

Grid Computing TSRP

Observations

Middleware & Management

Topics Discussed

- Workflow & associated execution
- HLA based simulation
- Global resource management
- Programming models & tools
- Security

Workflow & execution

- Workflow specification (c.f. APST, WSFL)
- Meta-data mapping to flow graphs (c.f. SDSC)
- Data management (c.f. GridPhyn)
- Link to resource management, programming models
- Application areas: life science, manufacturing simulation, computational science
- Players: BII, IHPC, SIMTECH, SCE-NTU

HLA-based Simulation

- HLA as a framework for describing simulation sub-systems and integration
- Policy, provisioning
- Integration of real-time & simulation system
- Simulation cloning
- Link to security & resource management
- Players: SCE-NTU, SOC, ECE-NUS, SIMTECH, DSTA

Resource Management

- Real-time resource management (c.f. community scheduling framework)
- Service data element to capture more resource & usage & real-time info.
 - Modeling & prediction
 - Accounting & billing
- New pricing model
- Provisioning
 - WS-agreement, negotiation, enforcement
 - Computational scheduler
 - c.f. GARA, DRAAMA, GRAAP
- Players: SOC-NUS, SCE-NTU, ECE-NUS, IHPC, ASP-NTU, BII, EEE-NTU

Programming Models & Tools

- Performance monitoring & optimization
- High level programming model
 - HLA
 - UML
- Rapid grid application enabling
 - Fuzzy-clustering (algorithm & data)
- Players: SOC-NUS, SCE-NTU, ECE-NUS, IHPC, ASP-NTU, BII

System-level Security

- Biometrics user identification
- Efficient public key infrastructure
- Application sand-boxing
- Players: I2R, NTU, IBM