EMI Infrastructure Area

Laurence Field

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
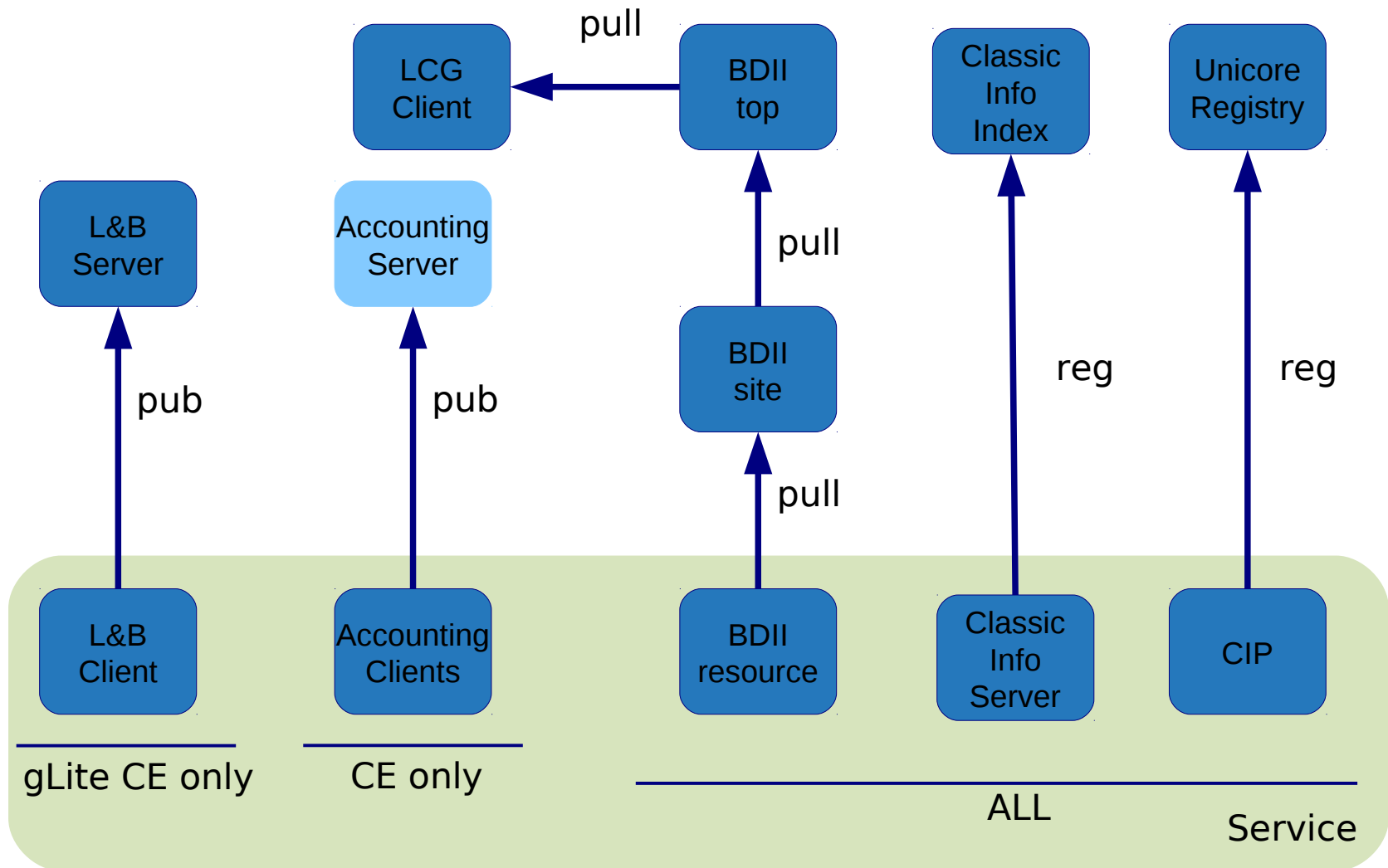
Compute	Data

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

pull

LCG Client ← BDII top

BDII top ← Classic Info Index

Unicore Registry

L&B Server

Accounting Server

pull

BDII site

pull

pub — L&B Client

pub — Accounting Clients

BDII resource

reg — Classic Info Server

reg — CIP

gLite CE only | CE only | ALL

Service

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
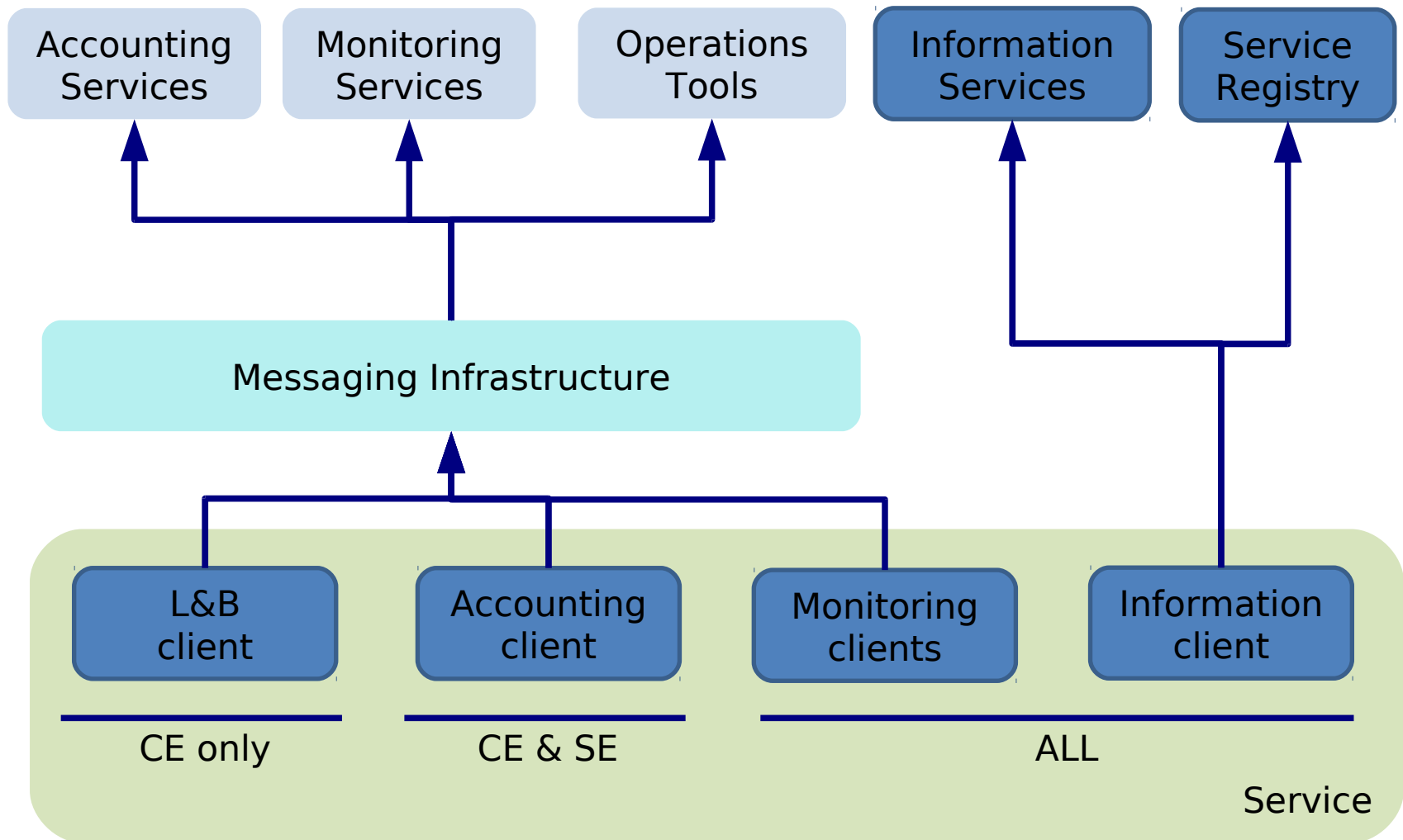 - Development and operations

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

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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