EMI Infrastructure Area

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Overview

• EMI
• Infrastructure Area
• Available Instrumentation
• Today Limitations
• Harmonization and Evolution
EMI

• The European Middleware Initiative (EMI)
  – A collaboration of the major European middleware providers
    • ARC, gLite, UNICORE and dCache

• Objectives:
  – Harmonize the existing middleware
    • Removing duplications
    • Simplifying usage and maintenance
  – Evolve the middleware
    • Addressing the requirements of the growing infrastructures
  – Support users
    • Implementing best-practice service-oriented procedures
EMI Technical Areas

- Compute
- Data
- Infrastructure
- Security
Infrastructure Area Areas

- Information Service
  - Service discovery and description (GLUE)
- Messaging
  - A common solution for service communication
- Service Monitoring and Management
  - Service status and diagnostics
  - Remote management and fabric integration
- Logging and Bookkeeping
  - Status and state changes
- Accounting
  - Job and Storage accounting record publication
- Virtualization and Clouds (Not covered today)
  - Support of VM based job activities in compute services
  - Cloud management technology for service provisioning
Infrastructure Area Today

L&B Server

Accounting Server

LCG Client

BDII top

Classic Info Index

Unicore Registry

BDII site

BDII resource

Classic Info Server

CIP

pub

pub

pull

pull

pull

reg

reg

gLite CE only

CE only

ALL

Service

Accounting Clients

L&B Client

Unicore Registry
Available Instrumentation

• Service Information
  – GLUE

• Accounting Information
  – Computing Activities only

• Monitoring Information (EGI only)
  – Service Specific (via Nagios probes)
  – EMI to investigate (Task force)

• L&B Status Information
  – Status of Computing Activities
Limitations Today

• Multiple Interfaces
  – From different middleware

• Close systems
  – Custom protocols and data models
    • Complicates aggregation

• Various quality levels
  – Performance and scalability

• Duplication of effort
  – Development and operations
Harmonization

- Service-level Information Provider
  - Single solution required
- Service Registry
  - Single solution required
- Accounting Clients
  - Single solution required
- Information Clients
  - Single solution required
- Service Monitoring
  - Common framework required
Advantages of Messaging

• Single Interface
  – For all information
  – Improves ease-of-use

• Single system/infrastructure
  – Reduces the operations cost
  – Focused effort

• Off-the-shelf implementations
  – Proven technology
  – Fewer issues
  – Lower development costs
Messaging Use

Accounting Services
Monitoring Services
Operations Tools
Information Services
Service Registry

Messaging Infrastructure

L&B client
Accounting client
Monitoring clients
Information client

CE only
CE & SE
ALL

Service
Conclusion

• EMI Infrastructure Area
  – Products to help instrument the infrastructure

• Instrumentation data is available
  – But provided in multiple ways

• Harmonization is a major focus
  – Need to consolidate solution

• EMI is investigating messaging
  – Common infrastructure for services

• Detailed planning is still on going
  – More details soon!
Thank you!

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