

Grid Site Installation Tutorial

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Acknowledgements

- Thanks to [SuchandraThapa](#) whose excellent CE Installation notes are the basis for this tutorial.
- Thanks to [SarahWilliams](#) for initial version of this tutorial

Requirements

- A RedHat-linux based server like RHEL, CentOS, and Scientific Linux.
- A fully-qualified hostname for the server
- A valid host certificate
- SSH access and root access
- These ports open through the firewall: 2119, 2811, 8443

Caveats

- Skipping full authorization setup (see documentation for changes needed to do this)
- Assumes condor will be used and installed in osg ce directory

Preparing the server

- Create the /etc/grid-security directory to hold the server certificates

```
$ cd /etc
$ mkdir grid-security
$ chmod 755 grid-security
```

- Copy hostcert.pem & hostkey.pem to /etc/grid-security/

```
$ scp host*.pem root@installhost:/etc/grid-security/
```

- Check that the hostcert is correct. The CN should be the fully qualified domain name of your server, and notAfter should not be expired.

```
$ openssl x509 -in /etc/grid-security/hostcert.pem -noout -subject -enddate
subject= /DC=org/DC=doegrids/OU=Services/CN=uct2-grid6.uchicago.edu
notAfter=Oct 23 17:24:54 2009 GMT
```

- Turn off SELinux
- Check for required library libstdc++.so.5

```
$ ldconfig -p | grep libstdc++.so.5
```

If necessary, install it:

```
$ yum -y install compat-libstdc++-33
```

- Check for required client ldapsearch, and install if necessary

```
$ which ldapsearch
$ yum -y install openldap-clients
```

- Add a user account and install your personal grid certificate

```
$ useradd sarah
$ passwd sarah
$ su - sarah
```

```
$ mkdir .globus
$ chmod 0755 .globus
$ cd .globus
$ scp user*.pem installhost:/home/sarah/.globus/
$ chmod 0644 usercert.pem
$ chmod 0400 userkey.pem
```

- Add a user account for the RSV service

```
$ useradd rsv_user
$ passwd rsv_user
```

Installation

This guide will assume that you install software in the /opt directory and that this directory is located on a local drive (or a networked drive that has fairly high performance and low latency). The installation will require about 4 GB of space. This guide will also install a condor batch manager in your osg installation.

Please adjust this to your specific circumstances.

If you are installing on a server that already has a jobmanager, please read the documentation on [Install job managers](#). If you do not have a jobmanager, Condor will be installed with OSG:Globus-Condor-Setup.

Create directories for OSG services

```
$ cd /opt
$ mkdir share
$ mkdir share/data
$ mkdir share/app
$ mkdir wn-client
$ chmod a+rxw /opt/share/*
$ mkdir osg
$ mkdir osg-1.0.0
$ mount --bind osg-1.0.0 osg
$ mkdir pacman
```

Using a bind mount lets you refer to things in /opt/osg so that you can upgrade your osg ce installation in a versioned directory (e.g. osg-x.y.z) and seamlessly switch from an older install to a newer install.

Pacman

The first component you will need to install is pacman. Pacman is the package manager that is used by the OSG to distribute it's software. The installation process for this is fairly simple and is outlined below

```
$ cd /opt
$ wget http://physics.bu.edu/pacman/sample_cache/tarballs/pacman-latest.tar.gz
--15:20:25--  http://physics.bu.edu/pacman/sample_cache/tarballs/pacman-latest.tar.gz
=> `pacman-latest.tar.gz'
Resolving physics.bu.edu... 128.197.41.42
Connecting to physics.bu.edu|128.197.41.42|:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 852,424 (832K) [application/x-gzip]

100%[=====>] 852,424      1.67M/s

15:20:26 (1.67 MB/s) - `pacman-latest.tar.gz' saved [852424/852424]
$ tar xzf pacman-latest.tar.gz
```

- At this point you will have a directory called `pacman-*x.xx*` where `x.xx` is version number of pacman

```
$ mount --bind pacman-*x.xx* pacman
```

This will allow you to upgrade pacman at a later time without changing your references to the pacman binaries

```
$ cd pacman
$ source setup.sh
```

This step will initialize the pacman setup and get the correct environment variables and paths into your environment.

At this point, pacman is setup and is ready for your use.

Installing the CE software

This guide assumes that you will be using a gridmap for your setup and not a GUMS server. To setup things up using a gums server, please refer to the release documentation for OSG CE software.

```
$ cd osg
$ export PER_JOB_HISTORY_DIR=/opt/osg/gratia/var/data
$ pacman -get OSG:ce
Do you want to add [http://software.grid.iu.edu/pacman/] to [trusted.caches]? (y/n/yall)
Beginning VDT prerequisite checking script vdt-common/vdt-prereq-check...

All prerequisite checks are satisfied.
```

```
===== IMPORTANT =====
```

```
The VDT no longer installs certificate authority certificates at install time.
Most of the software installed by the VDT *will not work* until you install
certificates. To complete your CA certificate installation, see the notes
in the post-install/README file.
```

```
Existing /tmp/opt/osg-1.0.0/edg/etc/edg-mkgridmap.conf moved to /tmp/opt/osg-1.0.0/edg/
Merge it manually with the new /tmp/opt/osg-1.0.0/edg/etc/edg-mkgridmap.conf if you ha
```

```
Pacman Installation of OSG-1.0.0 Complete
```

```
$ source setup.sh
$ pacman -get OSG:Globus-Condor-Setup
$ pacman -get OSG:ManagedFork
```

The software should be installed at this point and you can move on to configuration.

Configuring the CE software

At this point, the CE software will have been installed and is partially configured. There are a few more steps needed to get a working setup.

Generating service certificates (Optional)

If you already have your service certificates, or if you only intend this CE as a demonstration, you can skip this section. Otherwise, the instructions in this section will allow you to create service certificates.

Log in to a machine with OSG clients installed. Go to a directory that is readable only by you and which can be used to hold your certificate requests and private keys. Then run the following commands:

```
$ source $OSG_LOCATION/setup.sh

$ mkdir http_cert
$ cd http_cert
$ cert-request -host your.host -dir . -ou s -service http
$ mkdir rsv_cert
$ cd rsv_cert
$ cert-request -host your.host -dir . -ou s -service rsv
```

You will need to answer a few questions when generating the requests and will get a serial number after the command completes. This serial will let you retrieve your certificate once it has been signed. Also after

running these commands, you will have a file of the form xxxkey.pem where xxx is a number. You will need that file since it contains the private key for your certificate.

After a little time, you should receive an email from the registration authority (RA) of the virtual organization (VO) that you indicated that your site is a member of. The email will give you instructions on how to retrieve your host certificates. When you have retrieved them, install them on your server.

```
$ mkdir /etc/grid-security/http
$ mkdir /etc/grid-security/rsv
$ cp http_cert/*key.pem /etc/grid-security/http/httpkey.pem
$ cp http_cert/*cert.pem /etc/grid-security/http/httpcert.pem
$ cp rsv_cert/*cert.pem /etc/grid-security/rsv/rsvcert.pem
$ cp rsv_cert/*key.pem /etc/grid-security/rsv/rsvkey.pem
```

Installing service certificates

If you do not have service certificates for RSV and HTTP, you will need to use your host cert.

```
$ cd /etc/grid-security
$ mkdir http
$ mkdir rsv
$ cp hostkey.pem http/httpkey.pem
$ cp hostcert.pem http/httpcert.pem
$ cp hostkey.pem rsv/rsvkey.pem
$ cp hostcert.pem rsv/rsvcert.pem
```

Then, set permissions correctly on your certs.

```
$ chmod 755 /etc/grid-security/http
$ chmod 755 /etc/grid-security/rsv
$ chmod 644 /etc/grid-security/hostcert.pem
$ chmod 400 /etc/grid-security/hostkey.pem
$ chmod 644 /etc/grid-security/http/httpcert.pem
$ chmod 400 /etc/grid-security/http/httpkey.pem
$ chmod 644 /etc/grid-security/containercert.pem
$ chmod 400 /etc/grid-security/containerkey.pem
$ chmod 644 /etc/grid-security/rsv/rsvcert.pem
$ chmod 400 /etc/grid-security/rsv/rsvkey.pem
```

Setting up a simple gridmap file

For a simple install, you can use a gridmap file to create a list of users that are allowed to access your

compute element.

Here you will need to replace **DN** with the DN of your personal grid certificate and **USER_ACCOUNT** with the name of the account that this DN should map to. **Note, the do not map this DN to root or any other privileged account**

- ○ Hint: `openssl x509 -in /home/sarah/.globus/usercert.pem -noout -subject`

```
$ echo '"DN" USER_ACCOUNT' >> grid-mapfile
```

Here you will need to replace **DN** with the DN of your rsv service certificate. **Note, the do not map this DN to root or any other privileged account**

- ○ Hint: `openssl x509 -in /etc/grid-security/rsv/rsvcert.pem -noout -subject`

```
$ echo '"RSVDN" rsv_user' >> grid-mapfile
$ chmod 644 grid-mapfile
```

Add VO support to the gridmap file

In order to support VOs you will need to download their users and add accounts for them. First, back up your local users:

```
$ cp /etc/grid-security/grid-mapfile /etc/grid-security/grid-mapfile-local
```

Edit `/opt/osg/edg/etc/edg-mkgridmap.conf` and add this line to the end.

```
gmf_local /etc/grid-security/grid-mapfile-local
```

Also, in this file you will see lines that look like this:

```
# USER-VO-MAP ilc ILC -- 31 -- Lynn Garren (garren@fnal.gov)
group vomss://voms.fnal.gov:8443/voms/ilc ilc
```

Each is a VO that will be allowed to log in to your gatekeeper. Comment out each that you do not wish to support. For our exercise, we want OSG and OSGEDU only. We should create accounts for these users:

```
$ useradd osg
$ passwd osg
$ useradd osgedu
$ passwd osg
```

If this is too much typing, here is a correct copy of [edg-mkgridmap.conf](#)

Turn on `edg-mkgridmap` and run it for the first time.

```
$ vdt-register-service --name edg-mkgridmap --enable
$ vdt-control --on edg-mkgridmap
$ /opt/osg/edg/sbin/edg-mkgridmap >>/opt/osg/edg/log/edg-mkgridmap.log 2>&1
```

Check the gridmap to see the new account mappings.

```
$ head /etc/grid-security/grid-mapfile
"/C=AR/O=e-Ciencia/OU=UNLP/L=CeSPI/CN=Fernando Monticelli" usatlas1
"/C=AT/O=AustrianGrid/OU=UIBK/OU=astro/OU=HEPHY/CN=Brigitte Epp" usatlas1
"/C=AT/O=AustrianGrid/OU=UIBK/OU=astro/OU=HEPHY/CN=Emmerich Kneringer" usatlas1
```

Setting up your CA certificate updater

You will now need to setup and retrieve the ca certs updater

- Open `/opt/osg/vdt/etc/vdt-update-certs.conf` in your text editor of choice
- Uncomment the line the following line (i.e. remove the leading `#` mark)

```
#cacerts_url = http://software.grid.iu.edu/pacman/cadist/ca-certs-version
```

- Run the following commands at the command line:

```
$ source $VDT_LOCATION/vdt-questions.sh; $VDT_LOCATION/vdt/sbin/vdt-setup-ca-certificat
$ vdt-control --enable vdt-update-certs
$ vdt-control --on vdt-update-certs
```

You should now have the ca certs updater setup and it will automatically update your ca certificates using the certs distributed by the OSG grid operations center (GOC).

Configuring your system

Here we will configure the majority of the system using the `configure-osg` script and a configuration file. In order to do this, follow the steps below:

```
$ cd /opt/osg/
$ source /opt/osg/setup.sh
```

- Edit the `/opt/osg/monitoring/config.ini` file and make the following changes
 - Go to the section starting with `[Default]`
 - `localhost` set to the install server's fully qualified host name
 - `admin_email` set to your email address
 - `osg_location`=set to `'/opt/osg`
 - Go to the section starting with `[Site Information]`
 - Remove the `%(unavailable)s` and replace it with the correct values for the variables

- listed below
- `site_name` A short name for your site. Example: MWT2_IU, OU_HEP , REUNA1
- `sponsor` For this workshop, use 'osg'
- `site_policy` A url to your site's usage policy. Example: <http://www.mwt2.org/policy.html>
- `contact`, set this to your email address
- `city`
- `country`
- `latitude` You can set this to 0 if you do not know your latitude
- `longitude` Like latitude
- Go to the section starting with [Condor]
 - Remove the `%(unavailable)s` and replace it with the correct values for the variables listed below
 - `enabled` , change the `%(unavailable)s` to `%(enable)s`
 - `home`, set this to `/opt/osg/condor`
 - `wgram` , change the `%(unavailable)s` to `%(enable)s`
- Go to the section starting with [ManagedFork]
 - Remove the `%(unavailable)s` and replace it with the correct values for the variables listed below
 - `enabled` , change the `%(unavailable)s` to `%(enable)s`
 - `condor_location` , change the `%(unavailable)s` to `/opt/osg/condor`
- Go to the section starting with [Misc Services]
 - Remove the `%(unavailable)s` and replace it with the correct values for the variables listed below
 - `use_cert_updater` , change the `%(unavailable)s` to `%(enable)s`
- Go to the section starting with [Storage]
 - Remove the `%(unavailable)s` and replace it with the correct values for the variables listed below
 - `grid_dir` , change the `%(unavailable)s` to `/opt/wn-client`
 - `app_dir` , change the `%(unavailable)s` to `/opt/share/app`
 - `data_dir` , change the `%(unavailable)s` to `/opt/share/data`
 - `worker_node_temp` , change the `%(unavailable)s` to `/tmp`
 - `site_read` , change the `%(unavailable)s` to `/opt/share/data`
 - `site_write` , change the `%(unavailable)s` to `/opt/share/data`
- Go to the section starting with [GIP]
 - Remove the `%(unavailable)s` and replace it with the correct values for the variables listed below
 - `batch` , change the `%(unavailable)s` to `condor`
- Go to section starting with [Subcluster CHANGE ME]
 - Change name to [Subcluster Main]
 - `name`, change to `Main`
 - `node_count` , change the `NUMBER_OF_NODE` to the number of worker nodes your cluster

- has. For this tutorial, enter 1
- `ram_mb` , change the `MB_OF_RAM` to the ram that your cluster has in MB (hint: `cat /proc/meminfo`)
- `cpu_module` , change the `CPU_MODEL_FROM` `/proc/cpuinfo` to the model of your cluster's cpus (hint: `cat /proc/cpuinfo`)
- `cpu_vendor` , change the `VENDOR_AMD_OR_INTEL` to the vendor of your cluster's cpus (e.g. Intel, AMD)
- `cpu_speed_mhz` , change the `CLOCK_SPEED_MHZ` to the clock speed of your cluster's cpus in MHz. For example, a 2.83GHz cpue runs at 2830 MHz.
- `cpus_per_node`, change `#_PHYSICAL_CHIPS_PER_NODE` to number of chips per node (e.g. 1)
- `cores_per_node`, change `#_CORES_PER_NODE` to number of cores total in the node (e.g. 8 for a dual socket, quad core node)
- Go to the section starting with `[RSV]`
 - Remove the `%(unavailable)s` and replace it with the correct values for the variables listed below
 - `enabled` , change the `%(unavailable)s` to `%(enable)s`
 - `rsv_user` , change the `%(unavailable)s` to name of the account that has been created for rsv (`rsv_user`)
 - `enable_ce_probes` , change the `%(unavailable)s` to `%(enable)s`
 - `ce_hosts` , change the `%(unavailable)s` to `%(localhost)s`
 - `enable_gridftp_probes` , change the `%(unavailable)s` to `%(enable)s`
 - `gridftp_hosts` , change the `%(unavailable)s` to `%(localhost)s`
 - `use_service_cert` , change the `%(unavailable)s` to `%(enable)s`
 - `rsv_cert_file` , change the `%(unavailable)s` to `/etc/grid-security/rsv/rsvcert.pem`
 - `rsv_key_file` , change the `%(unavailable)s` to `/etc/grid-security/rsv/rsvkey.pem` * Copy the config file into place and check for errors

```
$ cp /root/simple-config.ini /opt/osg/monitoring/config.ini
$ /opt/osg/monitoring/configure-osg.py -v
Using /opt/osg/monitoring as the installation directory
Using /opt/osg/monitoring/config.ini as the configuration file
Configuration verified successfully
```

- Then install the configuration

```
$ /opt/osg/monitoring/configure-osg.py -c
# grep rsv_user /etc/grid-security/grid-mapfile
"/DC=org/DC=doegrids/OU=Services/CN=itb1.uchicago.edu" rsv_user
[root@itb1 grid-security]# /opt/osg/monitoring/configure-osg.py -v
```

```
Using /opt/osg/monitoring as the installation directory
Using /opt/osg/monitoring/config.ini as the configuration file
Configuration verified successfully
[root@itb1 grid-security]# /opt/osg/monitoring/configure-osg.py -c
Using /opt/osg/monitoring as the installation directory
Using /opt/osg/monitoring/config.ini as the configuration file
The following consumer subscription has been installed:
    HOST:      https://osg-ress-1.fnal.gov:8443/ig/services/CEInfoCollector
    TOPIC:     OSG_CE
    DIALECT:   OLD_CLASSAD

The following consumer subscription has been installed:
    HOST:      http://is1.grid.iu.edu:14001
    TOPIC:     OSG_CE
    DIALECT:   RAW

The following consumer subscription has been installed:
    HOST:      http://is2.grid.iu.edu:14001
    TOPIC:     OSG_CE
    DIALECT:   RAW

## cacerts_url specifies where to get CAs from
# There should only be 1 uncommented line declaring cacerts_url
#cacerts_url = http://vdt.cs.wisc.edu/software/certificates/vdt-igtf-ca-certs-version
cacerts_url = http://software.grid.iu.edu/pacman/cadist/ca-certs-version
#cacerts_url = [ URL of the version file ]
Not defined: PER_JOB_HISTORY_DIR
INFO: Attempting to install RSV consumers.
INFO: Attempting to install RSV probes on appropriate URI(s).
INFO: Creating .sub files for RSV probes of type OSG-Local-Monitor
      for URI: itb1.uchicago.edu (host: itb1.uchicago.edu)
INFO: Creating .sub files for RSV probes of type OSG-CE
      for URI: itb1.uchicago.edu (host: itb1.uchicago.edu)
INFO: Re-using metrics config file for itb1.uchicago.edu
      /opt/osg/osg-rsv/config/itb1.uchicago.edu_metrics.conf
Existing settings like on/off and metric intervals will be re-used.
Any new metrics found in probe set will be added with their default settings.

INFO: Creating .sub files for RSV probes of type GridFTP
      for URI: itb1.uchicago.edu (host: itb1.uchicago.edu)
INFO: Re-using metrics config file for itb1.uchicago.edu
      /opt/osg/osg-rsv/config/itb1.uchicago.edu_metrics.conf
Existing settings like on/off and metric intervals will be re-used.
```

```
Any new metrics found in probe set will be added with their default settings.
```

```
INFO: Attempting to configure Apache to serve local RSV probe output
Adding RSV alias to point to the current RSV installation.
Apache setup properly to serve results from current RSV installation.
Restart Apache for changes to take effect.
Enabling the Apache service using vdt-control ...
Pages can be viewed at https://HOSTNAME:8443/rsv
Configure-osg completed successfully
```

Configuring WS-GRAM

The ws-gram system is a web services enabled method for submitting and monitoring jobs on grid resources. The ws-gram system requires the following steps to configure it.

- Set the ownership for the new container certs

```
$ chown daemon /etc/grid-security/container*.pem
```

- run `visudo` to edit the sudoers file

```
$ visudo
```

- add this:

```
Runas_Alias GLOBUSUSERS = ALL, !root
daemon ALL=(GLOBUSUSERS) \
    NOPASSWD: /opt/osg/globus/libexec/globus-gridmap-and-execute \
    -g /etc/grid-security/grid-mapfile \
    /opt/osg/globus/libexec/globus-job-manager-script.pl *
daemon ALL=(GLOBUSUSERS) \
    NOPASSWD: /opt/osg/globus/libexec/globus-gridmap-and-execute \
    -g /etc/grid-security/grid-mapfile \
    /opt/osg/globus/libexec/globus-gram-local-proxy-tool *
```

Start the services

Now we will start the services.

```
$ vdt-control --on
enabling cron service fetch-crl... ok
enabling cron service vdt-rotate-logs... ok
enabling cron service vdt-update-certs... ok
```

```
skipping init service 'gris' -- marked as disabled
enabling inetd service globus-gatekeeper... ok
enabling inetd service gsiftp... ok
enabling init service mysql... ok
enabling init service globus-ws... ok
enabling cron service edg-mkgridmap... ok
skipping cron service 'gums-host-cron' -- marked as disabled
skipping init service 'MLD' -- marked as disabled
enabling init service condor-cron... ok
enabling init service apache... ok
enabling init service osg-rsv... ok
enabling init service tomcat-55... ok
enabling init service syslog-ng-sender... ok
enabling init service condor... ok
enabling cron service gratia-condor... ok
```

Install Worker Node Client

The worker node client is a sub-set of the OSG client. All worker nodes are expected to have this software. Because in this workshop our gatekeeper is also a worker node, we install it here.

- Log out and log back in, to remove your OSG:CE settings.

```
$ source /opt/pacman/setup.sh
$ cd /opt/wn-client/
$ pacman -get OSG:wn-client
Do you want to add [http://software.grid.iu.edu/pacman/] to [trusted.caches]? (y/n/yall)
Beginning VDT prerequisite checking script vdt-common/vdt-prereq-check...

All prerequisite checks are satisfied.

VDT 1.10.1 installs a variety of software, each with its own license.
In order to continue, you must agree to the licenses.
You can view the licenses online at:

    http://vdt.cs.wisc.edu/licenses/1.10.1

After the installation has completed, you will also be able to
view the licenses in the "licenses" directory.

Do you agree to the licenses? [y/n] y

Several services provided by the VDT create unbounded log files.  If you wish, we can r
```

Would you like to setup daily rotation of VDT log files?

Possible answers:

y: Yes, I want the service to run automatically (once enabled)

n: No, I do NOT want the service to run automatically

Note: Services are enabled with vdt-control; see 'post-install/README'.

Y

Do you want to run a cron job that will update the CA certificate revocation lists automatically? This will use the fetch-crl program that comes with the VDT. The cron job will run at a random time between midnight and 6:00am. We select a random time to avoid having all VDT installations fetching CRLs at the same time.

Do you want to update the CA certification revocation lists (CRLs) automatically? [y/n]

Do you want to automatically update your CA certificates? If so, we will check for updates once a day via cron.

Do you want to automatically update your CA Certificates? [y/n] y

The VDT typically installs public certificates and signing policy files for the well-known public CA's. This is necessary in order for you to perform GSI authentication with any remote Grid services (that have service/host certificates signed by these CA's).

For more information please refer to the VDT documentation:

http://vdt.cs.wisc.edu/releases/1.10.1/setup_ca.html

Where would you like to install CA files?

Choices:

r (root) - install into /etc/grid-security/certificates
(existing CA files will be preserved)

l (local) - install into \$VDT_LOCATION/globus/share/certificates

n (no) - do not install

l

=====
IMPORTANT
=====

```
The VDT no longer installs certificate authority certificates at install time.
Most of the software installed by the VDT *will not work* until you install
certificates. To complete your CA certificate installation, see the notes
in the post-install/README file.
```

```
The OSG Worker Node Client package version 1.0.1 has been installed.
```

Setting up your CA certificate updater

Similar to the OSG:CE install, you will now need to setup and retrieve the ca certs updater

- Open `/opt/wn-client/vdt/etc/vdt-update-certs.conf` in your text editor of choice
- Uncomment the line the following line (i.e. remove the leading `#` mark)

```
#cacerts_url = http://software.grid.iu.edu/pacman/cadist/ca-certs-version
```

- Run the following commands at the command line:

```
$ source /opt/wn-client/setup.sh
$ source $VDT_LOCATION/vdt-questions.sh; $VDT_LOCATION/vdt/sbin/vdt-setup-ca-certificat
$ vdt-control --enable vdt-update-certs
$ vdt-control --on vdt-update-certs
```

You should now have the ca certs updater setup and it will automatically update your ca certificates using the certs distributed by the OSG grid operations center (GOC).

Verify the install

- Switch to your personal account, create a grid proxy and run the site verify script

```
$ su - sarah
$ source /opt/osg/setup.sh
$ grid-proxy-init
Your identity: /DC=org/DC=doegrids/OU=People/CN=Sarah Williams 349314
Enter GRID pass phrase for this identity:
Creating proxy .....
Your proxy is valid until: Wed Jan 21 20:51:17 2009
$ /opt/osg/verify/site_verify.pl
=====
Info: Site verification initiated at Wed Jan 21 13:51:28 2009 GMT.
=====
-----
```

```
----- Begin iut2-c122.iu.edu at Wed Jan 21 13:51:28 2009 GMT -----  
-----  
Checking prerequisites needed for testing: PASS  
Checking for a valid proxy for root@iut2-c122.iu.edu: PASS  
Checking if remote host is reachable: PASS  
Checking for a running gatekeeper: YES; port 2119  
Checking authentication: PASS  
Checking 'Hello, World' application: PASS  
Checking remote host uptime: PASS  
    08:51:29 up 5 days, 18:40,  1 user,  load average: 0.01, 0.04, 0.01  
Checking remote Internet network services list: PASS  
Checking remote Internet servers database configuration: PASS  
Checking for GLOBUS_LOCATION: /opt/osg/globus  
Checking expiration date of remote host certificate: Jan 16 21:06:26 2010 GMT  
Checking for gatekeeper configuration file: YES  
    /opt/osg/globus/etc/globus-gatekeeper.conf  
Checking users in grid-mapfile, if none must be using Prima: rsv_user,sarah,usatlas1  
Checking for remote globus-sh-tools-vars.sh: YES  
Checking configured grid services: PASS  
    jobmanager,jobmanager-condor,jobmanager-fork,jobmanager-managedfork  
Checking for OSG osg-attributes.conf: YES  
Checking scheduler types associated with remote jobmanagers: PASS  
    jobmanager is of type fork  
    jobmanager-condor is of type condor  
    jobmanager-fork is of type fork  
    jobmanager-managedfork is of type managedfork  
Checking for paths to binaries of remote schedulers: PASS  
    Path to condor binaries is /opt/osg/condor/bin  
    Path to managedfork binaries is .  
Checking remote scheduler status: PASS  
    condor : 0 jobs running, 0 jobs idle/pending  
Checking if Globus is deployed from the VDT: YES; version 1.10.1r  
Checking for OSG version: YES; version 1.0.0  
Checking for OSG grid3-user-vo-map.txt: YES  
    usatlas users: usatlas1  
Checking for OSG site name: IUT2-C122  
Checking for OSG $GRID3 definition: /opt/osg  
Checking for OSG $OSG_GRID definition: /opt/wn-client  
Checking for OSG $APP definition: /opt/share/app  
Checking for OSG $DATA definition: /opt/share/data  
Checking for OSG $TMP definition: /opt/share/data  
Checking for OSG $WNTMP definition: /tmp  
Checking for OSG $OSG_GRID existence: PASS
```

```
Checking for OSG $APP existence: PASS
Checking for OSG $DATA existence: PASS
Checking for OSG $TMP existence: PASS
Checking for OSG $APP writability: PASS
Checking for OSG $DATA writability: PASS
Checking for OSG $TMP writability: PASS
Checking for OSG $APP available space: 416.467 GB
Checking for OSG $DATA available space: 416.467 GB
Checking for OSG $TMP available space: 416.467 GB
Checking for OSG additional site-specific variable definitions: YES
Checking for OSG execution jobmanager(s): iut2-c122.iu.edu/jobmanager-condor
Checking for OSG utility jobmanager(s): iut2-c122.iu.edu/jobmanager-condor
Checking for OSG sponsoring VO: usatlas
Checking for OSG policy expression: NONE
Checking for OSG setup.sh: YES
Checking for OSG $Monalisa_HOME definition: /opt/osg/MonaLisa
Checking for MonALISA configuration: PASS
  key ml_env vars:
    FARM_NAME = iut2-c122.iu.edu
    FARM_HOME = /opt/osg/MonaLisa/Service/VDTFarm
    FARM_CONF_FILE = /opt/osg/MonaLisa/Service/VDTFarm/vdtFarm.conf
    SHOULD_UPDATE = false
    URL_LIST_UPDATE = http://monalisa.cacr.caltech.edu/FARM_ML,http://monalisa.cern.ch
  key ml_properties vars:
    lia.Monitor.group = Test
    lia.Monitor.useIPAddress = undef
    MonaLisa.ContactEmail = root@iut2-c122.iu.edu
Checking for a running MonALISA: NO
  MonALISA does not appear to be running
Checking for a running GANGLIA gmond daemon: NO
  gmond does not appear to be running
Checking for a running GANGLIA gmetad daemon: NO
  gmetad does not appear to be running
Checking for a running gsiftp server: YES; port 2811
Checking gsiftp (local client, local host -> remote host): PASS
Checking gsiftp (local client, remote host -> local host): PASS
Checking that no differences exist between gsiftp'd files: PASS

-----
----- End iut2-c122.iu.edu at Wed Jan 21 13:51:55 2009 GMT -----
=====
Info: Site verification completed at Wed Jan 21 13:51:55 2009 GMT.
```

Testing your installation

We will test your installation by checking to see whether it accepts grid jobs, gridftp requests, ws-gram job requests and that the rsv system checks are up and running.

For these steps, you will need to login to your user account which should have your grid cert and key in the `~/.globus` directory. Before you start you will need to do the following:

```
$ source /opt/osg/setup.sh
$ grid-proxy-init
[sthapa@uct3-edge6 ~]$ grid-proxy-init
Your identity: /DC=org/DC=doe grids/OU=People/CN=Suchandra Thapa 757586
Enter GRID pass phrase for this identity:
Creating proxy ..... Done
Your proxy is valid until: Wed Nov 12 23:21:53 2008
```

Testing grid jobs

Here we will test the grid job submission system. You can do this using the following steps, where `your.ce.hostname` is replaced with the hostname of your install host:

```
$ globus-job-run your.ce.hostname:2119/jobmanager /usr/bin/id
```

You should get the uid and gids for the user account that your DN is mapped to. In addition, you should be able to do this using a different job manager by specifying `jobmanager-condor` instead of `jobmanager`.

Testing gridftp

Gridftp is a system for transferring files between various grid aware systems. You can test your system by following the steps below:

```
$ echo "test file" > test.file
$ globus-url-copy file:/// $PWD/test.file gsiftp://your.ce.hostname/tmp/
```

- Once this is done, you should see a `test.file` in the `/tmp` on your `ce`

```
$ globus-url-copy gsiftp://your.ce.hostname/tmp/test.file file:/// $PWD/new.file
```

- Once this is done, you should have a file called `new.file` in your current directory

Testing WS-GRAM

Testing ws-gram is similar to testing the job grid submission:

```
$ globusrun-ws -submit -Ft Fork -F your.ce.hostname:9443 -s -c /usr/bin/whoami=
```

You should get the uid and gids for the user account that your DN is mapped to. In addition, you should be able to do this using a different job manager by specifying jobmanager-condor instead of jobmanager.

Checking RSV

RSV consists of a series of probes that run at varying intervals on your system to test your system's integrity and functionality. You can see the results of these probe tests by going to <https://your.ce.hostname:8443/rsv/>.

At this point your installation should be complete and operational.

[SarahWilliams](#) - 20 Jan 2009

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