Ex No - 14	Setting Up Grid Using Globus Toolkit

Aim:

To set up a simple Grid infrastructure using Globus Toolkit in a Ubuntu Machine.

Procedure:

Setting up a Simple CA

As 'globus' user.

1. Login with 'globus' user account.
2. Execute the bellow command for setting up simple CA.

globus@ubuntu:~$ /usr/local/globus-4.0.4/setup/globus/setup-simple-ca

3. Leave the email of the CA and press enter.
4. Enter the PEM pass phrase as "globus123". Verify the entered password by retyping the same.
5. Change to 'root' user by executing the command 'sudo bash'.

As 'root' user.

6. Update Globus Location in /etc/profile and source the file.

```
#Globus Location
export GLOBUS_LOCATION=/usr/local/globus-
4.0.4 root@ubuntu:~# source /etc/profile
```

7. Now, execute the below command to setup ,

root@ubuntu:~# /usr/local/globus-
4.0.4/setup/globus_simple_ca_41151393_setup/setup-gsi -default
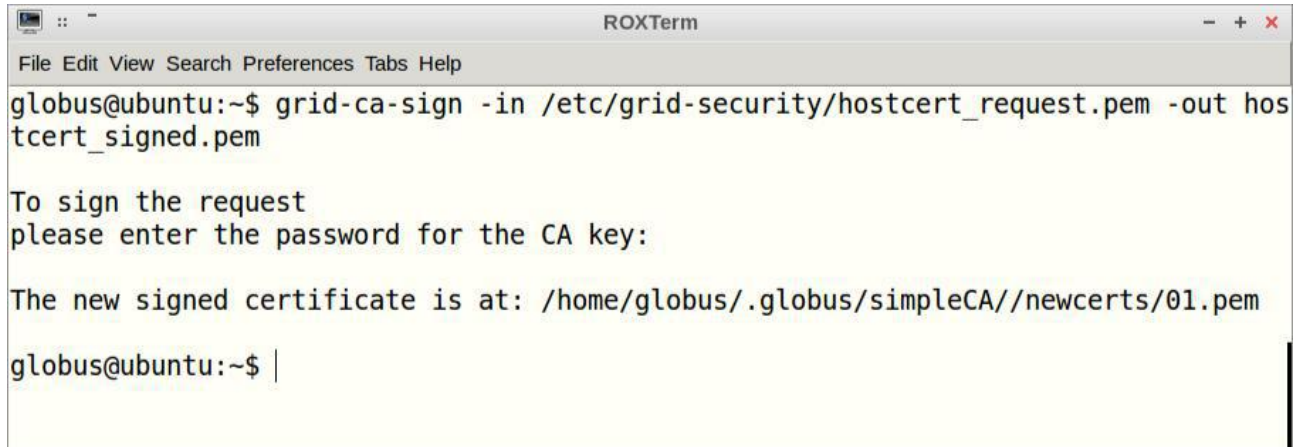
Getting and Signing Host certificate

As 'root' user.

1. Execute the below command for requesting host certificate.

root@ubuntu:~# grid-cert-request -host 'ubuntu'
Do you wish to continue? [n] y

2. The host certificate "hostcert_request.pem" will be created in the directory /etc/grid-security/ .
3. Switch to 'globus' user by

'exit'. R. Renuga Devi

As 'globus' user.

4. Execute the below command for getting the host certificate "hostcert_request.pem" signed.
5. Enter "globus123" as the password for the CA key.
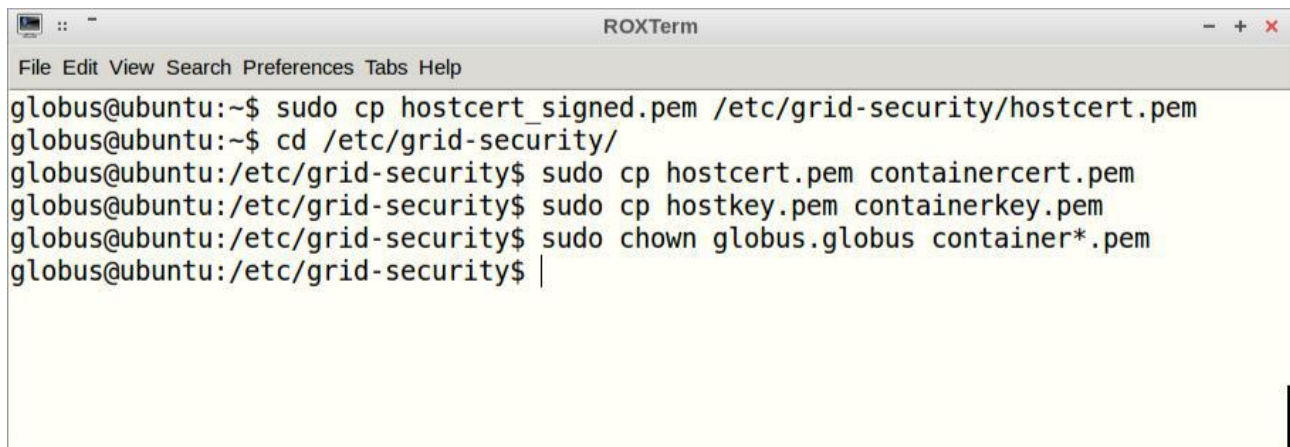6. The signed "hostcert_signed" will be created.

```
                              ROXTerm                          — + ✕
File Edit View Search Preferences Tabs Help
globus@ubuntu:~$ grid-ca-sign -in /etc/grid-security/hostcert_request.pem -out hos
tcert_signed.pem

To sign the request
please enter the password for the CA key:

The new signed certificate is at: /home/globus/.globus/simpleCA//newcerts/01.pem

globus@ubuntu:~$ |
```

NOTE: WHEN EXECUTING THE COMMAND < grid- ca-sign >, IF ANY ERROR
OCCURS, LIKE GRID-CA-SIGN NOT INSTALLED, THEN, RUN < source /etc/profile >
AND EXECUTE THE COMMAND < grid-ca-sign > AGIAN.

7. Copy the contents of the certificate "hostcert_signed.pem" to the certificate
   "hostcert.pem" which is located in the directory /etc/grid-security.
8. Navigate into the directory /etc/grid-security.
9. Now, copy "hostcert.pem" to "containercert.pem" and "hostkey.pem" to "containerkey.pem"
10. Assign the Ownership to the certificates containercert.pem and
    containerkey.pem as globus:globus.

```
                              ROXTerm                          — + ✕
File Edit View Search Preferences Tabs Help
globus@ubuntu:~$ sudo cp hostcert_signed.pem /etc/grid-security/hostcert.pem
globus@ubuntu:~$ cd /etc/grid-security/
globus@ubuntu:/etc/grid-security$ sudo cp hostcert.pem containercert.pem
globus@ubuntu:/etc/grid-security$ sudo cp hostkey.pem containerkey.pem
globus@ubuntu:/etc/grid-security$ sudo chown globus.globus container*.pem
globus@ubuntu:/etc/grid-security$ |
```
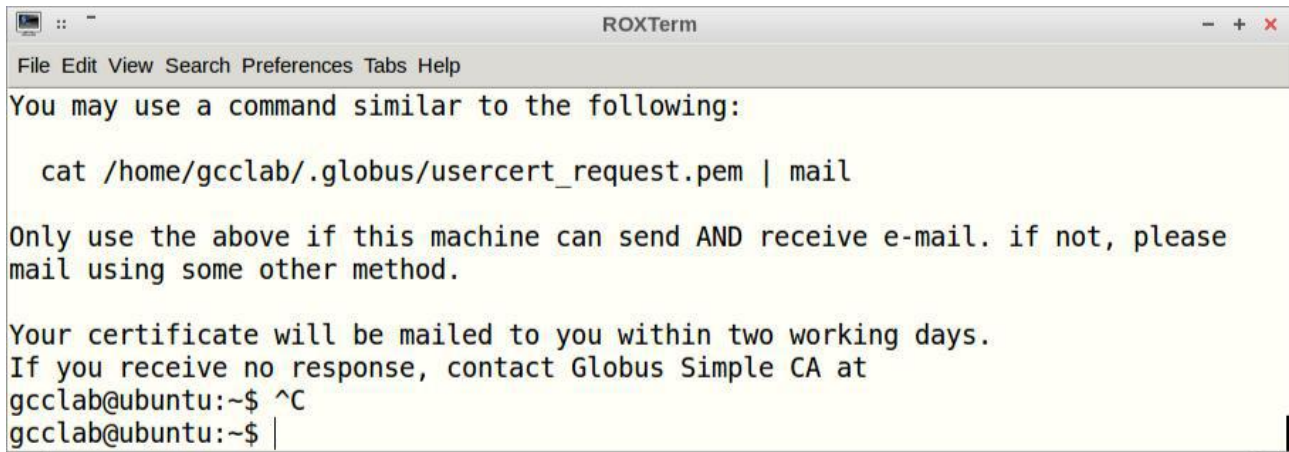
Getting and Signing User certificate

As normal user: 'gcclab'

1. Switch to 'gcclab' user account.
2. Execute the below command for requesting user

certificate. R. Renuga Devi

```
gcclab@ubuntu:~$ grid-cert-request
```

3. Enter the name as 'user1' and password as 'user123'.
4. On successful execution, the file "usercert_request.pem" is created and its location information will be displayed on the terminal.
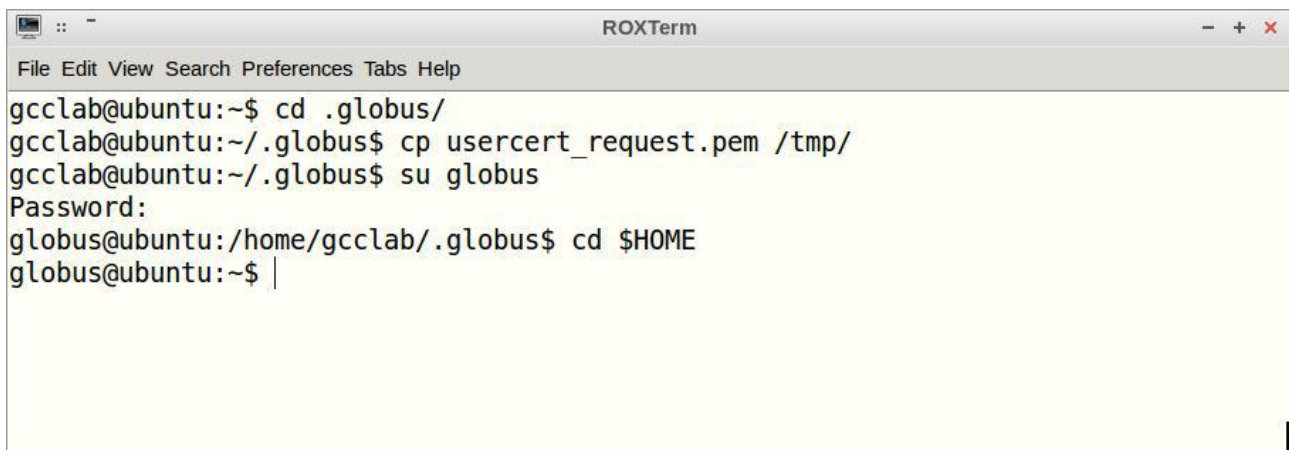
5. Navigate to the directory .globus.
6. Copy the file "usercert_request.pem" to the directory /tmp.
7. Now, switch to 'globus' user.

As 'globus' user:

8. Sign the certificate "usercert_request.pem" located in the directory /tmp
9. Enter "globus123" as the CA key.
10. Signed certificate "usercert_signed.pem" will be created in the /tmp directory as specified.
11. Switch to 'gcclab' user account.

```
                                      ROXTerm                           -  +  x
 File  Edit  View  Search  Preferences  Tabs  Help
 globus@ubuntu:~$ grid-ca-sign -in /tmp/usercert_request.pem -out /tmp/usercert_sig
 ned.pem

 To sign the request
 please enter the password for the CA key:

 The new signed certificate is at: /home/globus/.globus/simpleCA//newcerts/02.pem

 globus@ubuntu:~$ exit
 exit
 gcclab@ubuntu:~/.globus$ cd $HOME
 gcclab@ubuntu:~$
```

As normal user: 'gcclab'

12. Navigate to $HOME/.globus directory.
13. Copy the signed user certificate "usercert_signed.pem" in the /tmp
    directory as "usercert.pem" to the .globus directory.
14. Display the certificate information and copy the displayed result to the file "grid-
    mapfile" located in the directory /etc/grid-security/.
15. Execute grid-proxy-init command and verify using the user password 'user123'.
16. Done.


```
                                      ROXTerm                           -  +  x
 File  Edit  View  Search  Preferences  Tabs  Help
 gcclab@ubuntu:~/.globus$ cp /tmp/usercert_signed.pem usercert.pem
 gcclab@ubuntu:~/.globus$ grid-cert-info -subject
 /O=Grid/OU=GlobusTest/OU=simpleCA-ubuntu/CN=user1
 gcclab@ubuntu:~/.globus$ sudo nano /etc/grid-security/grid-mapfile
 gcclab@ubuntu:~/.globus$ grid-proxy-init -verify -debug

 User Cert File: /home/gcclab/.globus/usercert.pem
 User Key File: /home/gcclab/.globus/userkey.pem

 Trusted CA Cert Dir: /etc/grid-security/certificates

 Output File: /tmp/x509up_u1000
```

R. Renuga Devi

```
Trusted CA Cert Dir: /etc/grid-security/certificates

Output File: /tmp/x509up_u1000
Your identity: /O=Grid/OU=GlobusTest/OU=simpleCA-ubuntu/CN=user1
Enter GRID pass phrase for this identity:
Creating proxy .......++++++++++++
......++++++++++++
 Done
Proxy Verify OK
Your proxy is valid until: Thu Sep 29 16:20:32 2016
gcclab@ubuntu:~/.globus$
```