

Quality Criteria Verification
Executive Summary
For QCV, Stage Rollout, DMSU and EGI internal

| | | | |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|------------|
| Name of the component | Emi.cream + emi.blah + emi.ge-utils + emi.apel_parsers | | |
| Release | emi.cream.sl5.x86_64-1.13.3 emi.blah.sl5.x86_64-1.16.3 emi.ge-utils.sl5.x86_64-1.0.0 emi.apel_parsers.sl5.x86_64-1.0.1 | | |
| Software Provider | EMI | | |
| Release Contact | Name: | E-Mail | |
| | Cristina Aiftimiei | crisrina.aiftimiei@pd.infn.it | |
| Validator | Name: | E-Mail | |
| | Enol Fernández | enolfc@ifca.unican.es | |
| Component status | Accepted | Date | |
| Verification start date | 29/08/2011 | Verification end date | 01/12/2011 |

Summary of Quality Criteria verification:

| | Generic Quality Criteria Total (Critical/Non critical) | | | |
|------------|--------------------------------------------------------|------------|----------------|-------|
| | Passed | Not passed | Not Applicable | Total |
| TP | 17 | 0 | 1 | 18 |
| VLD | 0 | 0 | 0 | 0 |
| | Specific Quality Criteria | | | |
| TP | 2 | 0 | 0 | 2 |
| VLD | 24 | 0 | 1 | 25 |

Summary:

Verification of four closely related EMI components that are installed as a single product:

- The CREAM update does not introduce new features, only bug fixes.
- Blah update introduces support for grid engine.
- Ge_utils is a new component for supporting the grid engine family of batch systems.
- Apel parsers update introduce fixes for grid engine and LSF

Although independent components are provided, they are all interdependent and some of them (ge_utils, blah) have their own documentation but use the one provided by cream.

The testing of this verification was focused on the support of grid engine batch system that is the main new feature of the release. No tests of other batch systems was performed since no changes are reported for them (LSF is not available in the verification testbed).

The components install without issues. There are some reported known issues in the configuration of the grid engine support that must be considered.

Functionality provided as expected, however the grid engine support should support also sites where project based, instead of queue based, configurations of the batch system is used. The use of pre and post scripts in the queues is harmless but may be considered too invasive for some sites.

There were two issues found in the yaim configuration:

- The file `/var/lib/bdii/gip/plugin/glite-info-dynamic-scheduler-wrapper` is incorrectly generated. See ggus ticket: https://ggus.eu/ws/ticket_info.php?ticket=76961
- In the `/etc/blah.conf` file it is needed to uncomment the line with the `sge_helperpath` (reported as known issue by TP)

These are minor configuration problems that can be easily solved by admins.

A very minor bug was also found in the yaim plugin for the cream, but it has no implications on the functionality or configuration. See ggus ticket https://ggus.eu/ws/ticket_info.php?ticket=76966

| | | | |
|----------------------------------------------------|--------------------------|------------------------|-----------------------------------------------------------------------------------------------------------------|
| RELEASE: See tickets | | VALIDATOR: | Enol Fernandez |
| RT TICKET: #3182, #3183, #3184, #2991 | | | |
| Criteria | Accepted (Y/N/NA) | Tested (TP/VLD) | Comments |
| Generic QC | | | |
| GENERIC_DOC_1 (Functional Description) | Y | VLD | Provided in component documentation links |
| GENERIC_DOC_2 (Release Notes) | Y | VLD | Release notes provided in each of the components RT tickets with relevant info |
| GENERIC_DOC_5 (API Documentation) | Y | VLD | Cream API documentation is available at Cream wiki |
| GENERIC_DOC_6 (Administrator Documentation) | Y | VLD | Several documents (CREAM and APEL) available |
| GENERIC_DOC_7 (Service Reference Card) | Y | VLD | CREAM and APEL provide service reference card |
| GENERIC_DOC_8 (Software License) | Y | VLD | Apache License |
| GENERIC_DOC_9 (Release changes testing) | Y | VLD | Testing as part of the release process of EMI |
| GENERIC_DIST_1 (Source Code Availability) | Y | VLD | Source available at glite repo |
| GENERIC_DIST_2 (Source Distribution) | Y | VLD | Source distribution available |
| GENERIC_DIST_3 (Binary Distribution) | Y | VLD | Packages conform to distribution policies with minor deviations (see details in report) Install without issues. |
| GENERIC_SERVICE_1 (Service control and start) | Y | VLD | init.d scripts available. Bupdater fails to stop correctly in some occasions. |
| GENERIC_SERVICE_2 (Log Files) | Y | VLD | Log files available in /var/log/cream |
| GENERIC_SERVICE_3 (Service Reliability) | Skipped | VLD | No scalability tests performed |
| GENERIC_SERVICE_4 (Service Robustness) | Skipped | VLD | No scalability tests performed |
| GENERIC_SERVICE_4 (Automatic Configuration) | Y | VLD | Automatic configuration performed with yaim. There are issues detailed in the report |
| GENERIC_SEC_1 (World Writable Files) | Y | VLD | No world writable files found |
| GENERIC_SEC_2 (Directory Traversal Attacks to) | NA | VLD | Not known directory traversal attacks |
| GENERIC_MISC_2 (Bug Tracking System) | Y | VLD | EMI enrolled in GGUS |
| Security Capabilities QC | | | |
| AUTHN_IFACE_1 (X.509 Certificate support) | Y | VLD | Proxies accepted without issues |
| AUTHN_IFACE_2 (SAML authentication) | NA | VLD | No SAML support provided |
| AUTHN_DELEG_1 (Delegation Interface) | Y | VLD | See testing report |
| AUTHZ_PCYDEF_3 (Ban UserFQAN) | Y | VLD | Correctly bans users |
| AUTHZ_PCYDEF_4 (Allowed users definition) | Y | VLD | Correctly allows users as defined |
| AUTHZ_PEP_1 (Policy Enforcement) | Y | VLD | Policies correctly enforced |
| AUTHZ_PEP_2 (User Mapping) | Y | VLD | Mapping is performed using gridmap |
| Information Capabilities QC | | | |
| INFOMODEL_SCHEMA_1 (GlueSchema Support) | Y | VLD | GlueSchema 1.3 info available |
| INFODISC_IFACE_1 (Information Discovery Interface) | Y | VLD | LDAP interface available |
| Compute Capabilities QC | | | |
| JOBEXEC_IFACE_1 (Job Execution Interface) | Y | VLD | Done basic testing of CREAM interface. No issues found |
| JOBEXEC_JOB_1 (Simple Job) | Y | VLD | See testing report |
| JOBEXEC_JOB_2 (Simple Job with input/output) | Y | VLD | See testing report |
| JOBEXEC_JOB_3 (Cancel Job) | Y | VLD | See testing report |

| | | | |
|-------------------------------------------------|---------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | Mostly non invasive, however some deployments require modification of pre post scripts in the batch system and passwordless ssh between WN and CE. The software cannot be used for sites with project based configuration (instead of queue based ones) |
| JOBEXEC_EXECMNGR_1 (Not Invasive Deploy) | Y | VLD | |
| JOBEXEC_EXECMNGR_2 (Job Management) | Y | VLD | Indirectly tested by the job tests |
| JOBEXEC_EXECMNGR_3 (Information Retrieval) | Y | VLD | See testing report |
| JOBEXEC_AVAIL_1 (Service Redundancy) | Y | VLD | Two CEs configured with same batch system, no issues found |
| JOBEXEC_AVAIL_2 (Self Disabling Mechanism) | Y | TP | Feature provided, not tested |
| JOBEXEC_AVAIL_3 (Job Submission Peaks) | Y | TP | Feature provided, not tested |
| JOBEXEC_AVAIL_4 (Timely Job Status Updates) | Y | VLD | Aprox. 1 minute delay in job status report. Acceptable for most use cases |
| PARALLEL_JOB_1 (Simple parallel job submission) | Y | VLD | See testing report |
| PARALLEL_JOB_2 (Single machine parallel job) | Skipped | VLD | Not enough WN for testing |
| PARALLEL_JOB_3 (Fine grained mapping parallel) | Skipped | VLD | Not enough WN for testing |
| Operations Capabilities QC | | | |
| MON_PROBE_GENERIC_2 (Service Probe) | Y | VLD | Nagios probe provided, tested with older one |
| MON_PROBE_JOBEXEC_1 (Job Execution Probe) | Y | VLD | Probe passes in verification nagios |
| MON_PROBE_JOBEXEC_2 (CREAM Job Execution) | Y | VLD | Probe passes in verification nagios |
| ACC_JOBEXEC_1 (Job Execution Appliances) | Y | VLD | The logs are correctly pushed to the MON host. |

Validator comments:

Verification steps:

- Added new repository for cream packages (coming from ticket)
- Reconfiguration using yaim (reuse of CREAM configuration for PBS, changing the following values:

```
BATCH_SERVER=sa3-ce.egee.cesga.es
BATCH_BIN_DIR=/usr/local/sge/pro/bin/lx24-amd64
BATCH_VERSION=6.2u3
JOB_MANAGER=sge
CE_BATCH_SYS=sge
BLPARSER_WITH_UPDATER_NOTIFIER="true"
SGE_CELL=default
SGE_QMASTER=536
SGE_EXECD=537
SGE_ROOT=/usr/local/sge/V61u3
BATCH_LOG_DIR=$SGE_ROOT/$SGE_CELL/common
SGE_SPOOL_METH=classic
SGE_CLUSTER_NAME=p536
SGE_SHARED_INSTALL=no
```

- Submission of several jobs, checking that they are correctly submitted to queues and the information is correctly published in BDII

All client tests were done with a gLite 3.2 UI to ensure backwards compatibility is kept.

No scalability checks were performed.

Detailed comments:

Some packages do not conform to the file locations defined by the distribution:

- yaim packages use /opt/glite as root. This is already known and expected.
- Lcg-info-dynamy-scheduler-generic uses /usr/lib/python, instead of the system path for python modules (/usr/lib64/python2.4/site-packages). The use of the system path would avoid the issue found with the BDII plugin.

Configuration:

Configuration used the creamCE and SGE_utils profiles. Once configured the blah does not start due to a known issue, that requires uncommenting the line with the sge_helperpath in /etc/blah.conf

All the other services start without problems but the bdii reports the following problem:

Traceback (most recent call last):

```
File "/usr/libexec/lcg-info-dynamic-scheduler", line 256, in ?
import lrms
```

ImportError: No module named lrms

It is solved by adding this line in /var/lib/bdii/gip/plugin/glite-info-dynamic-scheduler-wrapper:

```
export PYTHONPATH=/usr/lib/python:$PYTHONPATH
```

This was causing that the dynamic information from the batch system was not correctly published.

Job submission tests:

Delegate and renew proxy:

```
$ glite-ce-delegate-proxy -e test06.egi.cesga.es enoIID
2011-12-01 09:51:26,547 WARN - No configuration file suitable for loading.
Using built-in configuration
2011-12-01 09:51:28,022 NOTICE - Proxy with delegation id [enoIID] succesfully
delegated to endpoint [https://test06.egi.cesga.es:8443//ce-
cream/services/gridsite-delegation]

$ glite-ce-proxy-renew -e test06.egi.cesga.es enoIID
2011-12-01 09:52:25,901 WARN - No configuration file suitable for loading.
Using built-in configuration
2011-12-01 09:52:27,711 NOTICE - Proxy with delegation id [enoIID] succesfully
renewed to endpoint [https://test06.egi.cesga.es:8443//ce-
cream/services/gridsite-delegation]
```

Submit simple job:

```
$ glite-ce-job-submit -D enoIID -r test06.egi.cesga.es:8443/cream-sge-dteam
test-simple.jdl
2011-12-01 09:54:53,685 WARN - No configuration file suitable for loading.
Using built-in configuration
https://test06.egi.cesga.es:8443/CREAM686754240

$ glite-ce-job-status https://test06.egi.cesga.es:8443/CREAM686754240
2011-12-01 09:55:20,103 WARN - No configuration file suitable for loading.
Using built-in configuration

***** JobID=[https://test06.egi.cesga.es:8443/CREAM686754240]
Status = [REALLY-RUNNING]

$ glite-ce-job-status https://test06.egi.cesga.es:8443/CREAM686754240
2011-12-01 10:00:56,440 WARN - No configuration file suitable for loading.
Using built-in configuration

***** JobID=[https://test06.egi.cesga.es:8443/CREAM686754240]
Status = [DONE-OK]
ExitCode = [0]
```

Submit job with files:

```
$ glite-ce-job-submit -D enoIID -r test06.egi.cesga.es:8443/cream-sge-dteam
test1.jdl
2011-12-01 10:02:24,751 WARN - No configuration file suitable for loading.
Using built-in configuration
https://test06.egi.cesga.es:8443/CREAM554114915

$ glite-ce-job-status https://test06.egi.cesga.es:8443/CREAM554114915
```

```

2011-12-01 10:02:47,635 WARN - No configuration file suitable for loading.
Using built-in configuration

***** JobID=[https://test06.egi.cesga.es:8443/CREAM554114915]
        Status      = [DONE-OK]
        ExitCode     = [0]

$ uberftp test06.egi.cesga.es
220 test06.egi.cesga.es GridFTP Server 3.33 (gcc64pthr, 1305148829-80) [Globus
Toolkit 5.0.3] ready.
230 User dteam060 logged in.
uberftp> cd
/var/cream_sandbox/dteam/_DC_es_DC_irisgrid_0_ifca_CN_Enol_Fernandez_delCastil
lo_dteam_Role_NULL_Capability_NULL_dteam060/55/CREAM554114915/OSB
uberftp> ls
-rw-r--r--  1 dteam060  dteam  166 Dec  1 10:02  std.out
-rw-r--r--  1 dteam060  dteam    0 Dec  1 10:02  std.err
uberftp> get *
std.out: 166 bytes in 0.10 seconds. 1.61 KB/sec
std.err: 0.10 seconds.
uberftp>
$ cat std.out
total 4.0K
-rw-r--r--  1 dteam060  dteam    0 Dec  1 10:02  std.out
-rw-r--r--  1 dteam060  dteam    0 Dec  1 10:02  std.err
-rw-r--r--  1 dteam060  dteam  41 Dec  1 10:02  myfile

```

Cancel job:

```

$ glite-ce-job-submit -D enolID -r test06.egi.cesga.es:8443/cream-sge-dteam
test2.jdl
2011-12-01 10:04:22,247 WARN - No configuration file suitable for loading.
Using built-in configuration
https://test06.egi.cesga.es:8443/CREAM073178118

$ glite-ce-job-status https://test06.egi.cesga.es:8443/CREAM073178118
2011-12-01 10:04:45,154 WARN - No configuration file suitable for loading.
Using built-in configuration

***** JobID=[https://test06.egi.cesga.es:8443/CREAM073178118]
        Status      = [REALLY-RUNNING]

$ glite-ce-job-cancel https://test06.egi.cesga.es:8443/CREAM073178118
2011-12-01 10:04:55,551 WARN - No configuration file suitable for loading.
Using built-in configuration

Are you sure you want to cancel specified job(s) [y/n]: y

$ glite-ce-job-status https://test06.egi.cesga.es:8443/CREAM073178118
2011-12-01 10:09:04,170 WARN - No configuration file suitable for loading.
Using built-in configuration

***** JobID=[https://test06.egi.cesga.es:8443/CREAM073178118]
        Status      = [CANCELLED]
        ExitCode     = []
        Description  = [Cancelled by user]

```

Check information published:

```
# Check if resources are correctly published
$ glite-ce-job-submit -D enolID -r test06.egi.cesga.es:8443/cream-sge-dteam
test2.jdl
2011-12-01 15:17:44,130 WARN - No configuration file suitable for loading.
Using built-in configuration
https://test06.egi.cesga.es:8443/CREAM462563528

$ lcg-infosites --vo dteam ce
#CPU    Free    Total Jobs    Running Waiting ComputingElement
-----
      2         16          1          1          0
test06.egi.cesga.es:8443/cream-sge-dteam
```

Parallel job:

```
$ glite-ce-job-submit -D enolID -r test06.egi.cesga.es:8443/cream-sge-dteam
test1.jdl
2011-12-01 15:30:31,416 WARN - No configuration file suitable for loading.
Using built-in configuration
https://test06.egi.cesga.es:8443/CREAM927198827
$ glite-ce-job-status https://test06.egi.cesga.es:8443/CREAM927198827
2011-12-01 15:33:56,594 WARN - No configuration file suitable for loading.
Using built-in configuration

***** JobID=[https://test06.egi.cesga.es:8443/CREAM927198827]
        Status      = [DONE-OK]
        ExitCode    = [0]
$ uberftp test06.egi.cesga.es
220 test06.egi.cesga.es GridFTP Server 3.33 (gcc64pthr, 1305148829-80) [Globus
Toolkit 5.0.3] ready.
230 User dteam060 logged in.
uberftp> cd
/var/cream_sandbox/dteam/_DC_es_DC_irisgrid_0_ifca_CN_Enol_Fernandez_delCastil
lo_dteam_Role_NULL_Capability_NULL_dteam060/92/CREAM927198827/OSB
uberftp> get *
std.out: 273 bytes in 0.11 seconds. 2.55 KB/sec
std.err: 0.10 seconds.
uberftp>
$ cat std.out
Hello from sa3-wn001.egee.cesga.es
Contents of /usr/local/sge/pro/default/spool/sa3-
wn001/active_jobs/153.1/pe_hostfile
sa3-wn001.egee.cesga.es 1 dteam@sa3-wn001.egee.cesga.es <NULL>
sa3-wn002.egee.cesga.es 1 dteam@sa3-wn002.egee.cesga.es <NULL>
*****
bye
```

Show status of all jobs:

```
$ glite-ce-job-status --all -e test06.egi.cesga.es
2011-12-01 15:41:21,868 WARN - No configuration file suitable for loading.
Using built-in configuration

***** JobID=[https://test06.egi.cesga.es:8443/CREAM073178118]
        Status      = [CANCELLED]
        ExitCode    = []
        Description = [Cancelled by user]
```



```
...
***** JobID=[https://test06.egi.cesga.es:8443/CREAM504132898]
        Status      = [DONE-OK]
        ExitCode     = [0]

***** JobID=[https://test06.egi.cesga.es:8443/CREAM840786846]
        Status      = [DONE-FAILED]
        ExitCode     = [N/A]
        FailureReason = [reason=127]
```

Purge jobs:

```
$ glite-ce-job-purge https://test06.egi.cesga.es:8443/CREAM943514290
2011-12-01 15:41:48,012 WARN - No configuration file suitable for loading.
Using built-in configuration

Are you sure you want to purge specified job(s) [y/n]: y
$ glite-ce-job-status https://test06.egi.cesga.es:8443/CREAM943514290
2011-12-01 15:42:08,543 WARN - No configuration file suitable for loading.
Using built-in configuration

***** JobID=[https://test06.egi.cesga.es:8443/CREAM943514290]
        For this job CREAM has returned a fault: MethodName=[jobStatus]
Timestamp=[Thu 01 Dec 2011 15:42:08] ErrorCode=[2] Description=[job not found]
FaultCause=[N/A]

$ glite-ce-job-purge --all -e test06.egi.cesga.es
2011-12-01 15:42:29,377 WARN - No configuration file suitable for loading.
Using built-in configuration

Going to purge all job from CE [https://test06.egi.cesga.es:8443//ce-cream/services/CREAM2]. Do you want to proceed [y/n]? y
$ glite-ce-job-status --all -e test06.egi.cesga.es
2011-12-01 15:42:43,756 WARN - No configuration file suitable for loading.
Using built-in configuration
```

Specific Functional Tests to be repeated in SR:

None

Specific Non-functional tests (Scalability, etc...) to be repeated in SR:

None

Comments for UMD QC definition (TSA2.2):

None

Comments for SR (TSA1.3):

Take into account known issues in configuration and GGUS ticket
https://ggus.eu/ws/ticket_info.php?ticket=76961

Comments for DMSU (TSA2.5):

No comments.

Comments for TP: None