

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

Name of the component	EMI.wms.sl5.x86_64_3.3.4		
Release	03/03/04	RT Ticket	3256
Software Provider	EMI		
Release Contact	Name:	E-Mail	
	Cristina Aiftimei	cristina.aiftimei@pd.infn.it	
Validator	Name:	E-Mail	
	Pablo Briongos	pablo.briongos@ific.uv.es	
V. Hours Worked	VERIFIED		
Component status	40h	Date	13 th January, 2012
Verification start date	12 th December, 2011	Verification end date	13 th January, 2012

Summary:

EMI.wms.sl5.x86_64-3.3.4 was successfully installed and configured from UMD repository without any important issue. Just to comment a few things regarding to many QCs:

- There's no test provided for the Messaging interface QC (MSG_IFACE_1)
- When you submit a DAG job, it never ends (“no matching resource” in status)
- When you submit 500 sequentially jobs, it fails at some point showing messages like “System load is too high”. This was tested on a virtual dual core-machine with 4Gb Ram.
- There's no test to check the directory traversal attack (GENERIC_SEC_2) and for checking the publishing in the service information (JOBSCH_SERVICE_2)
- SAML2.0 not supported yet.
- Institutional authentication not supported yet.
- The generic service probe is not fully completed. There's a few services without an implemented probe (HYDRA, L&B, etc...)
- The accounting records with full information for the action of users is difficult to retrieve from the L&B (ACC_JOBSCH_1)

The component was correctly verified with a few minor (not mandatory) QC problems.

GGUS Tickets:

None.

Summary of Quality Criteria verification:

	Generic Quality Criteria Total (Critical/Non critical)			
	Passed	Not passed	Not Applicable	Total
TP				
VLD	17	0	1	18
	Specific Quality Criteria			
TP	1	0	0	1
VLD	25	4	4	33

Quality Criteria verification cheatsheet:

Generic QC

GENERIC_DOC_1 (Functional Description)	Y	VLD	http://web.infn.it/gLiteWMS/index.php/techdoc/howtosandguides/57-archoverview
GENERIC_DOC_2 (Release Notes)	Y	VLD	In savannah ticket: https://savannah.cern.ch/task/?22847
GENERIC_DOC_5 (API Documentation)	Y	VLD	http://egee-jra1-wm.mi.infn.it/egee-jra1-wm/glite-wmproxy-api-index.shtml
GENERIC_DOC_6 (Administrator Documentation)	Y	VLD	http://wiki.italiangrid.org/twiki/bin/view/WMS/WMSAdministratorGuide
GENERIC_DOC_7 (Service Reference Card)	Y	VLD	http://wiki.italiangrid.org/twiki/bin/view/WMS/EMIWMSServiceRefCard
GENERIC_DOC_8 (Software License)	Y	VLD	http://wiki.italiangrid.org/twiki/bin/view/WMS/GLiteWMSLicence
GENERIC_DOC_9 (Release changes testing)	Y	VLD	https://twiki.cnaf.infn.it/twiki/bin/view/EgeeJra1It/WmsTestPlan#Regression_tests
GENERIC_DIST_1 (Source Code Availability)	Y	VLD	Source code and rpm's available in product page
GENERIC_DIST_2 (Source Distribution)	Y	VLD	Available in product page
GENERIC_DIST_3 (Binary Distribution)	Y	VLD	Available in product page
GENERIC_SERVICE_1 (Service control and status)	Y	VLD	Services starts/stops fine
GENERIC_SERVICE_2 (Log Files)	Y	VLD	Log files are correct and located under /var/log/
GENERIC_SERVICE_3 (Service Reliability)	Y	VLD	
GENERIC_SERVICE_4 (Service Robustness)	Y	VLD	
GENERIC_SERVICE_4 (Automatic Configuration)	Y	VLD	Yaim tool for configuration works fine
GENERIC_SEC_1 (World Writable Files)	Y	VLD	Tested with: rpm -qa grep glite xargs rpm -ql xargs --replace=filex find -L filex -perm -g=w
GENERIC_SEC_2 (Directory Traversal Attacks testing)	NA	VLD	Not known directory traversal vulnerability (no test provided)
GENERIC_MISC_2 (Bug Tracking System)	Y	VLD	TP enlisted has 3rd level support in GGUS

Security Capabilities QC

AUTHN_IFACE_1 (X.509 Certificate support)	Y	VLD	X.509 certificates accepted
AUTHN_IFACE_2 (SAML authentication)	NA	VLD	Not mandatory. SAML support not included
AUTHN_DELEG_1 (Delegation Interface)	Y	VLD	Delegation works fine, in this case, GridSite delegation. Automatic (-a) or delegating to an id (-d).
AUTHZ_PCYDEF_3 (Ban UserFQAN)	Y	VLD	Ban users goes fine. Specify ban politics in /etc/glite-wms/glite_wms_wmproxy_gacl
AUTHZ_PCYDEF_4 (Allowed users definition)	Y	VLD	FQAN and user DN policies can be defined
AUTHZ_PEP_1 (Policy Enforcement)	Y	VLD	Policies are enforced correctly
AUTHZ_PEP_2 (User Mapping)	Y	VLD	Gridmap file mapping OK

Information Capabilities QC

CREDMGMT_LINK_1 (Institutional Authentication Linking)	NA	VLD	Not mandatory. Not supported yet
INFOMODEL_SCHEMA_1 (GlueSchema Support)	Y	VLD	GlueSchema 1.3 supported
INFODISC_IFACE_1 (Information Discovery Interface)	Y	VLD	LDAP interface provided

Compute Capabilities QC

MSG_IFACE_1 (Messaging Interface)	N	VLD	No test provided by TP
JOBSCH_IFACE_1 (Job Scheduling Interface)	Y	VLD	gLite WMS all interface functionality tested OK
JOBSCH_EXEC_1 (Remote Job Management)	Y	VLD	
JOBSCH_EXEC_2 (Remote Resource Information)	Y	VLD	
JOBSCH_JOB_1 (Simple Job)	Y	VLD	
JOBSCH_JOB_2 (Simple Job with input/output files)	Y	VLD	
JOBSCH_JOB_3 (Cancel Job)	Y	VLD	
JOBSCH_JOB_4 (Parallel Job)	Y	VLD	
JOBSCH_JOB_5 (Job List Match)	Y	VLD	
JOBSCH_JOB_6 (Parametric Job Submission)	Y	VLD	Tested with org.glite.testsuites.ctb/WMS/WMS-service/WMS-job-parametric.sh
JOBSCH_JOB_7 (Job Collection Submission)	Y	VLD	Passed. View executive summary
JOBSCH_JOB_8 (DAG Submission)	N	VLD	Not mandatory. Test failed. There's a job which never ends (it keeps in waiting status with the reason: no matching resource)
JOBSCH_WMS_1 (Proxy Renewal)	Y	VLD	View executive summary
JOBSCH_WMS_2 (Job Resubmission)	Y	VLD	Tested with a org.glite.testsuites.ctb/WMS/WMS-service/WMS-job-resubmit.sh
JOBSCH_WMS_3 (JDL Acceptance Limits)	Y	VLD	Tested with a 30MB JDL file
JOBSCH_WMS_SEC_1 (Security Advisory 1502)	Y	TP	Reported to be fixed in https://savannah.cern.ch/patch/?4736
JOBSCH_SERVICE_1 (Error Messages)	Y	VLD	Troubleshooting: https://twiki.cern.ch/twiki/bin/view/LCG/GLiteWMSTroubleshooting and known issues http://glite.web.cern.ch/glite/packages/R3.1/deployment/glite-WMS/glite-WMS-known-issues.asp
JOBSCH_SERVICE_2 (Service Information)	N	VLD	Not mandatory. Test not provided
JOBSCH_SERVICE_3 (Self Disabling Mechanism)	Y	VLD	Read executive summary
JOBSCH_SERVICE_4 (Job Submission Peaks)	N	VLD	Not Mandatory. It fails running a script which launches 500 jobs sequentially in background. Error message: "System load is too high"
JOBSCH_SERVICE_5 (Timely Job Status Updates)	Y	VLD	Can do this executing glite-wms-job-status command. It doesn't show any relevant delays under high load conditions.

Operations Capabilities QC

MON_PROBE_GENERIC_2 (Service Probe)	NA	VLD	Not mandatory. As far as I know it's been developing probes for every service. Refers to https://savannah.cern.ch/task/?21823 . And state in: https://twiki.cern.ch/twiki/bin/view/EMI/NagiosProbes
MON_PROBE_JOBSCH_1 (WMS Probes)	Y	VLD	Test passed with Nagios WMS probe. View executive summary for log.
ACC_JOBSCH_1 (Job Scheduling Appliances Accounting)	NA	VLD	Not mandatory. It can be done with glite-wms-job-status with 1 singular job, but it's pretty difficult to retrieve all these information from LB

Validator comments:

Extra information and logging about some QC:

AUTHZ_PCYDEF_3 (Ban UserFQAN) -> The test consists in ban my own user (in /etc/glite-wms/glite_wms_wmproxy.gacl) and check I can't submit nothing:

```
-bash-3.2$ glite-wms-job-delegate-proxy -d $USER
```

Connecting to the service https://cg08.ific.uv.es:7443/glite_wms_wmproxy_server

Warning - Unable to delegate the credential to the endpoint:
https://cg08.ific.uv.es:7443/glite_wms_wmproxy_server

AuthorizationException: Authorization error: user not authorized

at checkGaclUserAuthZ()[/builddir/build/BUILD/glite-wms-wmproxy-3.3.4/build/./src/authorizer/wmpauthorizer.cpp:417]

at checkGaclUserAuthZ()[/builddir/build/BUILD/glite-wms-wmproxy-3.3.4/build/./src/authorizer/wmpauthorizer.cpp:282]

at authorize()[/builddir/build/BUILD/glite-wms-wmproxy-3.3.4/build/./src/authorizer/wmpauthorizer.cpp:150]

at getProxyReq()[/builddir/build/BUILD/glite-wms-wmproxy-3.3.4/build/./src/server/wmpoperations.cpp:627]

Switching to next WMPProxy Server...

Error - Operation failed

Unable to find any endpoint where to perform service request

INFOMODEL_SCHEMA_1 (GlueSchema Support) -> We use ldapsearch command to check that information published conforms to GlueSchema (v1.3 and/or v2):

```
[root@cg02 ~]# ldapsearch -h lcg2bdii.ific.uv.es -p 2170 -b "mds-vo-  
name=resource,o=grid" -x
```

```
# extended LDIF
```

```
#
```

```
# LDAPv3
```

```
# base <mds-vo-name=resource,o=grid> with scope subtree
```

```
# filter: (objectclass=*)
```

```
# requesting: ALL
```

```
#
```

```
# resource, grid
```

```
dn: Mds-Vo-name=resource,o=grid
```

```
objectClass: Mds
```

```
Mds-Vo-name: resource
```

```
# lcg2bdii.ific.uv.es_bdii_top_1813027130, resource, grid
```

```
dn: GlueServiceUniqueID=lcg2bdii.ific.uv.es_bdii_top_1813027130,Mds-Vo-name=re  
source,o=grid
```

```
GlueServiceStatus: OK
```

```
GlueServiceStatusInfo: BDII Runnning [ OK ]
```

```
objectClass: GlueTop
```

```
objectClass: GlueService
```

```
objectClass: GlueKey
```

```
objectClass: GlueSchemaVersion
```

```
GlueServiceUniqueID: lcg2bdii.ific.uv.es_bdii_top_1813027130
```

GlueServiceStartTime: 2011-09-27T17:18:17+02:00

GlueServiceEndpoint: ldap://lcg2bdii.ific.uv.es:2170/mds-vo-name=local,o=grid

GlueServiceVersion: 3.0.0

GlueSchemaVersionMinor: 3

GlueServiceName: IFIC-LCG2-bdii_top

GlueServiceType: bdii_top

GlueServiceSemantics: <https://twiki.cern.ch/twiki/bin/view/EGEE/BDII>

GlueForeignKey: GlueSiteUniqueID=IFIC-LCG2

GlueSchemaVersionMajor: 1

FCR-URL, lcg2bdii.ific.uv.es_bdii_top_1813027130, resource, grid

dn: GlueServiceDataKey=FCR-URL,GlueServiceUniqueID=lcg2bdii.ific.uv.es_bdii_top_1813027130,Mds-Vo-name=resource,o=grid

GlueSchemaVersionMajor: 1

objectClass: GlueTop

objectClass: GlueServiceData

objectClass: GlueKey

objectClass: GlueSchemaVersion

GlueSchemaVersionMinor: 3

GlueServiceDataKey: FCR-URL

GlueChunkKey: GlueServiceUniqueID=lcg2bdii.ific.uv.es_bdii_top_1813027130

GlueServiceDataValue: http://

glite-info-service_version, lcg2bdii.ific.uv.es_bdii_top_1813027130, resource, grid

dn: GlueServiceDataKey=glite-info-service_version,GlueServiceUniqueID=lcg2bdii
.ific.uv.es_bdii_top_1813027130,Mds-Vo-name=resource,o=grid

GlueSchemaVersionMajor: 1

objectClass: GlueTop

objectClass: GlueServiceData

objectClass: GlueKey

objectClass: GlueSchemaVersion

GlueSchemaVersionMinor: 3

GlueServiceDataKey: glite-info-service_version

GlueChunkKey: GlueServiceUniqueID=lcg2bdii.ific.uv.es_bdii_top_1813027130

GlueServiceDataValue: 1.5

glite-info-service_hostname, lcg2bdii.ific.uv.es_bdii_top_1813027130, resou
rce, grid

dn: GlueServiceDataKey=glite-info-service_hostname,GlueServiceUniqueID=lcg2bdi
i.ific.uv.es_bdii_top_1813027130,Mds-Vo-name=resource,o=grid

GlueSchemaVersionMajor: 1

objectClass: GlueTop

objectClass: GlueServiceData

objectClass: GlueKey

objectClass: GlueSchemaVersion

GlueSchemaVersionMinor: 3

GlueServiceDataKey: glite-info-service_hostname

GlueChunkKey: GlueServiceUniqueID=lcg2bdii.ific.uv.es_bdii_top_1813027130

GlueServiceDataValue: lcg2bdii.ific.uv.es

search result

search: 2

result: 0 Success

numResponses: 6

numEntries: 5

JOBSCH_JOB_7 (Job Collection Submission) => Tested with .jdl:

[Type = "collection";

Executable = "/bin/hostname";

VirtualOrganisation = "ific";

requirements = other.GlueCEInfoTotalCPUs >=30;

Rank = other.GlueCEStateFreeCPUs;

Nodes = { [JobType = "normal";

Executable = "/bin/hostname" ;

Arguments = "-f";

StdOutput = "job1.out";

StdError = "job1.err";

OutputSandbox = {"job1.err", "job1.out" };

],[JobType = "normal";

Executable = "/bin/hostname";

Arguments = "-f";

StdOutput = "job2.out";

StdError = "job2.err";

OutputSandbox = {"job2.err", "job2.out" };] };

```
]
```

JOBSCH_JOB_8 (DAG Submission) => Test failed (job in waiting status) with the next simple .jdl:

```
[ Type = "dag";  
Executable = "/bin/hostname";  
VirtualOrganisation = "ific";  
requirements = other.GlueCEInfoTotalCPUs >=30;  
Rank = other.GlueCEStateFreeCPUs;  
FuzzyRank = true;  
nodes = [nodeA = [Description = [Executable = "/bin/hostname" ;  
StdOutput = "jobA.out";  
StdError = "jobA.err";  
OutputSandbox = {"jobA.err", "jobA.out" }];  
];  
nodeB = [Description = [Executable = "/bin/hostname";  
];  
];  
dependencies = { { nodeA, nodeB } };  
];  
]
```

We retrieve the job status, and the job never ends:

```
-bash-3.2$ glite-wms-job-status  
https://cg07.ific.uv.es:9000/G8nsxD8e7ZUUYKuHfCKndw
```


=====
===== glite-wms-job-status Success
=====

BOOKKEEPING INFORMATION:

Status info for the Job : <https://cg07.ific.uv.es:9000/G8nsxD8e7ZUUYKuHfCKndw>

Current Status: Running

Status Reason: unavailable

Destination: dagman

Submitted: Wed Dec 21 12:49:22 2011 CET

=====
=====

- Nodes information for:

Status info for the Job : <https://cg07.ific.uv.es:9000/ZSCaednkeSFsQceG3w1jpQ>

Current Status: Waiting

Status Reason: no matching resource

Submitted: Wed Dec 21 12:49:22 2011 CET

=====
=====

Status info for the Job : <https://cg07.ific.uv.es:9000/IMRbLIFZq6H-vQ25erMcAA>

Current Status: Submitted

Submitted: Wed Dec 21 12:49:22 2011 CET

=====

JOBSCH_WMS_1 (Proxy Renewal) -> Test passed doing:
voms-proxy-init --voms ific -valid 0:4,

It generates a proxy of 4 minutes. I launch a job which executes in more than 4 minutes. The job is fully ended. If we stop the glite-proxy-renewd daemon, we can't submit a job because of "Proxy renewal registration failed".

JOBSCH_SERVICE_4 (Job Submission Peaks) -> Test failed running a script which launches 500 jobs sequentially in background. It crashes a lot of times with error messages like these:

Method: jobSubmit

Error - Operation failed

Unable to find any endpoint where to perform service request

Warning - Unable to submit the job to the service:
https://cg08.ific.uv.es:7443/glite_wms_wmproxy_server

System load is too high:

Threshold for Load Average(1 min): 22 => Detected value for Load Average(1 min):
110.42

Threshold for Load Average(5 min): 20 => Detected value for Load Average(5 min):
52.48

Threshold for Load Average(15 min): 18 => Detected value for Load Average(15 min):
20.64

MON_PROBE_JOBSCH_1 (WMS Probes) -> Test passed using Nagios. Metrics used:emi.wms.WMS-JobState; emi.wms.WMS-JobMonit; emi.wms.WMS-JobCancel
. The log:

```
-bash-3.2$ ./WMS-probe --vo ific -H cg08.ific.uv.es -m emi.wms.WMS-JobState
```

OK:

OK:

Testing from: cg02.ific.uv.es

DN: /DC=es/DC=irisgrid/O=ific/CN=Pablo.Briongos/CN=proxy

VOMS FQANs: /ific/Role=NULL/Capability=NULL

Connecting to the service https://cg08.ific.uv.es:7443/glite_wms_wmproxy_server

===== glite-wms-job-submit Success
=====

The job has been successfully submitted to the WMPProxy

Your job identifier is:

<https://cg07.ific.uv.es:9000/ZUmogfuLKqU3AYEIMd3MhA>

The job identifier has been saved in the following file:

`/var/lib/gridprobes/ific/emi.wms/WMS/cg08.ific.uv.es/jobID`

=====

```
-bash-3.2$ ./WMS-probe --vo ific -H cg08.ific.uv.es -m emi.wms.WMS-JobMonit  
--pass-check-dest active
```

metric results >>> <cg08.ific.uv.es,emi.wms.WMS-JobSubmit-ific>

OK: success.

glite-wms-job-output --noint --nosubdir --dir
/var/lib/gridprobes/ific/emi.wms/WMS/cg08.ific.uv.es/jobOutput
https://cg07.ific.uv.es:9000/ZUmogfuLKqU3AYEIMd3MhA 2>&1

Connecting to the service https://cg08.ific.uv.es:7443/glite_wms_wmproxy_server

Warning - option --nosubdir specified:

output files with same name will be overridden

Warning - Directory already exists:

/var/lib/gridprobes/ific/emi.wms/WMS/cg08.ific.uv.es/jobOutput

=====

JOB GET OUTPUT OUTCOME

Output sandbox files for the job:

https://cg07.ific.uv.es:9000/ZUmogfuLKqU3AYEIMd3MhA

have been successfully retrieved and stored in the directory:

/var/lib/gridprobes/ific/emi.wms/WMS/cg08.ific.uv.es/jobOutput

=====
metric results >>> <cg08.ific.uv.es,emi.wms.WMS-JobState-ific>

OK: success.

glite-wms-job-output --noint --nosubdir --dir
/var/lib/gridprobes/ific/emi.wms/WMS/cg08.ific.uv.es/jobOutput
https://cg07.ific.uv.es:9000/ZUmogfuLKqU3AYEIMd3MhA 2>&1

Connecting to the service https://cg08.ific.uv.es:7443/glite_wms_wmproxy_server

Warning - option --nosubdir specified:

output files with same name will be overridden

Warning - Directory already exists:

/var/lib/gridprobes/ific/emi.wms/WMS/cg08.ific.uv.es/jobOutput

=====
JOB GET OUTPUT OUTCOME

Output sandbox files for the job:

https://cg07.ific.uv.es:9000/ZUmogfuLKqU3AYEIMd3MhA

have been successfully retrieved and stored in the directory:

/var/lib/gridprobes/ific/emi.wms/WMS/cg08.ific.uv.es/jobOutput

=====
=====

OK: Jobs processed - 1

OK: Jobs processed - 1

Done : 1|jobs_processed=1;; DONE=1;; RUNNING=0;; SCHEDULED=0;;
SUBMITTED=0;; READY=0;; WAITING=0;; ABORTED=0;; CANCELLED=0;;
CLEARED=0;; MISSED=0;; UNDETERMINED=0;; unknown=0;1;2

-bash-3.2\$./WMS-probe --vo ific -H cg08.ific.uv.es -m emi.wms.WMS-JobCancel

OK: job cancelled

OK: job cancelled

Testing from: cg02.ific.uv.es

DN: /DC=es/DC=irisgrid/O=ific/CN=Pablo.Briongos/CN=proxy

VOMS FQANs: /ific/Role=NULL/Capability=NULL

Job cancellation request sent:

glite-wms-job-cancel --noint -i
/var/lib/gridprobes/ific/emi.wms/WMS/cg08.ific.uv.es/jobID

Job bookkeeping files deleted.

-bash-3.2\$ glite-wms-job-status
https://cg07.ific.uv.es:9000/oR9V2rnpv3QH3xUXozsxhw

=====
===== glite-wms-job-status Success
=====

BOOKKEEPING INFORMATION:

Status info for the Job : <https://cg07.ific.uv.es:9000/oR9V2rnpv3QH3xUXozsxhw>

Current Status: Canceled

Destination: ce05.ific.uv.es:8443/cream-pbs-long

Submitted: Fri Dec 16 13:11:48 2011 CET

=====
=====

Not applicable Quality Criteria

Specific Functional Tests to be repeated in SR:

Test number	Description	Motivation

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

Test number	Description	Motivation

Comments for UMD QC definition (TSA2.2):

Comments for SR (TSA1.3):

Comments for DMSU (TSA2.5):

Comments for TP:

-There aren't enough test suites to test the full QC's. It should indicate a test for each QC. The present test suites are decentralized and they should be centralized to automate the verification phase.