternative
# rocks set host attr gums-0-0 OSG_StoredCertsDir value="/my/nfs/path/for/certs"

#
# reinstall
#
#shoot-node gums-0-0

#
# post install
#
#for services gums
#https://twiki.grid.iu.edu/bin/view/Documentation/Release3/InstallGums
#rocks run host gums-0-0 command='/root/ConfigureGumsUpgradeFromRPM.sh'
#rocks run host gums-0-0 command='fetch-crl'
#rocks run host gums-0-0 command='service fetch-crl-boot start'
#rocks run host gums-0-0 command='service fetch-crl-cron start'
#rocks run host gums-0-0 command='service tomcat6 start'
#rocks run host gums-0-0 command='chkconfig fetch-crl-cron on'
#rocks run host gums-0-0 command='chkconfig fetch-crl-boot on'
#rocks run host gums-0-0 command='chkconfig tomcat6 on'
#rocks run host gums-0-0 command='chkconfig mysqld on'
#
#services frontier squid
#https://twiki.grid.iu.edu/bin/view/Documentation/Release3/InstallFrontierSquid
#rocks sync host osg squid gums-0-0
#rocks run host gums-0-0 command='service frontier-squid start'
#rocks run host gums-0-0 command='chkconfig frontier-squid on'
#
#services cvmfs
#https://twiki.grid.iu.edu/bin/view/Documentation/Release3/InstallCvmfs
#rocks 5.5/6.0 (maybe 5.6/6.1)#rocks run host gums-0-0 command='usermod -G fuse cvmfs'
#rocks run host gums-0-0 command='service autofs restart'

```

## 5.8. Example for installing cvmfs on wn nodes after OS install

Cvmfs can be installed as follow.

```
$ su - root
#
###sample of customizing/changing attribute
#
#rocks add appliance attr compute OSG_CVMFS value=true
#rocks set appliance attr compute OSG_CVMFS_QUOTA_LIMIT value=30000
#rocks set appliance attr compute OSG_CMS_LOCAL_SITE value=T3_US_MySite
#rocks set appliance attr compute OSG_CVMFS_CACHE_BASE value=/scratch/cvmfs
#rocks set appliance attr compute OSG_CVMFS_HTTP_PROXY value="http://mysquid-0-0:3128"
#
###install cvmfs on nodes
#rocks sync host osg cvmfs install compute
#rocks run host compute command="service autofs restart"
#
```

## 5.9. Example for setting hostproxy on wn nodes

Hostproxy requires access the whole cluster, you need to set a pair key or just reuse the frontend node. Also the certs used to proxy by default are located in /etc/grid-security (hostcert.pem,hostkey.pem).

```
#
#in frontend cp pair keys to ce-0-0
#
$ su - root
#scp -p .ssh/id_rsa ce-0-0:~/.ssh/.
#scp -p .ssh/id_rsa.pub ce-0-0:~/.ssh/.
#ssh ce-0-0

#
# in ce-0-0
#
#yum install hostproxy
#cd /opt/hostproxy

#
# set list of worker nodes
#
#rocks report host attr attr=OSG_Client | grep true | sed s/:\\ true/.local/g >> host_dist.nodes

#
# set cron to renew proxys
#
#cp update-hostproxy.cron /etc/cron.d/.

#
# or run manually
#
#/opt/hostproxy/host_dist
```

## 5.10. How to Update OSG packages

OSG can be updated creating a local mirror as follow.

```
$ su - root
#cd /export/rocks/install
#rocks create mirror http://repo.grid.iu.edu/3.0/el5/osg-release/x86_64 rollname=osg-updates vers
##this creates an iso file osg-updates-5.5.1-0.x86_64.disk1.iso

#rocks remove roll osg-updates
#rocks add roll osg-updates-5.5.1-0.x86_64.disk1.iso
#rocks enable roll osg-updates
#rocks create distro

#in SE for example
yum update bestman-server
```

## 5.11. Using a pool password to secure Condor Communications

The default Rocks configuration is to use host-based authentication. This is a good and simple choice for a cluster with a private network. With the Rocks 5.4 version of the Condor Roll, it is straightforward to set up a "Pool Password" that utilizes a shared secret among pool members. This is especially useful when allowing remote systems to report directly to the Condor collector on your cluster. The EC2 Roll can utilize a pool password for a higher security.

The following, straightforward will create, copy and enable a system-wide shared-secret pool password.

1. Create a pool password. Use `rocks create osg condor password`
2. Enable pool password security. Use `rocks set attr OSG_Condor_Password yes`
3. Reconfigure Condor Daemons and copy new pool password. Use `rocks sync host osg condor syncpassword=yes localhost compute`

# Chapter 6. Command Reference

## 6.1. create

### 6.1.1. create osg condor password

**rocks create osg condor password** [add=*bool*] [keyfile=*string*]

Create a pool password for Condor. Requires Condor Credd to be up and running.

#### parameters

[add=*bool*]

add the newly created key to the condor credential daemon. Default: yes

[keyfile=*string*]

The filename that will be used to store the password. Default: /var/lib/condor/pool\_password

### 6.1.2. create osg download

**rocks create osg download** {path} [arch=*string*] [version=*string*]

Download the OSG packages found in the repository located at 'URL'.

#### arguments

path

The network location of the repository of packages.

#### parameters

[arch=*string*]

Architecture of the mirror to download. (default = the architecture of the OS running on this machine).

[version=*string*]

The OS version number to download. (default = the version of Rocks running on this machine).

#### examples

```
# rocks create osg download http://repo.grid.iu.edu/osg/3.1/el6/release/x86_64 version=6.5 arch=x86_64
```

Will mirror(download) all the packages found under the URL

http://repo.grid.iu.edu/osg/3.1/el6/release/x86\_64 and will create a tree of dirs 6/x86\_64 6/noarch 6/debug with latest version of osg packages ready to create osg roll.

## 6.2. report

### 6.2.1. report host osg CE config

**rocks report host osg CE config** {host} [ConfigCondor=*string*] [ConfigFile=*string*] [ConfigGip=*string*] [ConfigManagedFork=*string*] [ConfigMisc=*string*] [ConfigNetwork=*string*] [ConfigSGE=*string*] [ConfigSiteInfo=*string*] [ConfigSquid=*string*] [ConfigStorage=*string*] [test=*bool*]

Output the OSG CE Local Configuration Script Uses Rocks Attributes: OSG\_CE, OSG\_CEServer, OSG\_SEServer, OSG\_SquidServer, OSG\_GumsServer, OSG\_GlobusTcpSourceRange, OSG\_GlobusTcpPortRange, OSG\_CE\_Mount\_ShareDir, OSG\_CE\_DataDir, OSG\_WN\_TmpDir, OSG\_GFTPServer, Info\_ClusterName, OSG\_CE\_gip\_multicluster, OSG\_CE\_gip\_NmultiSE, OSG\_CE\_gip\_SubCluster1, OSG\_CE\_gip\_ClusterName1, OSG\_CE\_gip\_NumberOfNodes1, OSG\_CE\_gip\_mb\_of\_Ram1, OSG\_CE\_gip\_cpu\_speed1, OSG\_CE\_gip\_arch1, OSG\_CE\_gip\_CpusPerNode1, OSG\_CE\_gip\_CoresPerNode1, OSG\_CE\_gip\_inbound1, OSG\_CE\_gip\_outbound1, OSG\_CE\_gip\_SE1, OSG\_CE\_gip\_SE\_OIM\_Name1, OSG\_CE\_gip\_SEServer1, OSG\_CE\_gip\_SEprovider1, OSG\_CE\_gip\_SEimplementation1, OSG\_CE\_gip\_SEversion1, OSG\_CE\_gip\_SEpath1, OSG\_CE\_gip\_OSG\_CE\_siteinfo\_group, OSG\_CE\_siteinfo\_OIM\_name, OSG\_CE\_siteinfo\_OIM\_group, OSG\_CE\_siteinfo\_sponsor, OSG\_CE\_siteinfo\_policy, OSG\_CE\_siteinfo\_contact, OSG\_CE\_siteinfo\_email, OSG\_CE\_siteinfo\_city, OSG\_CE\_siteinfo\_country, OSG\_CE\_siteinfo\_longitude, OSG\_CE\_siteinfo\_latitude, Info\_ClusterLatlong

#### arguments

host

One host name.

#### parameters

[ConfigCondor=*string*]

Defaults to: /etc/osg/config.d/20-condor.ini

[ConfigFile=*string*]

Defaults to: /root/CE\_ini\_filesConfigurator

[ConfigGip=*string*]

Defaults to: /etc/osg/config.d/30-gip.ini

[ConfigManagedFork=*string*]

Defaults to: /etc/osg/config.d/15-managedfork.ini

[ConfigMisc=*string*]

Defaults to: /etc/osg/config.d/10-misc.ini

[ConfigNetwork=*string*]

Defaults to: /etc/osg/config.d/40-network.ini

[ConfigSGE=*string*]

Defaults to: /etc/osg/config.d/20-sge.ini

[ConfigSiteInfo=*string*]

Defaults to: /etc/osg/config.d/40-siteinfo.ini

[ConfigSquid=*string*]

Defaults to: /etc/osg/config.d/01-squid.ini

[ConfigStorage=*string*]

Defaults to: /etc/osg/config.d/10-storage.ini

[test=*bool*]

If want to test output set this parameter. Default is no.

## examples

```
$ rocks report host osg CE config ce-0-0 ConfigGip="/etc/osg/config.d/30-gip.ini.test"
```

Set the OSG Gip Configuration File for ce-0-0 as /etc/osg/config.d/30-gip.ini.test

## 6.2.2. report host osg CE install

```
rocks report host osg CE install {host}
```

Output the OSG CE wrapper install script

## arguments

host

One host name.

## examples

```
$ rocks report host osg CE install ce-0-0
```

Create wrapper script to install OSG CE for ce-0-0

## 6.2.3. report host osg bestman config

```
rocks report host osg bestman config
```

```
{host} [ConfigFile=string] [ConfigRCFile=string] [ConfigSysconfig=string] [test=bool]
```

Output the OSG Bestman Local Configuration Script Uses Rocks Attributes: OSG\_SE, OSG\_GumsServer, OSG\_SRMlocalPathListAllowed, OSG\_SRMsupportedProtocolList, OSG\_SRMuseplugging, OSG\_GlobusTcpSourceRange, OSG\_GlobusTcpPortRange

**arguments**

host

One host name.

**parameters**

[ConfigFile=*string*]

Defaults to: /root/BestmanConfigurator

[ConfigRCFile=*string*]

Defaults to: /etc/bestman2/conf/bestman2.rc

[ConfigSysconfig=*string*]

Defaults to: /etc/sysconfig/bestman2

[test=*bool*]

If want to test output set this parameter. Default is no.

**examples**

```
$ rocks report host osg bestman config se-0-0 ConfigRCFile="/etc/bestman2/conf/bestman2.rc.test"
```

Set the OSG RC Configuration File for se-0-0 as /etc/bestman2/conf/bestman2.rc.test

**6.2.4. report host osg bestman install**

```
rocks report host osg bestman install {host}
```

Output the OSG bestman wrapper install script

**arguments**

host

One host name.

**examples**

```
$ rocks report host osg bestman install se-0-0
```

Create wrapper script to install OSG SE (bestman) for se-0-0

**6.2.5. report host osg condor config**

```
rocks report host osg condor config {host} [ConfigFile=string] [UIDdomain=string] [type=string]
```

Output the OSG Condor Local Configuration Uses Rocks Attributes: OSG\_Condor\_Master, OSG\_Condor\_MasterNetwork, OSG\_Condor\_ClientNetwork, Kickstart\_PrivateDNSDomain

**arguments**

host

One host name.

**parameters**

[ConfigFile=*string*]

Defaults to: /etc/condor/config.d/01\_rocks\_condor\_config.local

[UIDdomain=*string*]

Override UIDdomain of the Rocks Kickstart\_PrivateDNSDomain attribute

[type=*string*]

How this node will function - [Manager, Worker] - Default: Worker

**examples**

```
$ rocks report host osg condor config compute-0-0 type=Worker
```

Create the OSG Condor Configuration for compute-0-0 as a Worker Node

**6.2.6. report host osg condor interface**

**rocks report host osg condor interface** {host} {subnet}

Output the host IP address associated with a named subnet on a particular host.

**arguments**

host

One host name.

subnet

subnet to match

**examples**

```
$ rocks report host osg condor interface compute-0-0 private
```

Output the the IP Address of the private interface on compute-0-0. Suitable for using in OSG Condor Configuration Files

```
$ rocks report host osg condor interface vm-container-0-0 private
```

Output the the IP Address of the private interface on vm-container-0-0. If multiple interfaces are attached to the private interface (e.g. VLAN bridges) pick the interface with a configured address in the named subnet.

## 6.2.7. report host osg cvmfs config

### rocks report host osg cvmfs config

{host} [CMSConfigFile=*string*] [CVMFSServerConfigFile=*string*] [ConfigFile=*string*]

Output the OSG cvmfs Configuration Uses Rocks Attributes: OSG\_CVMFS\_REPOSITORIES, OSG\_CVMFS\_CACHE\_BASE, OSG\_CVMFS\_QUOTA\_LIMIT, OSG\_CVMFS\_HTTP\_PROXY, OSG\_CMS\_LOCAL\_SITE, OSG\_CVMFS\_SERVER\_URL, OSG\_CVMFS\_NFS\_SOURCE, OSG\_CVMFS\_MEMCACHE\_SIZE

### arguments

host

One host name.

### parameters

[CMSConfigFile=*string*]

Defaults to: /etc/cvmfs/config.d/cms.cern.ch.local

[CVMFSServerConfigFile=*string*]

Defaults to: /etc/cvmfs/domain.d/cern.ch.local

[ConfigFile=*string*]

Defaults to: /etc/cvmfs/default.local

### examples

```
$ rocks report host osg cvmfs config compute-0-0
```

Create/Modify the OSG cvmfs Configuration for compute-0-0

```
$ rocks report host osg cvmfs config compute-0-0 ConfigFile=/etc/cvmfs/test.local
```

Create the OSG cvmfs Configuration for compute-0-0 on files /etc/cvmfs/test.local, /etc/cvmfs/config.d/cms.cern.ch.local and /etc/cvmfs/domain.d/cern.ch.local

```
$ rocks report host osg cvmfs config compute-0-0 ConfigFile=/etc/cvmfs/test.local
```

```
CVMFSServerConfigFile=/etc/cvmfs/CvmfsServerTest.local
```

Create the OSG cvmfs Configuration for compute-0-0 on files /etc/cvmfs/test.local, /etc/cvmfs/config.d/cms.cern.ch.local and /etc/cvmfs/CvmfsServerTest.local

## 6.2.8. report host osg cvmfs install

**rocks report host osg cvmfs install** {host}

Output the OSG cvmfs wrapper install script

**arguments**

host

One host name.

**examples**

```
$ rocks report host osg cvmfs install compute-0-0
```

Create wrapper script to install OSG cvmfs for compute-0-0

**6.2.9. report host osg hadoop config**

```
rocks report host osg hadoop config {host} [ConfigFile=string]
```

Output the OSG Hadoop Local Configuration Uses Rocks Attributes: OSG\_HadoopNameNode, OSG\_HadoopDataDir, OSG\_HadoopData, OSG\_HadoopSecondaryNode, OSG\_HadoopCheckPointDirs, OSG\_HadoopCheckPointPeriod, OSG\_HadoopReplicationDefault, OSG\_HadoopUpdateFstab, ganglia\_address, Kickstart\_PrivateDNSDomain

**arguments**

host

One host name.

**parameters**

```
[ConfigFile=string]
```

Defaults to: /etc/sysconfig/hadoop

**examples**

```
$ rocks report host osg hadoop config compute-0-0
```

Create the OSG Hadoop Configuration for compute-0-0

```
$ rocks report host osg hadoop config compute-0-0 ConfigFile=/etc/sysconfig/hadooptest
```

Create the OSG Hadoop Configuration for compute-0-0 on file /etc/sysconfig/hadooptest

**6.2.10. report host osg installation**

```
rocks report host osg installation [host...]
```

Report the current boot installation for hosts. For each host supplied on the command line, this command prints the hostname, boot action and installation for that host. The boot action describes what the host will do the next time it is booted. The installation describes which installation will be used.

**arguments**

[host]

Zero, one or more host names. If no host names are supplied, info about all the known hosts is listed.

**examples**

```
$ rocks report host osg installation compute-0-0
```

List the current boot action and installation for compute-0-0.

```
$ rocks report host osg installation
```

List the current boot action and installation for all known hosts.

**6.2.11. report host osg squid config**

```
rocks report host osg squid config {host} [ConfigFile=string]
```

Output the OSG frontier squid Local Configuration Uses Rocks Attributes: Kickstart\_PublicNetmaskCIDR, Kickstart\_PublicNetwork, Kickstart\_PrivateNetmaskCIDR, Kickstart\_PrivateNetwork, OSG\_SquidCacheMem, OSG\_SquidCacheDir, OSG\_SquidCacheDirSize

**arguments**

host

One host name.

**parameters**[ConfigFile=*string*]

Defaults to: /etc/squid/customize.sh

**examples**

```
$ rocks report host osg squid config squid-0-0
```

Create/Modify the OSG frontier squid Configuration for squid-0-0

```
$ rocks report host osg squid config squid-0-0 ConfigFile=/etc/squid/test.sh
```

Create the OSG frontier squid Configuration for squid-0-0 on file /etc/squid/test.sh

**6.2.12. report host osg xrootd config**

```
rocks report host osg xrootd config {host} [ConfigFile=string] [ConfigXrootd=string] [test=bool]
```

Output the OSG xrootd Local Configuration Script Uses Rocks Attributes: OSG\_XRD, OSG\_XROOTD\_LOCAL\_REDIRECTOR, OSG\_XROOTD\_REGIONAL\_REDIRECTOR, OSG\_CMS\_LOCAL\_SITE

**arguments**

host

One host name.

**parameters**

[ConfigFile=*string*]

Defaults to: /root/XrootdConfigurator

[ConfigXrootd=*string*]

Defaults to: /etc/xrootd/xrootd-clustered.cfg

[test=*bool*]

If want to test output set this parameter. Default is no.

**examples**

```
$ rocks report host osg xrootd config xrootd-0-0 ConfigXrootd="/etc/xrootd/xrootd.cfg.test"
```

Set the OSG xrootd Configuration File for xrootd-0-0 as /etc/xrootd/xrootd.cfg.test

**6.2.13. report host osg xrootd install**

```
rocks report host osg xrootd install {host}
```

Output the OSG xrootd wrapper install script

**arguments**

host

One host name.

**examples**

```
$ rocks report host osg xrootd install xrootd-0-0
```

Create wrapper script to install OSG xrootd for xrootd-0-0

**6.3. sync****6.3.1. sync host osg CE**

```
rocks sync host osg CE [test=bool]
```

Reconfigure OSG CE ini files on the named hosts.

**parameters**

[test=*bool*]

If want to test output set this parameter. Default is no.

**examples**

```
# rocks sync host osg CE ce-0-0
```

Write and run script /root/CE\_ini\_filesConfigurator to rewrite infiles and call osg-configure -c on host ce-0-0

**6.3.2. sync host osg CE install**

**rocks sync host osg CE install** [test=*bool*]

Install OSG CE on the named hosts.

**parameters**

[test=*bool*]

If want to test output set this parameter. Default is no.

**examples**

```
# rocks sync host osg CE install ce-0-0
```

add tomcat user, add tomcat group, add gratia group and install osg-ce-certs, osg-ce-"OSG\_CE", globus-gram-job-manager-managedfork on host ce-0-0 if attr OSG\_CE is set in this host.

```
# rocks sync host osg CE install ce-0-0 test=yes
```

Show the bash script that will run to install osg-ce-"OSG\_CE" on host ce-0-0

**6.3.3. sync host osg bestman**

**rocks sync host osg bestman** [test=*bool*]

Reconfigure Bestman server on the named hosts.

**parameters**

[test=*bool*]

If want to test output set this parameter. Default is no.

**examples**

```
# rocks sync host osg bestman se-0-0
```

Write and run script `/root/BestmanConfigurator` to rewrite `/etc/bestman2/conf/bestman2.rc` and `/etc/sysconfig/bestman2` on host `se-0-0`

**6.3.4. sync host osg bestman install**

```
rocks sync host osg bestman install [test=bool]
```

Install Bestman on the named hosts.

**parameters**

```
[test=bool]
```

If want to test output set this parameter. Default is no.

**examples**

```
# rocks sync host osg bestman install se-0-0
```

add bestman user, add bestman group, add gratia group and install `osg-ce-certs` and `bestman-server` rpms on host `se-0-0` if attr `OSG_SE` is set on host.

```
# rocks sync host osg bestman install se-0-0 test=yes
```

Show the bash script that will run to install `bestman-server` on host `se-0-0`

**6.3.5. sync host osg condor**

```
rocks sync host osg condor [syncpassword=bool] [test=bool]
```

Reconfigure OSG Condor daemon on the named hosts.

**parameters**

```
[syncpassword=bool]
```

If set and the attribute `OSG_Condor_PasswordAuth` is `True`, this will will copy the condor pool password the the host. Default is no.

```
[test=bool]
```

If want to test output set this parameter. Default is no.

**examples**

```
# rocks sync host osg condor compute-0-0
```

Rewrite `/etc/condor/config.d/01_rocks_condor_config.local` and call `condor_reconfigure` on host `compute-0-0`

```
# rocks sync host osg condor compute-0-0 syncpassword=yes
```

Rewrite /etc/condor/config.d/01\_rocks\_condor\_config.local, copy the OSG Condor pool password file if OSG\_Condor\_PasswordAuth host attribute is set, and finally call condor\_reconfigure on host compute-0-0

### 6.3.6. sync host osg cvmfs

```
rocks sync host osg cvmfs [test=bool]
```

Configure/Reconfigure OSG cvmfs on the named hosts.

#### parameters

```
[test=bool]
```

If want to test output set this parameter. Default is no.

#### examples

```
# rocks sync host osg cvmfs compute-0-0
```

Rewrites /etc/cvmfs/default.local, /etc/cvmfs/config.d/cms.cern.ch.local, /etc/cvmfs/domain.d/cern.ch.local, /etc/fuse.conf, on host compute-0-0 if attr OSG\_CVMFS is set in this host.

```
# rocks sync host osg cvmfs compute-0-0 test=yes
```

Show the bash script that will run to rewrite the four config files on host compute-0-0

### 6.3.7. sync host osg cvmfs install

```
rocks sync host osg cvmfs install [test=bool]
```

Install OSG cvmfs on the named hosts.

#### parameters

```
[test=bool]
```

If want to test output set this parameter. Default is no.

#### examples

```
# rocks sync host osg cvmfs install compute-0-0
```

add cvmfs user, add cvmfs group, add fuse group and install cvmfs on host compute-0-0 if attr OSG\_CVMFS is set in this host.

```
# rocks sync host osg cvmfs install compute-0-0 test=yes
```

Show the bash script that will run to install cvmfs on host compute-0-0

### 6.3.8. sync host osg hadoop

**rocks sync host osg hadoop** [test=*bool*]

Reconfigure OSG Hadoop on the named hosts.

#### parameters

[test=*bool*]

If want to test output set this parameter. Default is no.

#### examples

```
# rocks sync host osg hadoop compute-0-0
```

Rewrite /etc/sysconfig/hadoop and call hadoop firstboot on host compute-0-0

```
# rocks sync host osg hadoop test=yes compute-0-0
```

Show the bash script that will run to rewrite /etc/sysconfig/hadoop on host compute-0-0

### 6.3.9. sync host osg squid

**rocks sync host osg squid** [test=*bool*]

Reconfigure OSG Frontier Squid on the named hosts.

#### parameters

[test=*bool*]

If want to test output set this parameter. Default is no.

#### examples

```
# rocks sync host osg squid squid-0-0
```

Rewrites /etc/squid/customize.sh on host squid-0-0 if attr OSG\_SQUID is set in this host.

```
# rocks sync host osg squid squid-0-0 test=yes
```

Show the bash script that will run to rewrite /etc/squid/customize.sh on host squid-0-0

### 6.3.10. sync host osg xrootd

**rocks sync host osg xrootd** [test=*bool*]

Reconfigure xrootd server on the named hosts.

**parameters**`[test=bool]`

If want to test output set this parameter. Default is no.

**examples**

```
# rocks sync host osg xrootd xrootd-0-0
```

Write and run script `/root/XrootdConfigurator` to rewrite `/etc/xrootd/xrootd-clustered.cfg` on host `xrootd-0-0`

**6.3.11. sync host osg xrootd install**

```
rocks sync host osg xrootd install [test=bool]
```

Install xrootd on the named hosts.

**parameters**`[test=bool]`

If want to test output set this parameter. Default is no.

**examples**

```
# rocks sync host osg xrootd install xrootd-0-0
```

add xrootd user, add xrootd group, add gratia group and install `osg-ce-certs` and `cms-xrootd-hdfs` rpms on host `xrootd-0-0` if attr `OSG_XRD` is set on host.

```
# rocks sync host osg xrootd install xrootd-0-0 test=yes
```

Show the bash script that will run to install xrootd-server on host `xrootd-0-0`

**6.3.12. sync osg condor**

```
rocks sync osg condor
```

This command is syntactic sugar for `"rocks sync host osg condor localhost"`

**examples**

```
# rocks rocks sync osg condor
```

Rebuild the Condor Configuration

# Chapter 7. Copyrights

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