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Globus 4.0.4 installation on Ubuntu 6.10 (Edgy Eft)/Debian testing

Thanks & Credits to http://www.globus.org and Globus Team and Globus Alliance/Consortium

Please mail me about the mistakes and changes to be made

Requirements for Globus Toolkit 4.x (public IP address machines)

1) zliblg-dev (for GSI-OpenSSH)
2) J2SDK 1.4.x
3) Apache ANT
4) gcc
5) tar, make, sed
6) Perl
7) postgres, psql
8) libiodbc2, libiodbc2-dev
9) g++ (for gcc32dbg, gcc32dbgpthr)

As root:

```
root@host:~# vi /etc/profile

Add these following lines
export  GLOBUS_LOCATION=/usr/local/globus-4.0.4
export  JAVA_HOME=/usr/local/j2sdk1.4.2_13
export  ANT_HOME=/usr/local/ant
export  PATH=$PATH:${JAVA_HOME}/bin:${ANT_HOME}/bin
```

As root:

```
root@host:~# adduser globus

root@host:~# mkdir /usr/local/globus-4.0.4/

root@host:~# chown  -R  globus:globus /usr/local/globus-4.0.4/
```

As globus :

```
globus@host:~$ wget http://www-unix.globus.org/toolkit/survey/index.php?download=gt4.0.4-all-source-installer.tar.gz
globus@host:~$ tar xvzf gt4.0.4-all-source-installer.tar.gz
globus@host:~$ cd gt4.0.4-all-source-installer
globus@host:/gt4.0.4-all-source-installer$ ./configure --prefix=/usr/local/globus-4.0.4/ \
   --with-iodbc=/usr/lib  -with-flavour=gcc32dbgpthr
globus@host:/gt4.0.4-all-source-installer$ make | tee installer.log
globus@host:/gt4.0.4-all-source-installer$ make install
(This might take 2 to 4hours or more depending on the speed of the machine)
```

As globus :

(globus settings can be made by adding the follow lines to /etc/profile or locally each user account requiring globus should edit their /home/userx/.bashrc file)
Add these 2 lines:
export GLOBUS_LOCATION=/usr/local/globus-4.0.4
source $GLOBUS_LOCATION/etc/globus-user-env.sh

globus@host:~$ $GLOBUS_LOCATION/setup/globus/setup-simple-ca
step1: y
step2: press Return (for CA certificate expiry)
step3: Enter the passphrases 2 times (dont forget this, if you forget this again you have to follow the same steps and deploy it to rest of the machines in your grid environment)
step4: /O=Grid/OU=YourTest/OU=simpleCA-hostname/CN=Yourname Simple CA

If something goes wrong or confused about the state again run this script (enter your details and passphrase, this step might be confusing to starters, you can repeat this step a couple number of times with the -force options, if you are in doubt)

globus@host:~$ /usr/local/globus-4.0.4/setup/globus/setup-simple-ca
(Follow the above steps)

Finally upon success:

The distribution package built for this CA is stored in (xxx is some kind of ca certificate version)
/home/globus/.globus/simpleCA//globus_simple_ca_xxxxx_setup-xxxx.tar.gz
$GLOBUS_LOCATION/sbin/gpt-build \
/home/globus/.globus/simpleCA//globus_simple_ca_ebb88ce5_setup-0.18.tar.gz
$GLOBUS_LOCATION/sbin/gpt-postinstall
---
setup-ssl-utils: Configuring ssl-utils package
Running setup-ssl-utils-sh-scripts...
****
Note: To complete setup of the GSI software you need to run the
following script as root to configure your security configuration
directory:
/usr/local/globus-4.0.4/setup/globus_simple_ca_xxxx_setup/setup-gsi
For further information on using the setup-gsi script, use the -help
option. The -default option sets this security configuration to be
the default, and -nonroot can be used on systems where root access is
not available.
****
setup-ssl-utils: Complete

As globus :

```
globus@host:~$ ls ~/.globus/
simpleCA
globus@host:~$ ls ~/.globus/simpleCA/
cacert.pem  globus_simple_ca_xxxxx_setup-xxxx.tar.gz  newcerts
certs       grid-ca-ssl.conf                          private
crl         index.txt                                 serial
```

As Root:

```
root@host:~# $GLOBUS_LOCATION/setup/globus_simple_ca_xxx_setup/setup-gsi -default
root@host:~# ls /etc/grid-security/
certificates  globus-host-ssl.conf  globus-user-ssl.conf  grid-security.conf
root@host:~# ls /etc/grid-security/certificates/
xxxxx.0                 globus-user-ssl.conf.xxxx
xxxxx.signing_policy    grid-security.conf.xxxxx
globus-host-ssl.conf.xxxx
root@host:~# source $GLOBUS_LOCATION/etc/globus-user-env.sh
```

To get and sign HOST certificate

```
root@host:~# grid-cert-request -host `hostname` (use only the hostname don't use the domain name)
Generating a 1024 bit RSA private key
..++++++
.....................................................++++++
writing new private key to '/etc/grid-security/hostkey.pem'
...
```

As globus:

```
globus@host:~$ grid-ca-sign -in /etc/grid-security/hostcert_request.pem -out hostsigned.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
```

As Root:

```
root@host:~# cp ~globus/hostsigned.pem /etc/grid-security/hostcert.pem
root@host:/etc/grid-security# cp hostcert.pem containercert.pem
root@host:/etc/grid-security# cp hostkey.pem containerkey.pem
root@host:/etc/grid-security# chown globus:globus container*.pem
root@host:/etc/grid-security# ls -l *.pem
-r--------  1 globus globus   containerkey.pem
-rw-r--r--  1 globus globus   containercert.pem
-rw-r--r--  1 root   root     hostcert.pem
-rw-r--r--  1 root   root     hostcert_request.pem
-r--------  1 root   root     hostkey.pem
```

To get and sign USER certificate:

as user (not as root and not as globus)

```
user@host:~$ mkdir .globus
user@host:~$ vi .bashrc   ( and add the following lines if its not set in the /etc/profile)
export  GLOBUS_HOME=/usr/local/globus-4.0.4
export  JAVA_HOME=/usr/local/j2sdk1.4.2_13
export  ANT_HOME=/usr/local/ant
export  PATH=$PATH:${JAVA_HOME}/bin:${ANT_HOME}/bin
source  GLOBUS_LOCATION/etc/globus-user-env.sh


user@host:~$grid-cert-request
        step1: Enter your passphrases (don forget it otherwise you have redo from this step again)

user@host:~$cat /home/user/.globus/usercert_request.pem | mail globus@host
```

As globus:

```
globus@host:~$ grid-ca-sign -in request.pem -out 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/02.pem
globus@host:~$ cat signed.pem | mail user@host
```

As user:

```
user@host:~$ cp signed.pem ~/.globus/usercert.pem

user@host:~$ ls -l ~/.globus/
total 12
-rw-r--r--  1 user  usercert.pem
-rw-r--r--  1 user  usercert_request.pem
-r--------  1 user  userkey.pem

user@host:~/.globus$ grid-cert-info -subject
/O=Grid/OU=YourTest/OU=simpleCA-hostname/CN=your name
```

As Root:

```
root@host:/etc/grid-security# vim /etc/grid-security/grid-mapfile

root@host:/etc/grid-security# cat /etc/grid-security/grid-mapfile
“/O=Grid/OU=YourTest/OU=simpleCA-hostname/CN=your name"  user
```

Setting up GridFTP:

As root:

root@host:/etc/grid-security# vim /etc/xinetd.d/gridftp (add these lines in yellow)

```
service gsiftp
{
instances               = 100
socket_type             = stream
wait                    = no
user                    = root
env                     += GLOBUS_LOCATION=/usr/local/globus-4.0.4
env                     += LD_LIBRARY_PATH=/usr/local/globus-4.0.4/lib
server                  = /usr/local/globus-4.0.4/sbin/globus-gridftp-server
server_args             = -i
log_on_success          += DURATION
nice                    = 10
disable                 = no
}
```

root@host:/etc/grid-security# vim /etc/services

root@host:/etc/grid-security# tail /etc/services

```
vboxd          20012/udp
binkp          24554/tcp                # binkp fidonet protocol
asp            27374/tcp                # Address Search Protocol
asp            27374/udp
dircproxy      57000/tcp                # Detachable IRC Proxy
tfido          60177/tcp                # fidonet EMSI over telnet
fido           60179/tcp                # fidonet EMSI over TCP

# Local services
gsiftp         2811/tcp
```

root@host:/etc/grid-security# /etc/init.d/xinetd reload

Reloading internet superserver configuration: xinetd.

root@host:/etc/grid-security# netstat -an | grep 2811

```
tcp        0      0 0.0.0.0:2811            0.0.0.0:*               LISTEN
```

As user to check gridftp:

```
user@host:~$  grid-proxy-init -verify -debug
User Cert File: /home/user/.globus/usercert.pem
User Key File: /home/user/.globus/userkey.pem
Trusted CA Cert Dir: /etc/grid-security/certificates
Output File: /tmp/x509up_uxxx
Your identity:"/O=Grid/OU=YourTest/OU=simpleCA-hostname/CN=Yourname Simple CA" user
Enter GRID pass phrase for this identity: ****
Creating proxy .....++++++++++++
..++++++++++++
 Done
Proxy Verify OK
Your proxy is valid until: date
user@host:~$ globus-url-copy gsiftp://xxx.yyy.com/etc/group file:///tmp/user.test.copy
user@host:~$ diff /tmp/user.test.copy /etc/group
```

Starting a Web service Container:

As globus user:

```
globus@host:~$ vim $GLOBUS_LOCATION/start-stop
globus@host:~$ cat $GLOBUS_LOCATION/start-stop
#! /bin/sh
set -e
export GLOBUS_LOCATION=/usr/local/globus-4.0.4
export JAVA_HOME=/usr/local/java/j2sdk1.4.2_13/
export ANT_HOME=/usr/local/ant
export GLOBUS_OPTIONS="-Xms256M -Xmx512M"
. $GLOBUS_LOCATION/etc/globus-user-env.sh
cd $GLOBUS_LOCATION
case "$1" in
   start)
      $GLOBUS_LOCATION/sbin/globus-start-container-detached -p 8443
      ;;
   stop)
      $GLOBUS_LOCATION/sbin/globus-stop-container-detached
      ;;
   *)
      echo "Usage: globus {start|stop}" >&2
      exit 1
     ;;
esac
exit 0

globus@host:~$ chmod +x $GLOBUS_LOCATION/start-stop
```

AS root:

root@host:~# vim /etc/init.d/globus-4.0.4 (add these lines in yellow)

```
#!/bin/sh -e
case "$1" in
  start)
    su - globus /usr/local/globus-4.0.4/start-stop start
    ;;
  stop)
    su - globus /usr/local/globus-4.0.4/start-stop stop
    ;;
  restart)
    $0 stop
    sleep 1
    $0 start
    ;;
  *)
    printf "Usage: $0 {start|stop|restart}\n" >&2
    exit 1
    ;;
esac
exit 0
```

root@host:~# chmod +x /etc/init.d/globus-4.0.4

root@host:~# /etc/init.d/globus-4.0.4 start
Starting Globus container. PID: xxxxx

root@host:~# cat /usr/local/globus-4.0.4/var/container.log

140.221.8.31 is my IP address. Some people following the quickstart may see "127.0.0.1" here. You need to fix that! Edit $GLOBUS_LOCATION/etc/globus_wsrf_core/server-config.wsdd and client-server-config.wsdd, add a line reading <parameter name="logicalHost" value="*140.221.8.32*" /> under the <globalConfiguration> section. For instance:

```
<globalConfiguration>
  <parameter name="logicalHost" value="140.221.8.32" />
```

You can also use this to select the interface to publish for a multi-homed host. See *Global Configuration* for more container config options.

At this point, we can use one of the sample clients/services to interact with the container:

user@host:~$ **counter-client -s https://host.xyz.xyz:8443/wsrf/services/CounterService**
Got notification with value: 3
Counter has value: 3
Got notification with value: 13