



Enabling Grids for E-science

Short report on basic IPv6 testing

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EGEE SA2

EUChinaGRID WP2

www.eu-egee.org

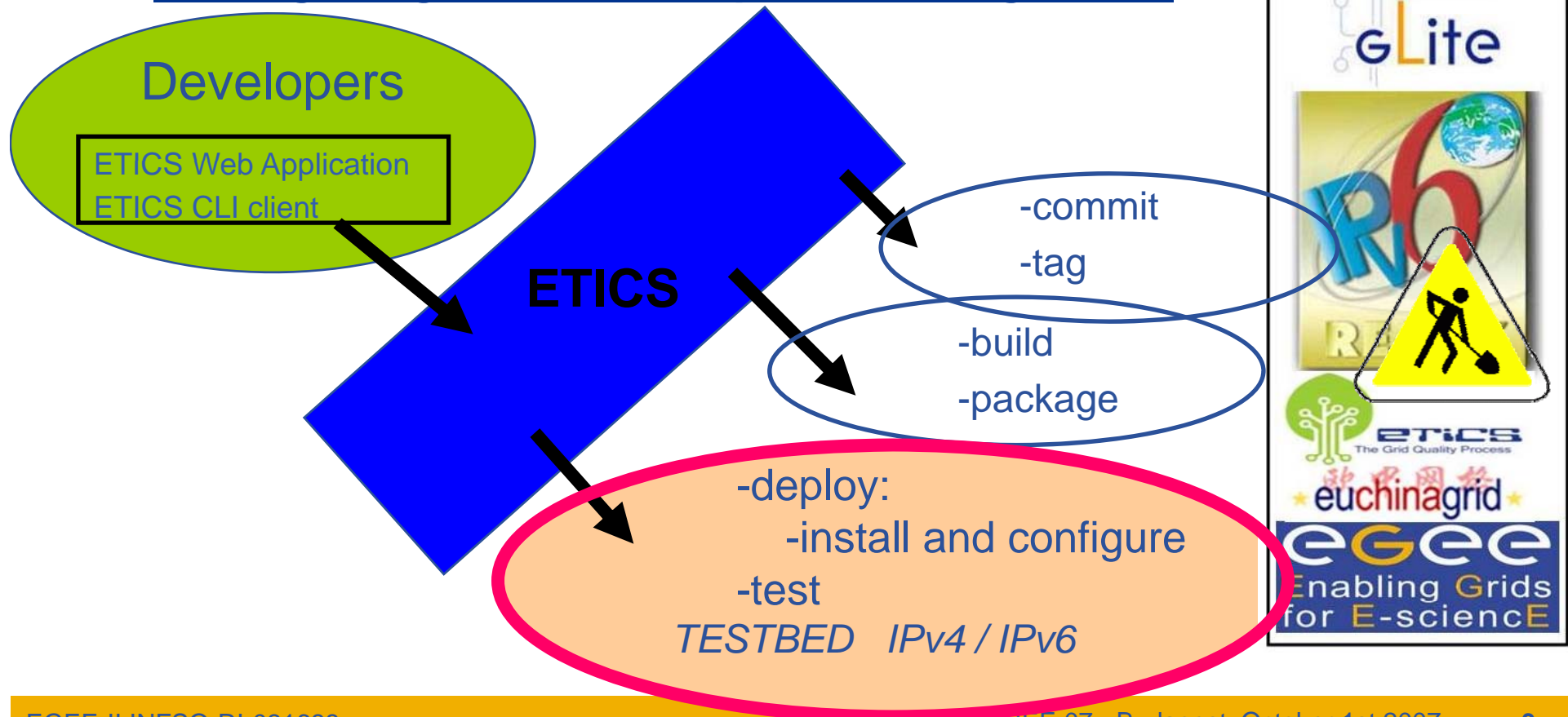


Information Society
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- **Introduction: focus of this talk and context**
 - Reminder : definition of IPv6 compliance
- **Current status of tools and testbed**
 - ETICS web services
 - Web Application
 - CLI client
 - test scripts
 - testbed and IPv6 networking
- **Results**
 - Current tests outcomes
- **Issues & Conclusions**

- Current status of the verification of the work path defined by a collaboration from ETICS, EUChinaGRID WP2 and EGEE SA2 (“E/E/E” – started ~ 6 months ago) :
 - Testing the gLite IPv6 compliance using ETICS



- Use all the **Quality Assurance** features of ETICS
 - Unique process accessing the code, submitting test jobs, producing reports on the results – accessible via the ETICS web service
- **Prototype** what gLite developers will have to be doing at some stage (if IPv6 is finally officially endorsed at some point)
 - Using **the natural tool** provided to them to build and test
- Access a **distributed infrastructure** providing **IPv6** and **IPv4**
- Allowing for a **gradual approach**
 - **2 limit scenarios** envisaged:
 - A basic ETICS test job access an already installed IPv6-capable testbed
 - A global ETICS job deploys all required services, installs and configures them, performs functional tests, report results
- What is currently a **specific ETICS project** on the gLite IPv6 compliance could in future turn into **a set of standard IPv6 tests for the gLite components** attached to the org.glite project - for gLite subsystems and components

- **Services should be deployable under IPv6**
 - install, configure, start correctly
- **Provided functionality using IPv6 should be undistinguishable from the IPv4 one**

namely:
- **We say that a gLite component is fully IPv6 compliant if:**
 - In all its sub-component modules (its lines of code) **there are no non-IPv6 compliant calls (there are no non-RFC 3493 compliant calls)**
 - for example, there are no hard-coded IP addresses in the code ☺
 - The provided functionality and operation of the component in all its parts (server,client, API,..) is **exactly the same** w.r.t.the one provided if the component is deployed using IPv4 – **and – this being the case – the original IPv4 functionality is not broken nor affected in any way by the IPv6 compliance**

[see EGEE-II-SA2-TEC-810278 section 5 -

https://edms.cern.ch/file/810278/1/EGEE-II-SA2-TEC-810278-IPv6_test_methodology-v2.8.pdf]

- ETICS client **1.2.2-1** installed at GARR and CERN
- ETICS project **gLite ipv6 compliance** running
 - **org.glite.testsuites.ipv6** reference test components
 - A couple of *configurations* to perform different tasks
- IPv6 NMI (Metronome) pool with 1 node on the ETICS production pool (*right now 1, normally 3*)
 - Dual stack nodes
 - To allow for IPv6
 - To be included in the NMI Metronome pool (IPv4 required)
 - Can reach both the NAT-PT gateways in Paris(UREC) and Rome (GARR)
 - *To perform specific, Client/Server dedicated tests*

- **E/E/E Testbed**
 - 3 sites
 - CERN
 - *ETICS server / CLI client*
 - *Full set of nodes in the NMI/Metronome pool*
 - No IPv6 connectivity still ☹
 - UREC
 - *Top level BD-II*
 - *NAT-PT protocol translator*
 - IPv6 connectivity
 - GARR
 - *ETICS CLI client*
 - *NAT-PT protocol translator*
 - *Complete gLite testbed for prototypal test*
 - LFC and DPM currently being added
 - IPv6 connectivity

- **UI deployment via ETICS NMI / Metronome job**
 - Successful deployment in user space of a gLite 3.0 UI on a SLC 3.0.8 node
 - No need for root privileges –using 2 CVS scripts
 - *ui-tarball-generator*
 - *quick-ui.sh*
 - gLite 3.1 UI on SLC 4 still untested

- **BD-II deployment via ETICS NMI/Metronome job**
 - Script ready.
 - Requires root privileges : waiting to get the “run as root” flag fully operational
 - *Preliminary tests on going while we’re speaking...*

- **Successfully tested the IPv6 compliant BD-II through NAT-PT**
 - Directly via client Idapsearch query
 - Through the WMS node
 - glite-job-list-match providing all visible published resources (CEs)
- **First steps in the validation of the testing methodology for the gLite IPv6 compliance assessment carried out**
 - NAT-PT and the BD-II server
 - Preliminary WMS/Workload Management (CE,WN,UI) tests showed uncompliance in both deployment and functionality

- **How to delete via CLI a job submitted via WebApp ?**
 - tomcat4_lxmrrb3703.cern.ch_1190919892_24931 NMI GID
 - 7035e1f1-a03e-41f0-9bb8-898a67b60a66 ETICS CLI ID
 - An open question to the experts here.

- **Full operation of the “run as root” flag**
 - Being taken care of right now. First results seem positive 😊 but need more testing

- **Co-scheduling (DICOM) still untested by us**
 - Need an update on the status

- **The basic paradigm behind the E/E/E collaboration proved to be right and useful**
 - Gathering efforts and resources to boost as much as possible IPv6 usage within the gLite community and IPv6 compliance in the middleware
- **Much progress since when we started 😊**
 - IPv6 flag operational
 - “run as root” about to become operational
- **A lot of useful further improvements to be implemented and tested in the scope of this activity**
 - co-scheduling
 - extend the assessment of IPv6 compliance of other gLite components