eTICS2
The Grid Quality Process

European Commission
Information Society and Media

INFSO-RI-223782

Module 01

ETICS Overview

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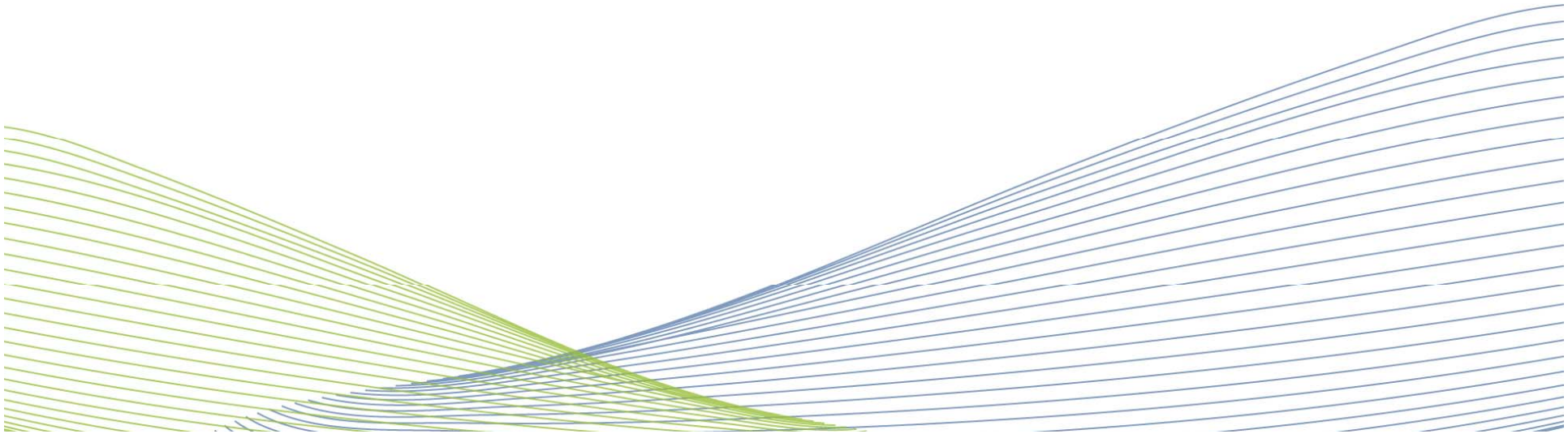


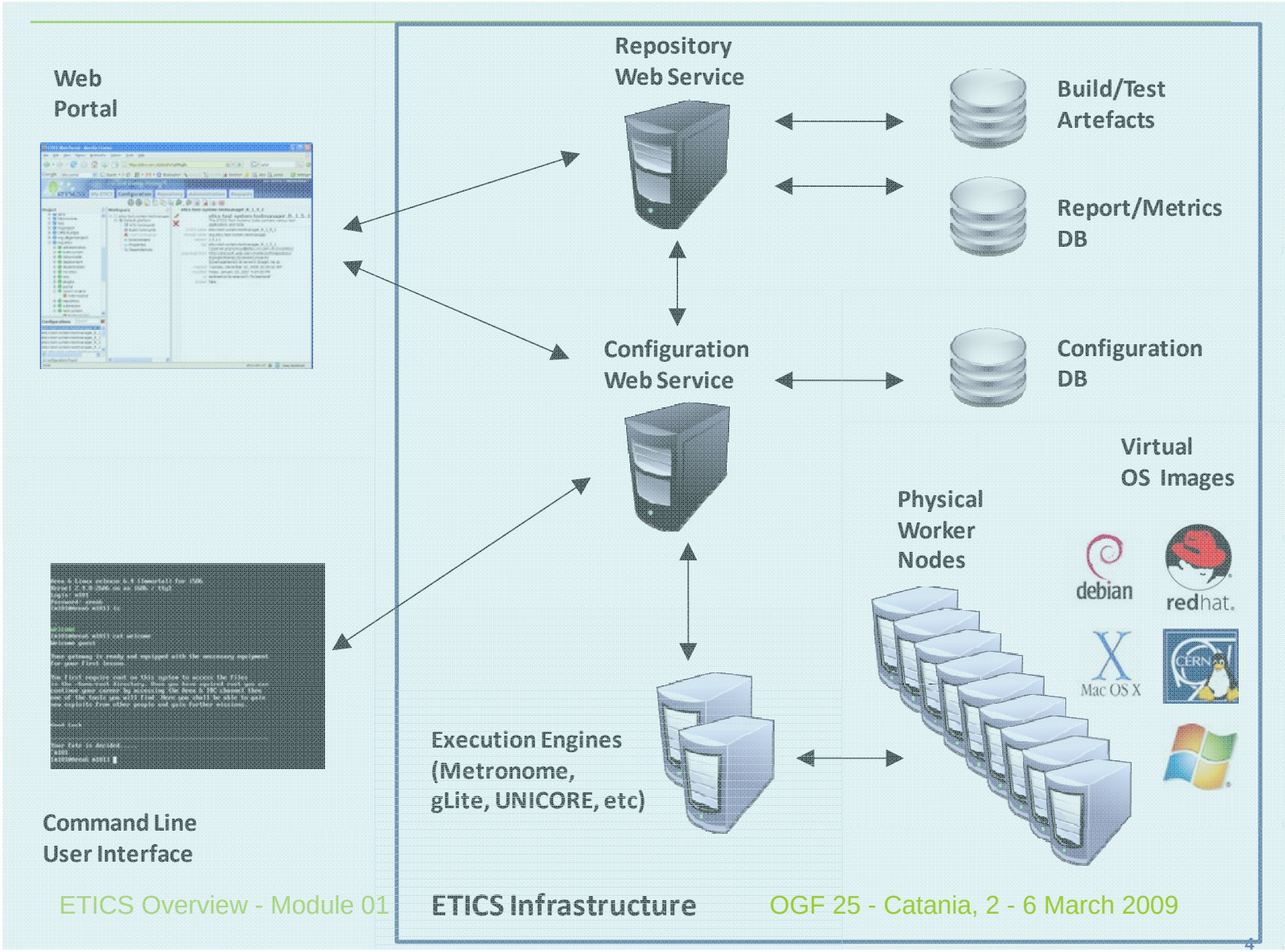
The Problem

Distributed Computing, Distributed Development

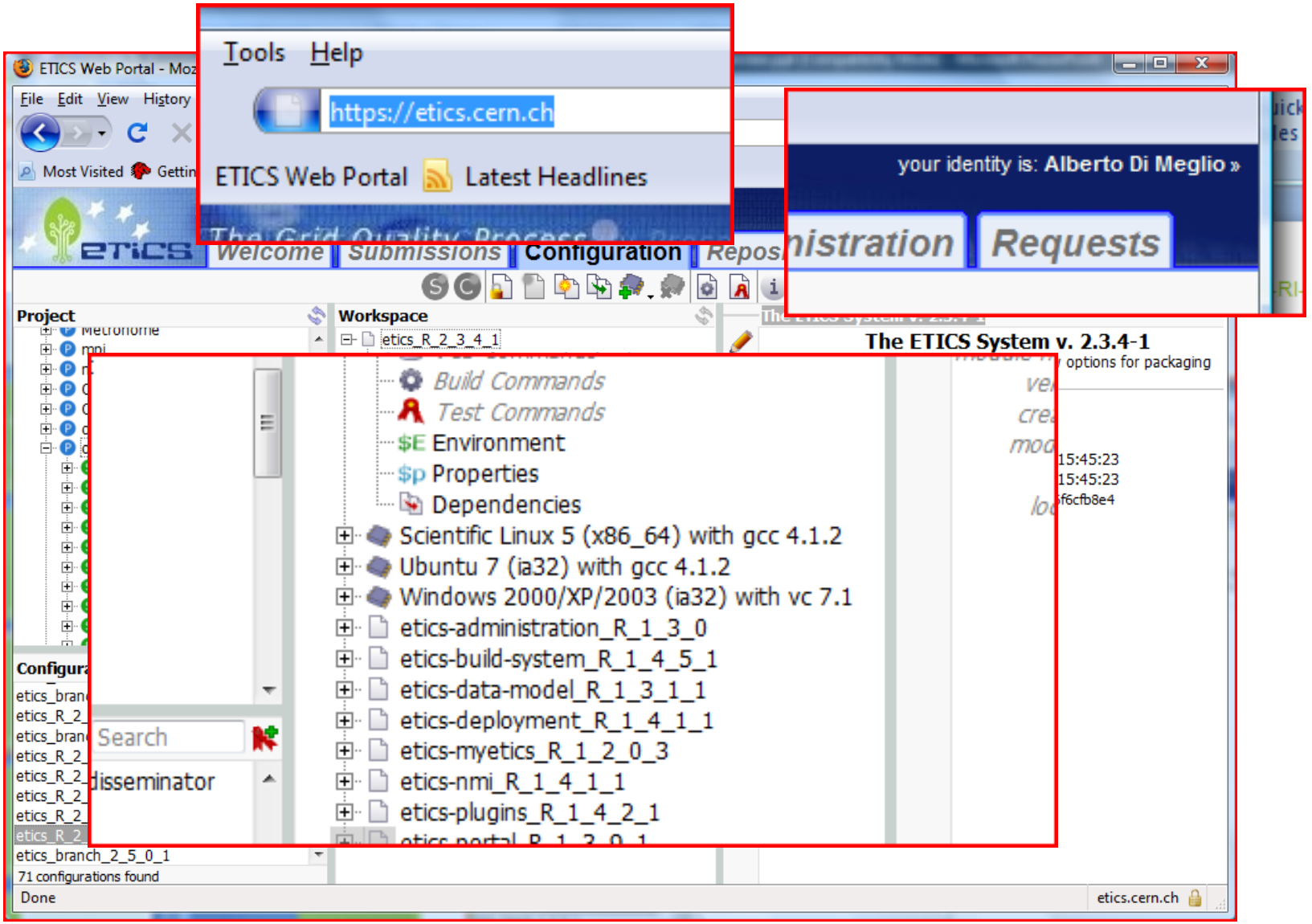
The ETICS System

- Continuous software build, test and QA verification system
- Set of core tools and services
- Easily extensible with additional plugins
- Scheduled (cron) or on-demand build and test jobs
- User computers or remote distributed infrastructures
- Built-in connectors to distribute build and test jobs on different types of infrastructures from standard job management systems to the grid
- Open repository of configuration metadata, packages and build, test and QA reports
- Support for standard package management systems like YUM
- It's multi-platform and independent from any specific language, build or test tool

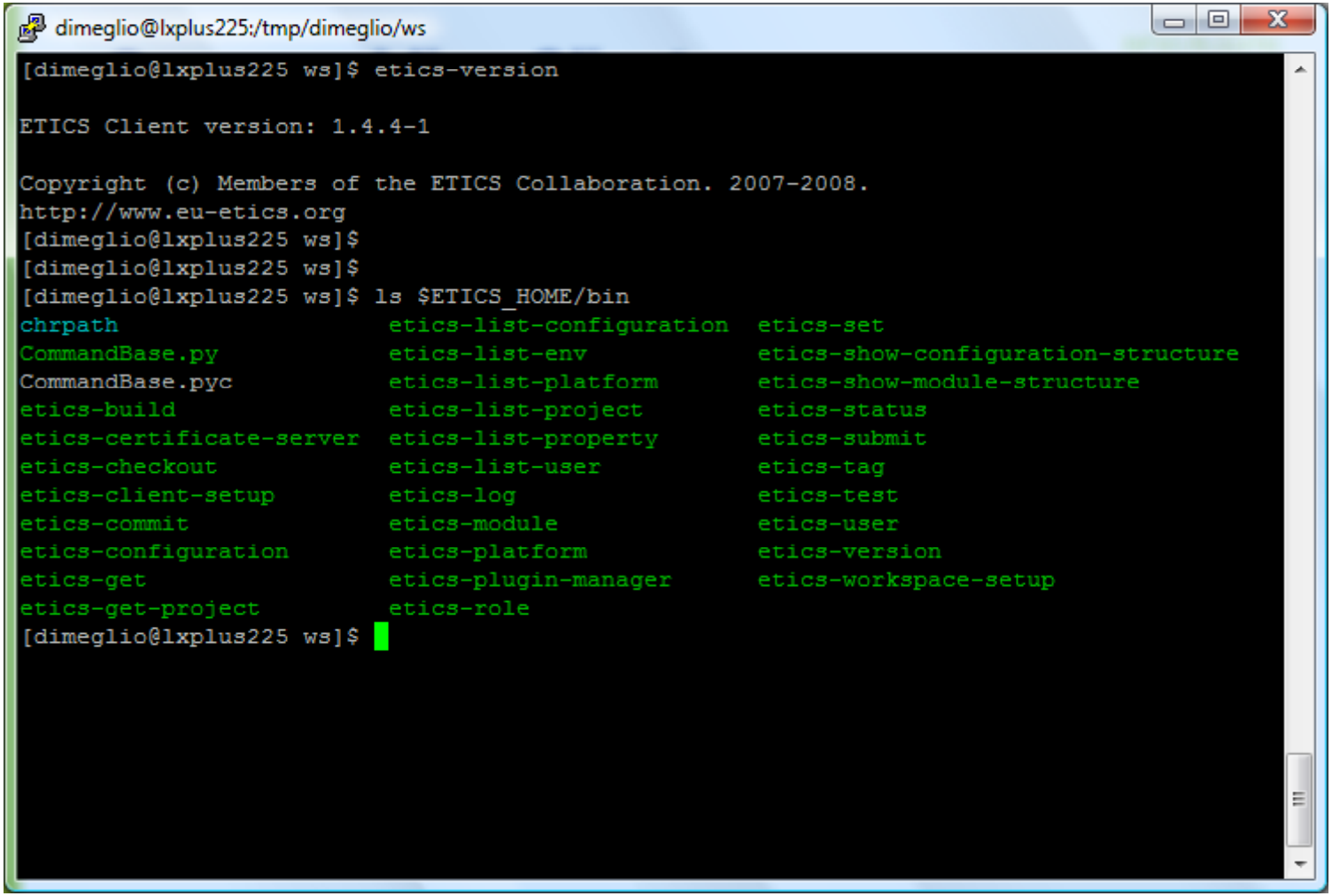
Architecture



The Configuration Web Client



Command-line Client



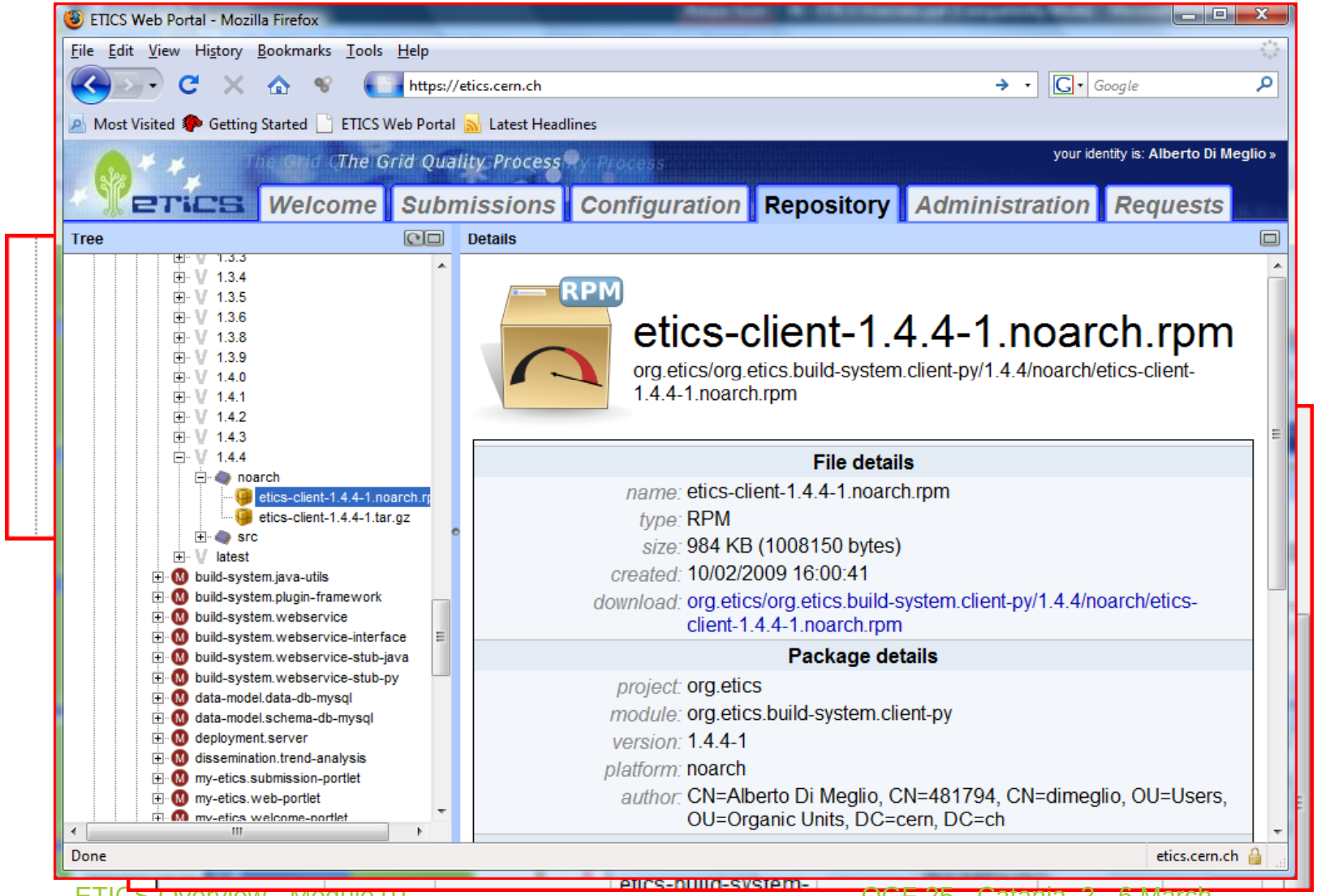
Local and Remote Operations

- Build and test jobs can be executed on the user computer
- Or sent to remote distributed infrastructures
- ETICS has connectors for different types of infrastructures (like the grid or clouds) and different job management system (like PBS, LSF or Condor)
- The jobs can be scheduled using standard cron jobs and the ETICS command-line client
- All necessary dependencies are handled by ETICS
- Developers can build or test locally their software on a single platform and then submit the same build or test to be executed in parallel on multiple platforms

The Repository

- ETICS provides an online repository where all software packages and build, test and QA reports are stored
- The Repository generates dynamic YUM repository at every build to automate the execution of deployment, integration and functional tests
- It can be browsed and queried using a web application with a REST interface, a command-line client or a mountable file system (AFS-based)

The Repository Web Application



Extensibility and Plugins

- ETICS comes preconfigured with extensive build and test features
- It can also be extended by adding additional plugins
- The plugins are provided by ETICS and by its user community and can be easily installed from the online repository

Examples of Plugins

Metrics	Type	Programming languages/ technologies	Tool	ETICS Plugin
Complexity	static	Java Python	Javancss	JCcnPlugin PyComplexityPlugin.py
Design quality	static	Java	Jdepend	JDependPlugin
N of potential bugs	static	C/C++ Python Perl PHP Java	Flawfinder, RATS PMD Findbugs	CFlawfinderPlugin CPyPhpRatsPlugin JPmdPlugin JFindbugsPlugin
N of potential bugs	dynamic	C/C++	Valgrind	CValgrindPlugin
Lines of code	static	All	SLOCCount	SLOCCountPlugin
Coverage	dynamic	Java	Emma Cobertura	JUnitemmaPlugin JCoberturaPlugin
Unit tests success rate	dynamic	Java Python	JUnit PyUnit	JUnitPlugin JUnitreportsPlugin.py PyUnitPlugin.py
Compliance with standards	static	IPv6 WSI		IPv6Plugin WSInteroperabilityPlugi n
Profiling	dynamic	C/C++ Java	Jrat Valgrind	JRatPlugin CValgrindPlugin

Distributed Testing

- One of most powerful features of ETICS is the “Distributed Testing” or “Parallel Testing”
- This features allows to design complex tests composed of several interacting nodes and to deploy automatically complete test environments
- This feature is currently being developed and will be available to the ETICS user community in the Summer 2009

Next Module

02 – The ETICS Portal and the Web Applications

Thanks!

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http://www.eticsproject.eu