SA3 – Integration, Testing & Certification Status Report

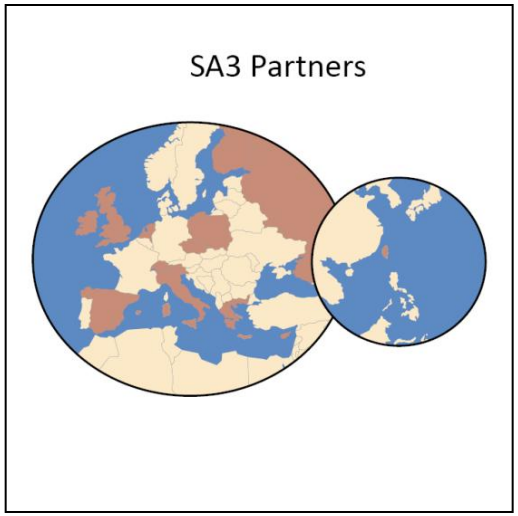
Oliver Keeble
SA3 Activity Leader
CERN

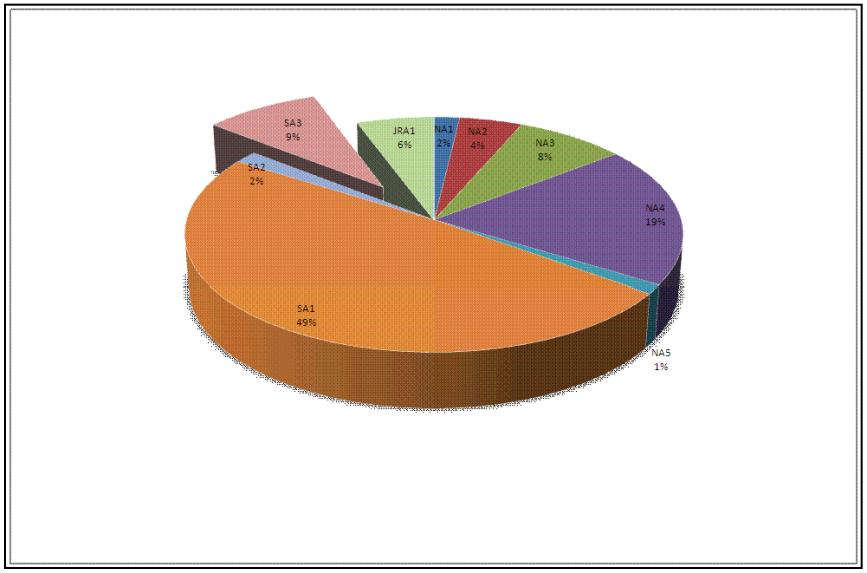
EGEE-III Final Review, 23-24 June, 2010

www.eu-egee.org

e-infrastructure

Activity Overview





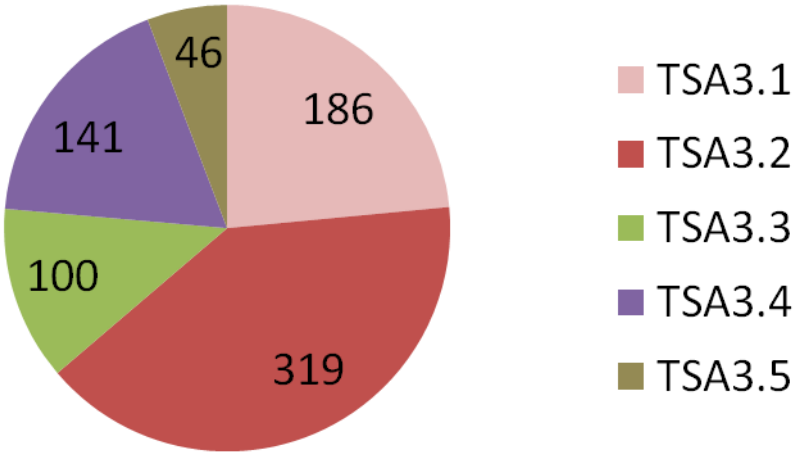
Country	Total PM planned at M24 *(1)*	Total FTE
CERN	396	16.5
Cyprus	12	0.5
Czech Republic	24	1.0
Finland	12	0.5
Greece	30	1.3
Ireland	36	1.5
Italy	96	4.0
Netherlands	24	1.0
Poland	24	1.0
Russia	30	1.3
Spain	32	1.3
UK	36	1.5
Total PM planned at M24	752	
Total FTE		31.3

SA3 Objectives

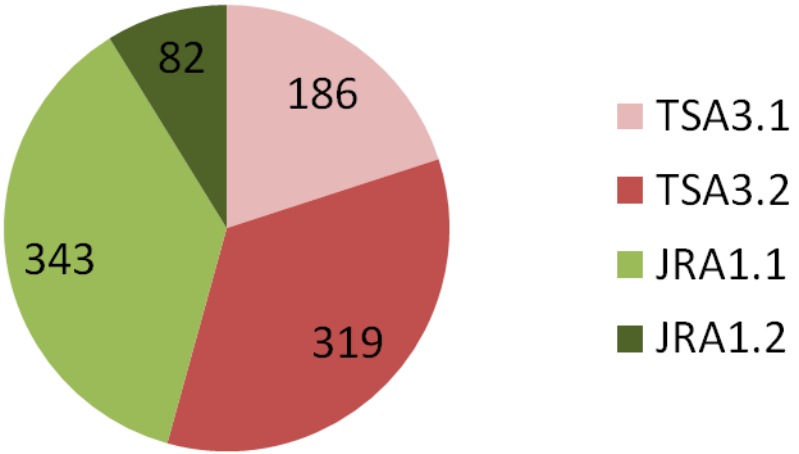
- **Description**
  - SA3 will manage the process of building deployable and documented gLite middleware distributions.
- **Its main objectives are to :**
  - Produce well-tested and documented gLite releases together with associated configuration tools
  - Improve the multi-platform support of gLite
  - Increase interoperability of different Grid infrastructures by working towards best practices and established standards and provide input to standardisation bodies
- **In between JRA1 & SA1 in the software process**

Tasks

- **TSA3.1: Integration, configuration and packaging (186PM)**
- **TSA3.2: Testing and certification (319PM)**
- **TSA3.3: Support, analysis, debugging, problem resolution (100PM)**
- **TSA3.4: Interoperability & Platform support (141PM)**
- **TSA3.5: Activity Management (46PM)**



Distribution of tasks in SA3

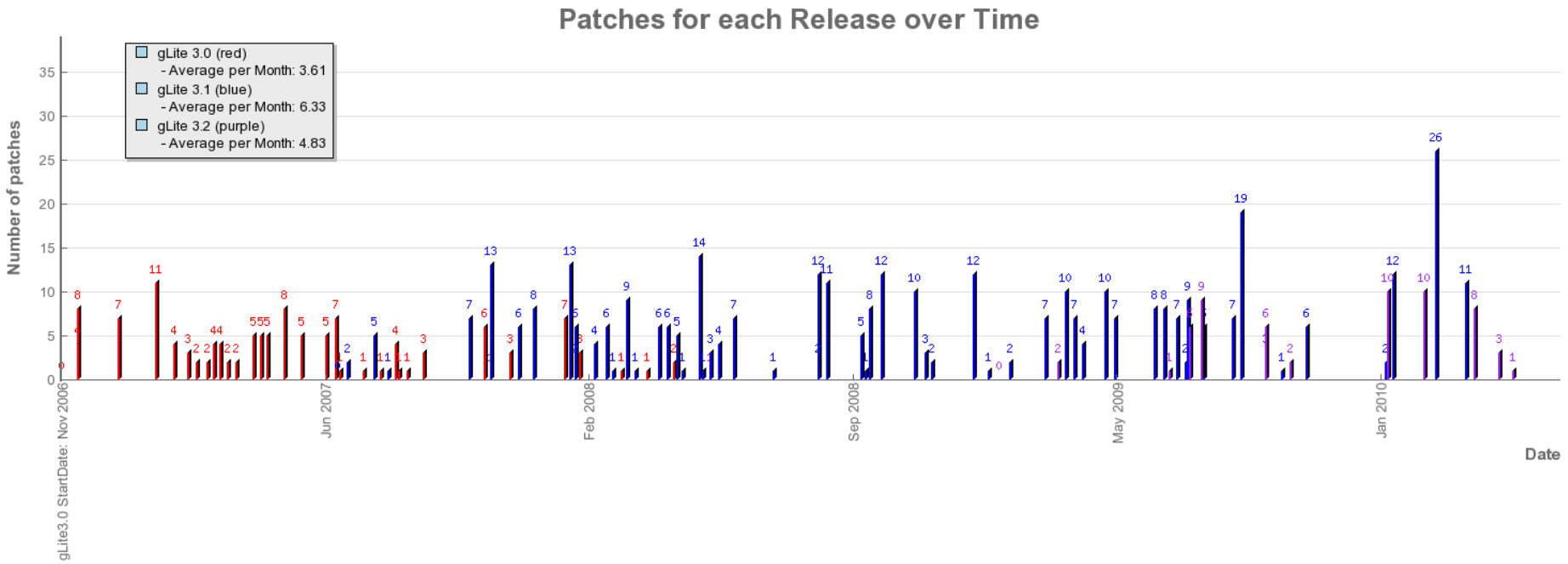


Software change management SA3/JRA1

Summary of gLite Releases

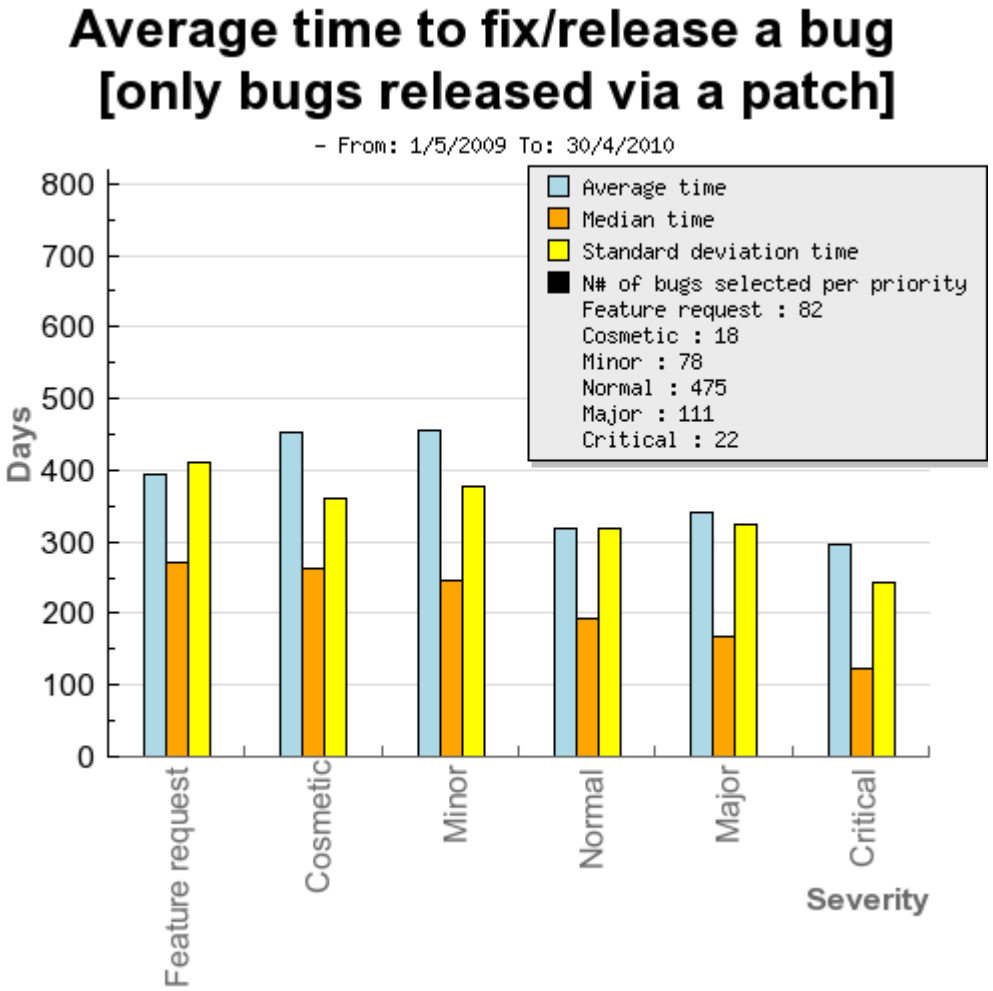
- **Functional additions**
  - SCAS and glexec
  - ARGUS
- **Patches Released**
  - A patch is a self-consistent set of changes to the gLite stack
    - A number of packages and associated information
  - 181 patches released during the second year
  - Each one represents an ensemble of changes
  - Many more patches were *processed*
    - Not all patches reach production
- **Change requests Processed**
  - This refers to *Savannah* (not GGUS)
  - 1118 opened
  - 1359 closed

Release History

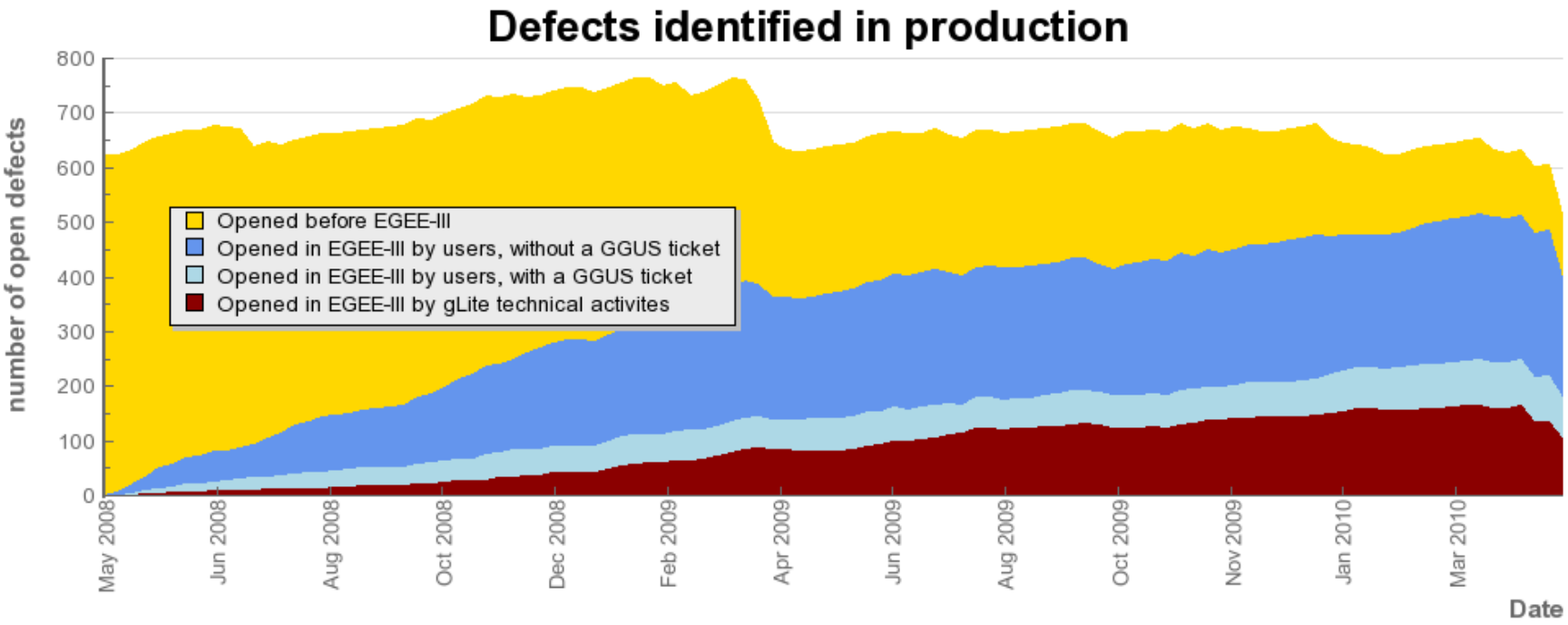


- Each update represents numerous different changes
- Changes released together were independent until then

Bug fix times



Defect management



Enhancement requests and defects identified during development have been excluded from this graph

The Release Process

- **Throughout year 2 the release process was reexamined and redesigned**
  - Objective was to orient the process towards EGI/EMI
  - Based on Product Teams
  - New process launched in January 2010
- **The changes**
  - Transfers of responsibility
  - Certification handled by product teams
  - Further integration of ETICS
  - 'Validation' stage to represent 3rd party oversight of certification
  - Asynchronous releases per service
  - Bug triage
  - Staged Rollout

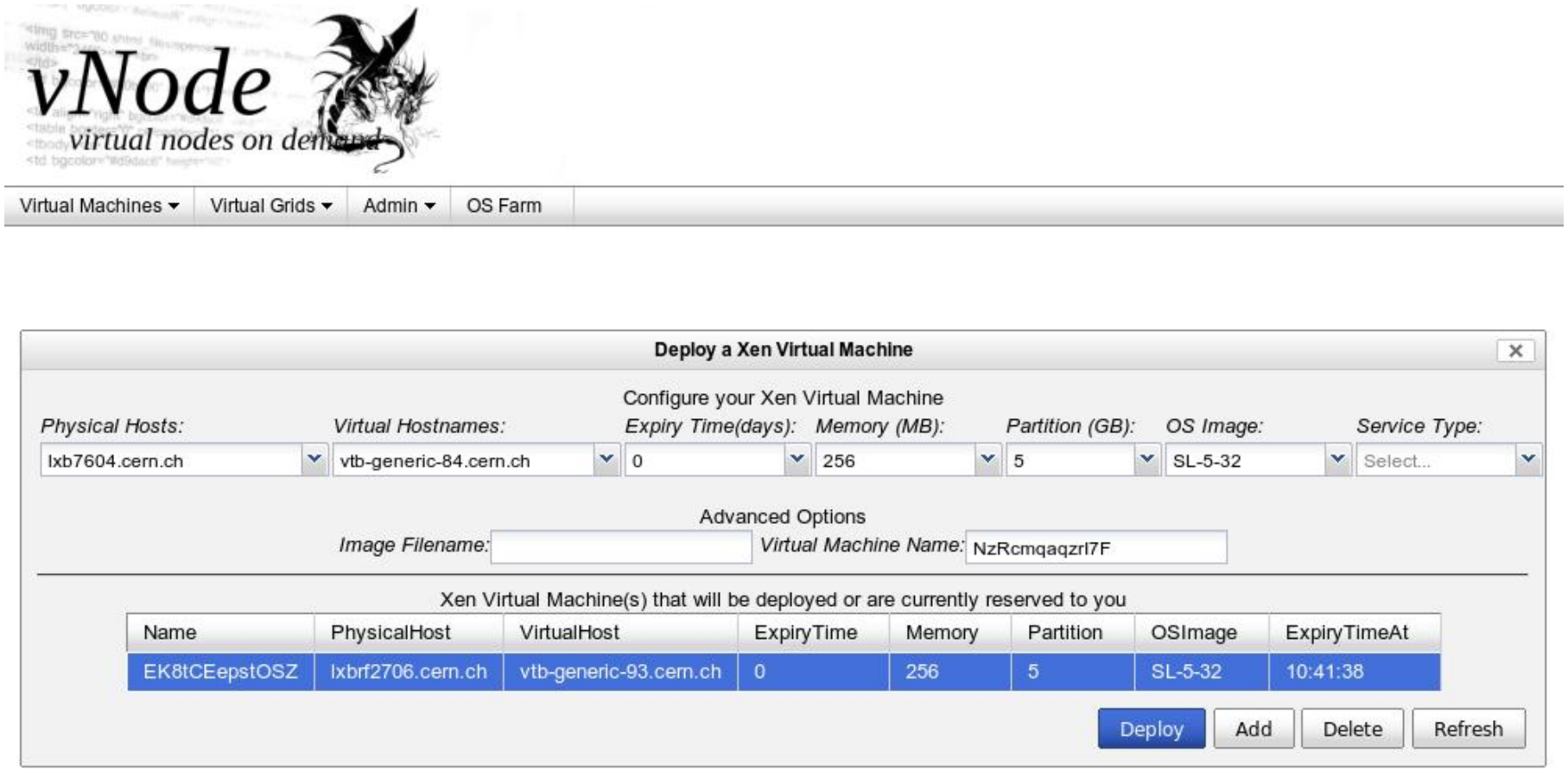
YAIM

- **SA3 maintains the configuration utility "YAIM"**
  - Offers a common configuration interface for the whole of gLite.
- **Modular architecture meant it needed no changes to adapt to the Product Team era**
  - Node specific config was maintained by SA3 members in each Product Team
  - Central "yaim core" was maintained at CERN
- **Adaptation to middleware changes and new services throughout the project**

Certification

- Documentation was refreshed to be Product Team oriented
- A template for certification reports was produced
- Formal acceptance criteria were established
- Responsibility was devolved to Product Teams
- Automated testing after builds has been demonstrated and will soon be integrated into workflow

vNode


vNode
virtual nodes on demand
Virtual Machines
Virtual Grids
Admin
OS Farm
Deploy a Xen Virtual Machine
Configure your Xen Virtual Machine
Physical Hosts:
Virtual Hostnames:
Expiry Time(days):
Memory (MB):
Partition (GB):
OS Image:
Service Type:
lxb7604.cern.ch
vtb-generic-84.cern.ch
0
256
5
SL-5-32
Select...
Advanced Options
Image Filename:
Virtual Machine Name:
NzRcmqaqzrl7F
Xen Virtual Machine(s) that will be deployed or are currently reserved to you
Name
PhysicalHost
VirtualHost
ExpiryTime
Memory
Partition
OSImage
ExpiryTimeAt
EK8tCEepstOSZ
lxbrf2706.cern.ch
vtb-generic-93.cern.ch
0
256
5
SL-5-32
10:41:38
Deploy
Add
Delete
Refresh

Automation and "Yaimgen"

- **"Yaimgen" underlies SA3's automation of testing**
- **The result of activity while the CERN central team managed most of the certification**
- **Yaimgen will**
  - Provision a virtual machine (via vnode)
  - Install a production version of a service
  - Configure it (with YAIM)
  - Upgrade it with a patch
  - Checkout tests
  - Run tests
- **Yaimgen is a standalone utility and is used within ETICS**

Security Audits

- **SA3 has undertaken source-level security reviews of sensitive components in the middleware**
  - Hydra
    - Including penetration testing
  - SCAS
  - Argus
    - Covering PEP, PAP & PDP
- **The only EGEE activity dedicated to proactively finding security issues**
- **Reports have been created and passed to the relevant development teams**

Platform support

- **SL5/x86_64**
  - Majority of services available
  - Still forthcoming
    - FTS – in certification
    - WMS – build at ??
    - VOMS - ??
  - Incomplete stack represents the biggest deviation from the Y2 plan
- **Debian**
  - Release of the WN on Debian 4
  - Emphasis then shifted to Debian 5
- **Yellow Dog 6.2 PPC64 Linux**
  - Unsupported WN release
- **SuSE 9 i386**
  - Unsupported WN release
- **Ubuntu**
  - Documented method for UI installation using the tarball release

Debian release

- GLITE MIDDLEWARE
- INTRODUCTION
- OPEN COLLABORATION
- DOWNLOAD
- LATEST RELEASE
- PREVIOUS RELEASES
- USER INTERFACE
- GLITE 3.2
- GLITE 3.1
- GLITE 3.0
- SOURCE CODE
- SOFTWARE LICENSE
- DOCUMENTATION
- USER GUIDE
- GENERAL DOCUMENTATION
- CONTACT & SUPPORT
- MAILING LISTS
- SUPPORT & BUGS
- WEB MASTER
- ABOUT EGEE
- INTRODUCTION
- PARTNERS
- CONTACTS

gLite 3.2 Debian Updates (x86_64)

16.06.2009 - 3.2 Debian Update 01

Description

glite-WN

This update contains the first release of glite 3.2 for Debian 4 on 64 bits. This release only contains the glite WN. See below for more details.

Note: Installation of Torque client in Debian

The Torque client is not going to be distributed in Debian by gLite. However, we provide the following advice on how to setup Torque:

- From http://www.clusterresources.com/downloads/torque/, download the last stable version for torque package.
- From https://subtrac.sara.nl/oss/torque_2_deb, download torque_2_deb package.
- From https://subtrac.sara.nl/oss/torque_2_deb/browser/trunk?desc=1, download trunk-r26.zip.
- Then execute the following:
  - tar xzf torque-2.3.6.tar.gz
  - mkdir torque-2.3.6/debian
  - unzip trunk-r26.zip
  - mv trunk/* torque-2.3.6/debian/
  - dpkg-buildpackage -us -uc -rfakeroot
- This will produce package torque_2.3.6-1_amd64.deb, that has to be installed. Use debconf on the fly to allow you to point to the torque server, and turn on pbsmom daemon.

Patches

Patch #	Description
1804	Debian WN

Service updates

Priority	Service	Version	Details
Normal	glite-WN	3.2.1-0	Details

MPI

- **There was a cross-activity effort to improve support for MPI on the infrastructure**
- **Managed via a TMB Working Group**
  - SA3 contributed an overview of the current middleware deficiencies
  - SA3 produced updated 'MPI_utils' packages to improve middleware support
- **Progress**
  - At the EGEE09 conference, Earth Science reported 7 out of 26 sites advertising MPI ran without errors
  - At the User Forum, The MPI Task Force reported over 100 sites advertising MPI support with 50 passing tests
    - More support at least one single MPI version correctly
- **SAM tests**

Batch system integration

- **Torque/Maui**
  - Fully supported, platforms and CEs
  - “Parameter passing” developed by SA3
- **Grid Engine (“Sun Grid Engine”)**
  - Fully supported on CREAM on all platforms
- **Condor**
  - Supported on gLite3.1/SL4
- **LSF**
  - Supported on gLite3.1 and gLite3.2
  - Agreement reached between CERN and INFN on partition of responsibilities

Interoperability

- **ARC**
  - Interoperability in the standard gLite release
- **UNICORE**
  - Existing communities do this successfully at the application level
    - EUFORIA
    - Lattice QCD
  - No requirements reported on the middleware
  - VOMS SAML assertions could promote takeup by other communities of cross-infrastructure workflows
- **OSG**
  - One of the constituent grids of the WLCG infrastructure
- **SAGA service discovery**
  - Certified and being integrated into the User Interface

Activity Management

- **Task tracking**
  - Weekly meetings
- **EMT**
  - Cross activity coordination, chaired by SA3
- **All-hands**
  - Established the principle of joint sessions with JRA1
  - CERN, Prague, Nicosia & again CERN
  - Final meeting was 100% combined with JRA1
- **TMB**

Handover to EMI/EGI

- **SA3 tasks have been split between EMI and EGI**
  - Most are now part of EMI Product Teams
  - TSA3.1 – integration
    - EGI (UMD) + EMI SA2 + Product Teams
  - TSA3.2 – certification & testing
    - EMI SA2 + Product Teams
    - EGI - validation
  - TSA3.3 – in depth analysis & debugging
    - EMI support (Product Teams)
  - TSA3.4 – extension of the infrastructure
    - multiplatform → Product Teams
    - batch systems → No clear destination
    - interoperability → EMI JRA1
  - TSA3.5 – management
    - EMI

- **The activity has been functioning with many responsibilities transferred since Jan 2010**

Issues

- **Effort**
  - Effort registered in total reached 85% of pledge
  - CERN lacked 4.5 FTE
  - *Prioritisation and feedback*
- **Fractional FTEs**
  - *Adapt tasks appropriately*
- **Interdependency and effort estimation**
  - Difficulties in effort estimation
  - *Task tracking and revision*
- **Release latency**
  - *Decoupling releases of different services*
  - *Move to staged rollout rather than PPS*
  - *Pro-active certification coordination*
  - *Product teams lower the administrative overhead*

Multiplatform Issues

- **Multiplatform Issues**
  - New Debian and MacOSX operating system releases
  - Prioritisation of SL5 over other platforms
  - Platform availability
    - Particularly MacOSX
- **Possible improvements**
  - Multiplatform code and specialised packagers
    - Decouple work on different platforms
  - A reliable and fast build service
  - Use platform's native build environments

Summary

- **SA3 has concentrated on core business**
  - Integration, testing and release of gLite
  - All releases are fully documented and downloadable on glite.org
- **Preparation in parallel for EGI era**
  - 'Site facing' side minimally affected
  - gLite releases are continuing with much reduced central control
- **Optimisation of the Infrastructure**
  - Managed change for a stable infrastructure
  - Certification automation
- **Extension of the Infrastructure**
  - Platform support progress
  - MPI

DELETE SLIDE ON SUBMISSION

- **Put your name and presentation title on the first slide**
  - See the meeting agenda
- **Insert your activity and name into the footer**
- **Complete the activity overview slide and major tasks**
  - You can reuse the same slides from the first year review since no budget was moved between partners or activities http://indico.cern.ch/conferenceTimeTable.py?confId=53198#all
- **Structure your slides & presentation time with:**
  - 50%: Goals and achievements of the activity:
    - Pictures showing metrics are better than slides of bullet points
    - Mention key tasks within the activity
      - *i.e. What's done, how managed, lead partner, involved partners, ...*
    - Changes to Y2 in response to the EGI Blueprint, Reviewer's comments
  - 10%: Any deviations from the workplan in year 2 - if there were any!
  - 20%: Any issues and how they have been addressed
  - 15%: Tasks handed over to EGI & lessons learnt
  - 5%: Summary slide highlighting the achievements
    - This slide to be left up during Q & A