HOWTO: Setting up WP7 monitoring tools with GLite

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1 Downloads and installation

1.1 Unmodified WP7 work

The EDG RPM repository can be reached from WP6's website at http://marianne.in2p3.fr/.

- 1. Follow the link marked DataGrid Code/EDG Repository to http://marianne.in2p3.fr/datagrid/repository/.
- 2. Browse the whole repository (http://datagrid.in2p3.fr/distribution/).
- 3. Follow the autobuild link and the folders below to reach the WP7 SRPMs.

You need the latest versions of the following WP7 RPMs from the EDG RPM repository:

- edg-iperf, edg-pinger, edg-udpmon These are the WP7 measurement infrastructures. Install at least edg-pinger to allow two-way delay and loss measurements.
- **iperf** This is the binary of the Iperf measurement tool, required by edgiperf. If it doesn't run on your machine, you may be able to replace the binary with one from the original authors.
- **edg-pcpd** This is the scheduling and host-locking system required by edgpinger, -iperf and -udpmon. These RPMs don't have a formal dependency on it, though.

These packages can use Apache, though it isn't necessary to install it if you do not require the visualisation front-end.

1.2 EDG-Pinger

The following is taken from Benjamin Vial's installation guide. The procedures for installing edg-iperf and edg-udpmon are similar.

PingER relies on the following packages: perl5, wget, tcsh. Date: 30th November 2004

- Download the latest source (tar ball recommanded) from: http://datagrid.in2p3.fr/distribution/autobuild/i386-rh7.3/wp7/SOURCES/
- 2. Unpack the tar ball into the source directory
 # > tar zfx edg-pinger-1.2.1.tar.gz
- 3. Enter the edg-pinger-1.2.1 directory
 # > cd edg-pinger-1.2.1
- 4. Configure the makefile
 # > ./configure --prefix=/opt/edg
 (/opt/edg will be the installation directory)
- 5. Build edg-pinger
 # > make
- 6. Install edg-pinger
 # > make install
- 7. Send the name of your machine on which you're installing edg-pinger at: sophie.nicoud@urec.cnrs.fr and wait for reply.
- 8. After confirmation, you'll be able to download the list of hostname that your pinger will monitor directly from the central monitoring server ccwp7.in2p3.fr

> /opt/edg/sbin/edg-pinger-get_config_file.csh
ccwp7.in2p3.fr

Once running, these tools will complain about some missing components (rgma-tools-defaults and edg-rgma-publish-service). These warnings can be safely ignored.

The tools must be configured to make measurements, though these files are set during step 8 above:

edg-pinger /opt/edg/etc/edg-pinger/ping_list.txt contains a list of hostnames, one on each line.

With PCP's edg-netmon-config-update script, these configurations can be automatically downloaded. However, they are downloaded from *ccwp7.in2p3.fr*, whoch is a central location, and not under our control. At present, I recommend that the tools should be manually configured.

1.3 PCP

The following instructions were provided by Benjamin Vial. Date: 30 November 2004

- 1. Download the latest source (tar ball recommanded) from: http://datagrid.in2p3.fr/distribution/autobuild/i386-rh7.3/wp7/SOURCES/
- 2. Unpack the tar ball into the source directory
 # > tar zfx edg-pcpd-2.0.7.tar.gz
- 3. Enter the edg-pcpd-2.0.7 directory
 # > cd edg-pcpd-2.0.7
- 4. Configure the makefile
 # > ./configure --prefix=/opt/edg (/opt/edg will be the instal lation directory)
- 5. Build edg-pcpd
 # > make
- 6. Install edg-pcpd
 # > make install
- 7. Open to your firewall, the port number TCP 50500, in order to run pcpd
- 8. Set the correct file permissions:
 - # > chmod ug+x /opt/edg/sbin/edg-pcpd.pl
 - # > chmod ug+x /etc/rc.d/init.d/edg-pcpd
- 9. Start the edg-pcpd daemon
 - # > /etc/rc.d/init.d/edg-pcpd start

10. Get list of registered tokens on the node

```
# > /opt/edg/bin/edg-pcpd-admin -L localhost
```

1.4 R-GMA

Follow the instructions for either the client install or the server and client install linked from the EGEE JRA1 Information Systems website (http://hepunx.rl.ac.uk/egee/jra1-uk/glite/doc/index.html).

You probably just need the Java API, the Servlet Implementation and R-GMA Base.

It might be possible to use 128.40.169.218 as a the server servlet host when setting up just a client. Certainly that host can serve as the Mediator and Registry host.

Temporary R-GMA bug If your program was built on 23/10/2004, you will need to correct a mistake in the RPMs. Check the build version with the following RPM command:

rpm -qi glite-rgma-base

```
Build Date: Sat 23 Oct 2004 19:17:50 BST
```

You need to edit /opt/glite/etc/rgma/rgma.conf. Find the line starting "DataBaseProducer=" and replace the section after the last slash ("/") with DBProducerServlet.

1.5 netmon2rgmaj

This is a conversion of netmon2rgma that uses the new R-GMA APIs, and can be obtained from Paul Mealor as a tar file. Decompress the tar into the root directory. It contains a Java jar, /opt/glite/share/java/glite-netmon2rgma.jar, and a SysV RC script, /etc/rc.d/init.d/glite-netmon2rgmad.

- If you haven't already done so when setting up R-GMA, create /etc/java/java.conf with the following content: JAVA_HOME=/usr/java/j2sdk1.4.2_06/ (to set JAVA_HOME to the location of your Java installation. The exact directory might be subtly different).
- 2. (Only versions *older* than 20041203) Create a symlink to the log4j JAR file

ln -s /usr/share/java/log4j.jar /opt/glite/share/java/

- 3. Extract the tar file to \not
- Make a directory called /opt/glite/var/log mkdir -p /opt/glite/var/log
- 5. Make the SysV RC script executable chmod +x /etc/rc.d/init.d/glite-netmon2rgmad
- Start the daemon with: service glite-netmon2rgmad start

1.6 Once everything is working

Once everything is working you can run chkconfig --add <service> for each of glite-netmon2rgmad, edg-pcpd, httpd (if you installed Apache).

2 Tests

2.1 Manually running tests

Once PCP is installed, you can attempt to run a test *manually* by running /opt/edg/lib/exec/pcp/scripts/edg-pinger

This should write some logging information to /opt/edg/var/logs/pinger.pcp.out. Ignore lines complaining about non-existant "publish-service" scripts (see above).

2.2 Debugging output from Netmon2RGMA

from the /var/log/messages Logs startup script go to or /var/log/boot.log. from Logs the running daemon will /tmp/Netmon2RGMA.log appear in (pre-December tarfile) or /opt/glite/var/log/Netmon2RGMA.log.

If you manually run tests, you should see quite a lot of logging information from each successful measurement.

2.3 R-GMA

To check that data is being published into the table, see http://localhost:8080/R-GMA/.

A PCP Information

The following information is given for information only, as it is not written down anywhere else. Anywhere.

```
Clique definition files have the following syntax:
name:test-traceroute
command:edg-pcp-traceroute
period:30
timeout:60
delay:20
option:ExternalLock
member:lon04.mb-ng.net
```

The lines can appear in any order, and comprise an option name and a value separated by a single colon (":"). Any whitespace will be taken as the name or value of the option. All the option names may only appear once, except for **option** and **member**, which may appear many times (actually any may appear more than once, but only the last option is taken).

- name Is the clique name. It should be unique.
- **command** Is the name of the command stored in the scripts directory (/opt/edg/lib/exec/pcpd/scripts).
- **period** The amount of time it should take for the token to traverse the clique.
- timeout After this period, a new token will be generated.
- delay This is the delay at each member.
- **option** This is allowed one value at present: ExternalLock, which ensures that the node will be locked while the token is present.

member Each of these options adds an extra node to the clique.

Hostname notes PCP tends to convert hostnames to IP addresses before building the token. This means that for hosts behind a router with a different IP address, some problems may occur without a little care.