



EGI-InSPIRE

UMD INFORMATION CAPABILITIES QUALITY CRITERIA v3 DRAFT 2

Document identifier:	EGI-INFORMATION-QC-V3-DRAFT2.docx
Date:	26/01/2012
Document Link:	https://documents.egi.eu/document/718

Abstract

This document describes the Quality Criteria for the Information Capabilities identified in the UMD Roadmap.



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Document Log

Issue	Date	Comment	Author/Partner
1.0	19/01/2011	Reorganisation of criteria into UMD roadmap 2 groups.	Enol Fernández
1.3	09/02/2011	Review of criteria	Enol Fernández
2 DRAFT 1	20/06/2011	Update to new template, review of criteria. Add messaging.	Enol Fernández / Mario David
2	03/08/2011	Release 2. Review EMI input	E. Fernández
3 DRAFT 1	13/10/2011	First draft of release 3	Enol Fernández
3 DRAFT 2	24/01/2012	Second draft of release 3	Enol Fernández



TABLE OF CONTENTS

1	Information Model	4
1.1	Information Model Schema	4
	INFOMODEL_SCHEMA_1	4
	INFOMODEL_SCHEMA_2	5
2	Information Discovery	6
2.1	Information Discovery Interface	6
	INFODISC_IFACE_1	6
2.2	Information Discovery Functionality	7
2.2.1	Information Aggregation	7
	INFODISC_AGG_1	7
	INFODISC_AGG_2	8
	INFODISC_AGG_3	9
2.2.2	Availability/Scalability	10
	INFODISC_AVAIL_1	10
3	Messaging	11
	MSG_IFACE_1	11
4	References	12

1 INFORMATION MODEL

1.1 Information Model Schema

GlueSchema Support	
ID	INFOMODEL_SCHEMA_1
Description	Resource information exchanged in the EGI Infrastructure must conform to GlueSchema.
Mandatory	YES
Applicability	Information Model Appliances
Input from Technology Provider	Resource information published by Information Discovery Appliances must conform to the GlueSchema v1.3 and v2.0 (optionally). A test for the conformance of the information to the schema should be provided.
Test Description	<p>Pre-condition None.</p> <p>Test Check that information published conforms to GlueSchema (v1.3 and/or v2).</p> <p>Expected Outcome Information conforms to GlueSchema.</p>
Pass/Fail Criteria	Information published must be available in GlueSchema v1.3 and/or GlueSchema v2. (it is expected that all products transition to GlueSchema v2) Ideally the Technology Provider should assure this by a test suite of the appliances.
Related Information	UMD Roadmap [R 1] GlueSchema v1.3 [R 22] GlueSchema v2 [R 23]
Revision Log	V2: Merged INFOMODEL_SCHEMA_* into this criterion. Rephrasing.



Middleware Version Information	
ID	INFOMODEL_SCHEMA_2
Description	The middleware version must be published in the resource information.
Mandatory	NO
Applicability	Information Model Appliances
Input from Technology Provider	Resource information published by Information Discovery Appliances must include the version of the middleware.
Pass/Fail Criteria	Middleware version of service is published correctly by the service.
Related Information	Requirement #1378
Revision Log	

2 INFORMATION DISCOVERY

2.1 Information Discovery Interface

Information Discovery Interface	
ID	INFODISC_IFACE_1
Description	Information published by the appliance must be available through LDAPv3 protocol
Mandatory	YES
Applicability	Information Discovery Appliances
Input from Technology Provider	LDAP interface for getting the available information.
Test Description	Pre-condition Information Discovery Appliance is running Test Fetch information from Discovery Appliance using LDAPv3. Expected Outcome Information is retrieved correctly from server.
Pass/Fail Criteria	Information published must be available through LDAPv3 protocol.
Related Information	UMD Roadmap [R 1]
Revision Log	

2.2 Information Discovery Functionality

2.2.1 Information Aggregation

The Information Discovery services aggregate information from lower level sources of information in a hierarchical way. Appliances providing the Information Discovery Capability must be able to aggregate lower level sources of information and apply filter to that information

Information Filtering	
ID	INFODISC_AGG_1
Description	The information discovery service must be able to filter some of the data coming from information sources (e.g. do not publish information of a compute capability for a given VO)
Mandatory	NO
Applicability	Information Discovery Appliances
Input from Technology Provider	The Appliances must allow the definition of information filters (e.g. do not publish information of a CE for a given VO).
Test Description	Pre-condition Valid sources of information are available. Valid filter.
	Test Filter sources according to filter.
	Expected Outcome Output filtered information
	Pre-condition Valid sources of information are available. Invalid filter.
	Test Filter sources according to filter.
	Expected Outcome Error message stating that the information cannot be filtered.
	Expected Outcome Output unfiltered information.
Pass/Fail Criteria	The administrator must be able to define filters for the information that gets published by the appliance. The appliance defines the format and syntax for the filters.
Related Information	UMD Roadmap [R 1]
Revision Log	V2: Rephrase, turned to non-mandatory.

Information Aggregation	
ID	INFODISC_AGG_2
Description	The information discovery service must be able to collect data from different sources and aggregate them in a single source of information.
Mandatory	YES
Applicability	Information Discovery Appliances
Input from Technology Provider	Support for the aggregation of different sources of information into the appliance (e.g. aggregation of several site-BDII in the top-BDII)
Test Description	<p>Pre-condition Set of valid information service sources available and correct.</p> <p>Test Aggregate information from sources</p> <p>Expected Outcome Output aggregated information</p>
	<p>Pre-condition Set of valid information service sources available, at least one incorrect (e.g. not GlueSchema compliant)</p> <p>Test Aggregate information from sources</p> <p>Expected Outcome Output aggregated information without incorrect source. Show a warning message.</p>
	<p>Pre-condition Set of valid information service sources, at least one unreachable</p> <p>Test Aggregate information from sources</p> <p>Expected Outcome Output aggregated information without unreachable source. Show a warning message.</p>
Pass/Fail Criteria	The appliance must aggregate several sources of information. When one of them presents errors or is unreachable, others still must be published. Update interval for sources must be configurable.
Related Information	UMD Roadmap [R 1]
Revision Log	

Dynamic Information Aggregation	
ID	INFODISC_AGG_3
Description	The information discovery service must be able to publish dynamic information at resource level.
Mandatory	YES
Applicability	Information Discovery Appliances
Input from Technology Provider	Support for the collection of dynamic information (e.g. number of running jobs, space available on disk, etc). The update interval should be configurable.
Test Description	Pre-condition Set of valid information service sources available and correct. Test Aggregate information from sources Expected Outcome Output aggregated information
	Pre-condition Set of valid information service sources available, at least one incorrect (e.g. not GlueSchema compliant) Test Aggregate information from sources Expected Outcome Output aggregated information without incorrect source. Show a warning message.
	Pre-condition Set of valid information service sources, at least one unreachable Test Aggregate information from sources Expected Outcome Output aggregated information without unreachable source. Show a warning message.
Pass/Fail Criteria	The appliance must aggregate several sources of information. When one of them presents errors or is unreachable, others still must be published. Update interval for sources must be configurable.
Related Information	UMD Roadmap [R 1]
Revision Log	

2.2.2 Availability/Scalability

Top Information System Size	
ID	INFODISC_AVAIL_1
Description	Central Information Discovery appliances must be able to handle information about the whole EGI.eu infrastructure (which may contain several hundred sites)
Mandatory	YES
Applicability	Information Discovery Appliances
Input from Technology Provider	Limit of size of the data handled by the service should be enough to cover the whole EGI.eu Infrastructure. Documentation on how to tune the service in order support large data sizes.
Test Description	<p>Pre-condition Correctly configured service.</p> <p>Test Add information from all EGI.eu Infrastructure.</p> <p>Expected Outcome Appliance is able to aggregate all the information and responds to clients.</p>
Pass/Fail Criteria	Pass if the appliance is able to handle the global EGI.eu Infrastructure information.
Related Information	UMD Roadmap [R 1]
Revision Log	V2: major rephrasing V3: better wording

3 MESSAGING

Messaging Interface	
ID	MSG_IFACE_1
Description	Messaging Appliances must support (at least one of) the interfaces currently in production in the EGI Infrastructure or identified by the UMD Roadmap
Mandatory	YES
Applicability	Messaging Appliances
Input from Technology Provider	Support for at least one of the EGI requested messaging interfaces. Ideally, provide a test suite that assured the support of those interfaces, that checks for all functions, both correct and invalid input. Any deviation from the messaging interface specification must be documented.
Test Description	<p>Pre-condition Messaging Appliance configured</p> <p>Test Test all interface functionality, with correct/incorrect input.</p> <p>Expected Outcome Log of all the operations performed. All the documented functions work as documented.</p>
Pass/Fail Criteria	<p>The Messaging Appliance that claims to support an interface must have support of that interface. Any deviation from the interface specification must be documented.</p> <p>At least one of the following interfaces must be supported:</p> <ul style="list-style-type: none"> • JMS 1.1 [R 24] • AMQP [R 25]
Related Information	UMD Roadmap [R 1]
Revision Log	V3: rephrasing not to require tests.

4 REFERENCES

R 1	UMD roadmap: https://documents.egi.eu/public/ShowDocument?docid=100
R 2	Web Services Data Access and Integration – The Relational Realisation (WS-DAIR) Specification, Version 1.0
R 3	Web Services Data Access and Integration – The XML Realization (WS-DAIX) Specification, Version 1.0
R 4	OGSA-DAI: http://www.ogsadai.org.uk/
R 5	gLite LFC: https://twiki.cern.ch/twiki/bin/view/EGEE/GliteLFC
R 6	AMGA: http://amga.web.cern.ch/amga/
R 7	AMGA WSDL: http://amga.web.cern.ch/amga/downloads/Metadata.wsdl
R 8	AMGA streaming API: http://amga.web.cern.ch/amga/protocol.html
R 9	AMGA Metadata Queries: http://amga.web.cern.ch/amga/queries.html
R 10	A. Konstantinov, ARC Computational Job Management Component – A-REX, NORDUGRID-TECH-14
R 11	CREAM: http://grid.pd.infn.it/cream/
R 12	EMI-ES: https://twiki.cern.ch/twiki/bin/view/EMI/EmiExecutionService
R 13	GRAM5: http://www.globus.org/toolkit/docs/latest-stable/execution/gram5/
R 14	OGF DRMAA: http://www.drmaa.org/
R 15	OGSA Basic Execution Service v1.0: http://www.ogf.org/documents/GFD.108.pdf
R 16	UNICORE UAS: http://www.unicore.eu/unicore/architecture/service-layer.php#anchor_uas
R 17	gLite WMS: http://web.infn.it/gLiteWMS/
R 18	SAGA-CORE-WG: A Simple API for Grid Applications (SAGA) v1.0 (GFD.90)
R 19	SAGA (A Simple API for Grid Applications): http://saga.cct.lsu.edu/
R 20	Instrument Element: http://www.dorii.eu/resources/adaptation:middleware:IE
R 21	DORII (Deployment of Remote Instrumentation Infrastructure) Project: http://www.dorii.eu/
R 22	GlueSchema Specification v1.3: http://glueschema.forge.cnaf.infn.it/Spec/V13

R 23	GlueSchema Specification v2.0: http://www.ogf.org/documents/GFD.147.pdf
R 24	JMS (Java Message Service Specification) 1.1: http://www.oracle.com/technetwork/java/jms/index.html
R 25	AMQP (Advanced Message Queuing Protocol): http://www.amqp.org/confluence/display/AMQP/Advanced+Message+Queuing+Protocol
R 26	Nagios Config Generator: https://tomtools.cern.ch/confluence/display/SAM/NCG
R 27	My EGI portal: https://tomtools.cern.ch/confluence/display/SAM/MyEGI
R 28	SAM Probes Documentation: https://tomtools.cern.ch/confluence/display/SAM/Probes
R 29	Accounting Portal: http://accounting.egi.eu/
R 30	GridSite Delegation Protocol: http://www.gridsite.org/wiki/Delegation_protocol
R 31	Globus Delegation Service: http://www.globus.org/toolkit/docs/4.0/security/delegation/
R 32	European Policy Management Authority for Grid Authentication (EuGridPMA): http://www.eugridpma.org/
R 33	ARGUS Authorization Service: https://twiki.cern.ch/twiki/bin/view/EGEE/AuthorizationFramework
R 34	XACML: http://docs.oasis-open.org/xacml/2.0/access_control-xacml-2.0-core-spec-os.pdf
R 35	Hydra encrypted file storage: https://twiki.cern.ch/twiki/bin/view/EGEE/DMEDS
R 36	gLite FTS: https://twiki.cern.ch/twiki/bin/view/EGEE/GLiteFTS
R 37	SRM v2.2: http://www.ggf.org/documents/GFD.129.pdf
R 38	S2 Test: http://s-2.sourceforge.net/
R 39	SRM-Tester: https://sdm.lbl.gov/twiki/bin/view/Software/SRMTester/WebHome
R 40	Lcg-utils: http://grid-deployment.web.cern.ch/grid-deployment/documentation/LFC_DPM/lcg_util/
R 41	Lcg-utils test suite: http://glite.cvs.cern.ch/cgi-bin/glite.cgi/org.glite.testsuites.ctb/UI/tests/test-lcg-utils.sh?view=markup
R 42	Open Cloud Computing Interface WG, OGF, http://www.ggf.org/gf/group_info/view.php?group=occi-wg
R 43	Virtualization Management (VMAN), DMTF http://www.dmtf.org/standards/vman