
*** EMI Test Report ***

- Component: ARC Clients
- Savannah task: <https://savannah.cern.ch/task/?18578>
- ETICS Configuration Name: emi-nordugrid-arc_R_1_0_0_b3, emi-nordugrid-arc-compatible_R_1_0_0_b2
- VCS Tag: 1.0.0b3
- EMI Major Release: EMI-1 RC1
- Platform: SL5/64bit
- Author: Marek Kocan
- Date: 18.03.2011

*** Summary ***

1. Deployment tests:
 - 1.1. Clean Installation - PASS
 - 1.2. Upgrade Installation - NA
2. Static Code Analysis - YES
3. Unit Tests Execution - YES
4. Regression tests - PASS
5. Functionality tests - PASS
6. Performance tests - PASS
7. Scalability tests - NA
8. Standard compliance/conformance test - NA

REMARKS:

- During this test cycle Deployment upgrade, Performance, Standard conformance and Scalability tests were not performed
- Because of bug 2256 (http://bugzilla.nordugrid.org/cgi-bin/bugzilla/show_bug.cgi?id=2256) and 2287(http://bugzilla.nordugrid.org/cgi-bin/bugzilla/show_bug.cgi?id=2287) the ARC Clients installed from Etics repository do not work with pre-WS ARC CE. In order to proceed with tests of ARC Clients a workaround proposed in bug reports was used.
- 11 out of the 11 performed functionality tests passed.

Detailed Testing Report

Hardware Resource used:

Hostname: pgs03.grid.upjs.sk
CPU: AMD Athlon 64 Processor 3500+
Memory: 1GB
Hard Drive: 70GB
Network: 100 Mb/s
Machine type: physical machine

1. Deployment tests

1.1. Clean Installation

- YUM Testing Repo file contents:

*Etics repo:
[etics-rc1]
name=ETICS RC1

```
baseurl=http://emisoft.web.cern.ch/emisoft/dist/EMI/1/RC1/s  
15/x86_64
```

```
enabled=1
```

```
protect=1
```

* Epel repo:

```
[epel]
```

```
name=Extra Packages for Enterprise Linux 5 - $basearch
```

```
#baseurl=http://download.fedoraproject.org/pub/epel/5/$base  
arch
```

```
mirrorlist=http://mirrors.fedoraproject.org/mirrorlist?repo  
=epel-5&arch=$basearch
```

```
failovermethod=priority
```

```
enabled=1
```

```
gpgcheck=1
```

```
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-EPEL
```

- YUM Install command:

```
yum install nordugrid-arc-client nordugrid-arc-compat nordugrid-arc-  
compat-debuginfo
```

- YUM log:

Installed:

```
nordugrid-arc-client.x86_64 0:1.0.0b3-1.e15
```

```
nordugrid-arc-compat.x86_64 0:201102180316-1.e15
```

```
nordugrid-arc-compat-debuginfo.x86_64 0:1.0.0b2-1.e15
```

Dependency Installed:

```
glibmm24.x86_64 0:2.12.10-1.e15
```

```
globus-callout.x86_64 0:0.7-6.e15
```

globus-common.x86_64 0:11.6-1.e15
globus-ftp-client.x86_64 0:6.0-1.e15
globus-ftp-control.x86_64 0:2.11-1.e15
globus-gsi-callback.x86_64 0:2.8-1.e15
globus-gsi-cert-utils.x86_64 0:6.7-1.e15
globus-gsi-credential.x86_64 0:3.5-1.e15
globus-gsi-openssl-error.x86_64 0:0.14-6.e15
globus-gsi-proxy-core.x86_64 0:4.7-1.e15
globus-gsi-proxy-ssl.x86_64 0:2.3-1.e15
globus-gsi-sysconfig.x86_64 0:3.1-1.e15
globus-gss-assist.x86_64 0:5.9-2.e15
globus-gssapi-error.x86_64 0:2.5-5.e15
globus-gssapi-gsi.x86_64 0:7.6-1.e15
globus-io.x86_64 0:6.3-4.e15
globus-libtool.x86_64 0:1.2-4.e15
globus-openssl.x86_64 0:5.1-2.e15
globus-openssl-module.x86_64 0:1.3-1.e15
globus-rls-client.x86_64 0:5.2-2.e15
globus-rsl.x86_64 0:7.2-1.e15
globus-xio.x86_64 0:2.8-2.e15
globus-xio-gsi-driver.x86_64 0:0.6-5.e15
globus-xio-popen-driver.x86_64 0:0.9-1.e15
gsoap.x86_64 0:2.7.13-3.e15
lcgdm.x86_64 0:1.8.0.1-3.e15
lcgdm-libs.x86_64 0:1.8.1-0sec.sl5
lfc-libs.x86_64 0:1.8.1-0sec.sl5
libsigc++20.x86_64 0:2.0.18-1.e15
libtool-ltdl.x86_64 0:1.5.22-7.e15_4

```
libxslt.x86_64 0:1.1.17-2.el5_2.2
nordugrid-arc.x86_64 0:1.0.0b3-1.el5
nordugrid-arc-plugins-needed.x86_64 0:1.0.0b3-1.el5
voms.x86_64 0:2.0.0-1.s15
voms-compat.x86_64 0:1.9.19.2-1.el5
xmlsec1.x86_64 0:1.2.9-8.1.1
xmlsec1-openssl.x86_64 0:1.2.9-8.1.1
```

Result: PASSED

1.2. Upgrade Installation

The test was not performed during this testing cycle.

2. Static Code Analysis

The Static Code Analysis results were produced for entire ARC code, therefore this section contains identical information for all the ARC components. Later the results will be split between components. The Static Code Analysis tools used were Sloccount and CCCC.

* Sloccount

cpp	136167 (74.26%)
perl	18590 (10.14%)
php	13007 (7.09%)
python	10545 (5.75%)
sh	4199 (2.29%)
ansic	798 (0.44%)
java	63 (0.03%)

The complete results of SLOC count entire ARC code can be found here

http://testbed1.grid.upjs.sk/static_code_analysis/nordugrid-arc-1.0.0b3.sloccount

*** CCCC metrics**

Metric	Tag	Overall	Per Module
Number of modules	NOM	890	
Lines of Code	LOC	106028	119.133
McCabe's Cyclomatic Number	MVG	30720	34.517
Lines of Comment	COM	12674	14.240
LOC/COM	L_C	8.366	
MVG/COM	M_C	2.424	
Information Flow measure (inclusive)	IF4	618184	694.589
Information Flow measure (visible)	IF4v	618047	694.435
Information Flow measure (concrete)	IF4c	3341	3.754
Lines of Code rejected by parser	REJ	3197	

The complete results for CCCC for entire ARC code can be found at http://testbed1.grid.upjs.sk/static_code_analysis/nordugrid-arc-1.0.0b3.cccc/

3. Unit Tests

The Unit Tests coverage was evaluated for entire ARC code, therefore this section contains identical information for all the ARC components. Later the results will be split between components.

	Hit	Total	Coverage
Lines	9418	71822	13.1%
Functions	1495	10097	14.8%
Branches	5707	22457	25.4%

Results of unit test code coverage for entire ARC code can be found at <http://hep.nbi.dk/~waanenen/nordugrid/20781/>

4 Regression tests

The verification of critical and blocker resolved bugs:

* **R1** Python bindings are broken since operator = is not handled correctly (http://bugzilla.nordugrid.org/cgi-bin/bugzilla/show_bug.cgi?id=2228)

- **Scenario description:**

Run python script proposed in bug report

- **Testbed:**

Python library used from resource described above.

- **Expected result:**

The python script executes successfully

- Result: **PASSED**

* **R2** Incompatibility between ngsb and arcsb XRSL parser (http://bugzilla.nordugrid.org/cgi-bin/bugzilla/show_bug.cgi?id=2222)

- **Scenario description:**

Create XRSL job description using stdout, stderr and join options. Dryrun the job description using ngsb and arcsb commands

- **Testbed:**

Arcsb/ngsb issued from resource described above.

- **Expected result:**

The dryrun shall report parse error

- Result: **PASSED**

* **R3** Occasional seg faults at the end of arcstat
(http://bugzilla.nordugrid.org/cgi-bin/bugzilla/show_bug.cgi?id=2202)

- **Scenario description:**

Repeat following cycle 10 times:

- submit 5 simple jobs
- wait 120 seconds
- query the job status

- **Testbed:**

Arcstat issued from resource described above.

- **Expected result:**

The arcstat command shall always return correct job statuses and no seg faults shall be observed

- Result: **PASSED**

* **R4** Configuration issues with arc* commands when using ARC0 target (http://bugzilla.nordugrid.org/cgi-bin/bugzilla/show_bug.cgi?id=2173)

- **Scenario description:**

Move the usercert, userkey and ca certificate to non standard directory. Update client.conf file according to new locations of usercert, userkey and client.conf. Generate a proxy certificate. Submit a simple job to pre-WS ARC CE

- **Testbed:**

Arcsub issued from resource described above. Pre-WS ARC CE service taken from EMI testbed.

- **Expected result:**

The job is submitted successfully and no request to enter password is displayed

- Result: **PASSED**

* **R5** Cryptic error when trying to access ARC0 resource using arc* tools (http://bugzilla.nordugrid.org/cgi-bin/bugzilla/show_bug.cgi?id=2172)

- **Scenario description:**

Submit simple job to pre-WS ARC CE using arcsub command. Query the status using arcstat and retrieve the results using arcget

- **Testbed:**

Arcsub/arcstat/arcget issued from resource described above. Pre-WS ARC CE service taken from EMI testbed.

- **Expected result:**

All actions shall end successfully

- Result: **PASSED**

5 Functionality tests

F1: Job submission

F1.1: Job submission to pre-WS ARC CE using arcsub and XRSL job description language

Description of the test:

Create simple job in XRSL format and submit it to pre-WS ARC CE using arcsub command (manual test). XRSL job description can be found at http://vls.grid.upjs.sk/testing/job_descriptions/get_hostname_xrsl.html.

Testbed:

Arcsub issued from resource described above, pre-WS ARC CE service taken from EMI testbed

Expected result:

The job is successfully submitted

Result: **PASSED**

F1.2: Job submission to pre-WS ARC CE using arctsub and JSDL job description language

Description of the test:

Create simple job in JSDL format and submit it to pre-WS ARC CE using arctsub command (manual test). JSDL job description can be found at http://vls.grid.upjs.sk/testing/job_descriptions/get_hostname.html.

Testbed:

Arctsub issued from resource described above, pre-WS ARC CE service taken from EMI testbed

Expected result:

The job is successfully submitted

Result: **PASSED**

F1.3: Job submission to pre-WS ARC CE using arctsub and JDL job description language

Description of the test:

Create simple job in JDL format and submit it to pre-WS ARC CE using arctsub command. (manual test). JDL job can be found at http://vls.grid.upjs.sk/testing/job_descriptions/get_hostname_jdl.html

Testbed:

Arctsub issued from resource described above, pre-WS ARC CE service taken from EMI testbed

Expected result:

The job is successfully submitted

Result: **PASSED**

F1.4: Job submission to pre-WS ARC CE using ngsub and XRSL job description language

Description of the test:

Create simple job in XRSL format and submit it to pre-WS ARC CE using ngsub command (manual test).

Testbed:

Ngsub issued from resource described above, pre-WS ARC CE service taken from EMI testbed

Expected result:

The job is successfully submitted

Result: **PASSED**

F1.5: Job submission to pre-WS ARC CE using ngsub and JSDL job description language

Description of the test:

Create simple job in JSDL format and submit it to pre-WS ARC CE using ngsub command (manual test).

Testbed:

Ngsub issued from resource described above, pre-WS ARC CE service taken from EMI testbed

Expected result:

The job is successfully submitted

Result: **PASSED**

F2: Job and Cluster querying

F2.1: Query the job status submitted to pre-WS ARC CE using arcstat command

Description of the test:

Create simple job in XRSL format and submit it to pre-WS ARC CE using arcsub command. Wait 120 seconds. Query the job status using arcstat command.

Testbed:

Arcsub/arcstat issued from resource described above, pre-WS ARC CE service taken from EMI testbed

Expected result:

The job is successfully queried

Result: **PASSED**

F2.2: Query the job status submitted to pre-WS ARC CE using ngstat command

Description of the test:

Create simple job in XRSL format and submit it to pre-WS ARC CE using ngsb command. Wait 120 seconds. Query the job status using ngstat command.

Testbed:

Ngsb/ngstat issued from resource described above, pre-WS ARC CE service taken from EMI testbed

Expected result:

The job is successfully queried

Result: **PASSED**

F3: Retrieval of job results

F3.1: Retrieve the results of successfully finished job submitted to pre-WS ARC CE using arcget command

Description of the test:

Create simple job in XRSL format and submit it to pre-WS ARC CE using arcsb command. Wait until the job is successfully finished (verify it using arcstat command). Retrieve the results of finished job using arcget command.

Testbed:

Arcsb/arcstat/arcget issued from resource described above, pre-WS ARC CE service taken from EMI testbed

Expected result:

The job results are successfully retrieved

Result: **PASSED**

F3.2: Retrieve the results of successfully finished job submitted to pre-WS ARC CE using ngget command

Description of the test:

Create simple job in XRSL format and submit it to pre-WS ARC CE using ngsub command. Wait until the job is successfully finished (verify it using ngstat command). Retrieve the results of finished job using ngget command.

Testbed:

Ngsub/ngstat/ngget issued from resource described above, pre-WS ARC CE service taken from EMI testbed

Expected result:

The job results are successfully retrieved

Result: **PASSED**

F4: Removal of jobs from target

F4.1: Removal of finished job from pre-WS ARC CE using arcclean command

Description of the test:

Create simple job in XRSL format and submit it to pre-WS ARC CE using arcsub command. Wait until the job is successfully finished (verify it using arcstat command). Issue an arcclean command with jobID as parameter. Query the job status using arcstat command

Testbed:

Arcsub/arcstat/arcclean issued from resource described above, pre-WS ARC CE service taken from EMI testbed

Expected result:

The second job status query shall return a warning that the job is no longer available

Result: **PASSED**

F4.2: Removal of finished job from pre-WS ARC CE using ngclean command

Description of the test:

Create simple job in XRSL format and submit it to pre-WS ARC CE using ngsb command. Wait until the job is successfully finished (verify it using ngstat command). Issue an ngclean command with jobID as parameter. Query the job status using ngstat command

Testbed:

Ngsb/ngstat/ngclean issued from resource described above, pre-WS ARC CE service taken from EMI testbed

Expected result:

The second job status query shall return a warning that the job is no longer available

Result: **PASSED**

6 Performance tests

The test was not performed during this testing cycle.

7 Scalability tests

The test was not performed during this testing cycle.

8 Standard Compliance/Conformance tests

The test was not performed during this testing cycle.