

EGEE Conference - 2005

NICE & Platform updates
Andrea Rodolico

- About NICE and Platform Computing
- EnginFrame and GENIUS evolution
- What's new in LSF 6.2
- EGO: Enterprise Grid Orchestrator
- VMO: Virtual Machine Orchestrator

- Expertise in Grid deployment
 - European company with 10 years experience with enterprise Grid solutions
 - Comprehensive professional service offering for commercial and EGEE middleware

- Core business: the Global Grid Gateway
 - **EnginFrame & GENIUS** Grid Portal product line
 - VAR channels with worldwide coverage for implementation and support (incl. industry leader Platform Computing)

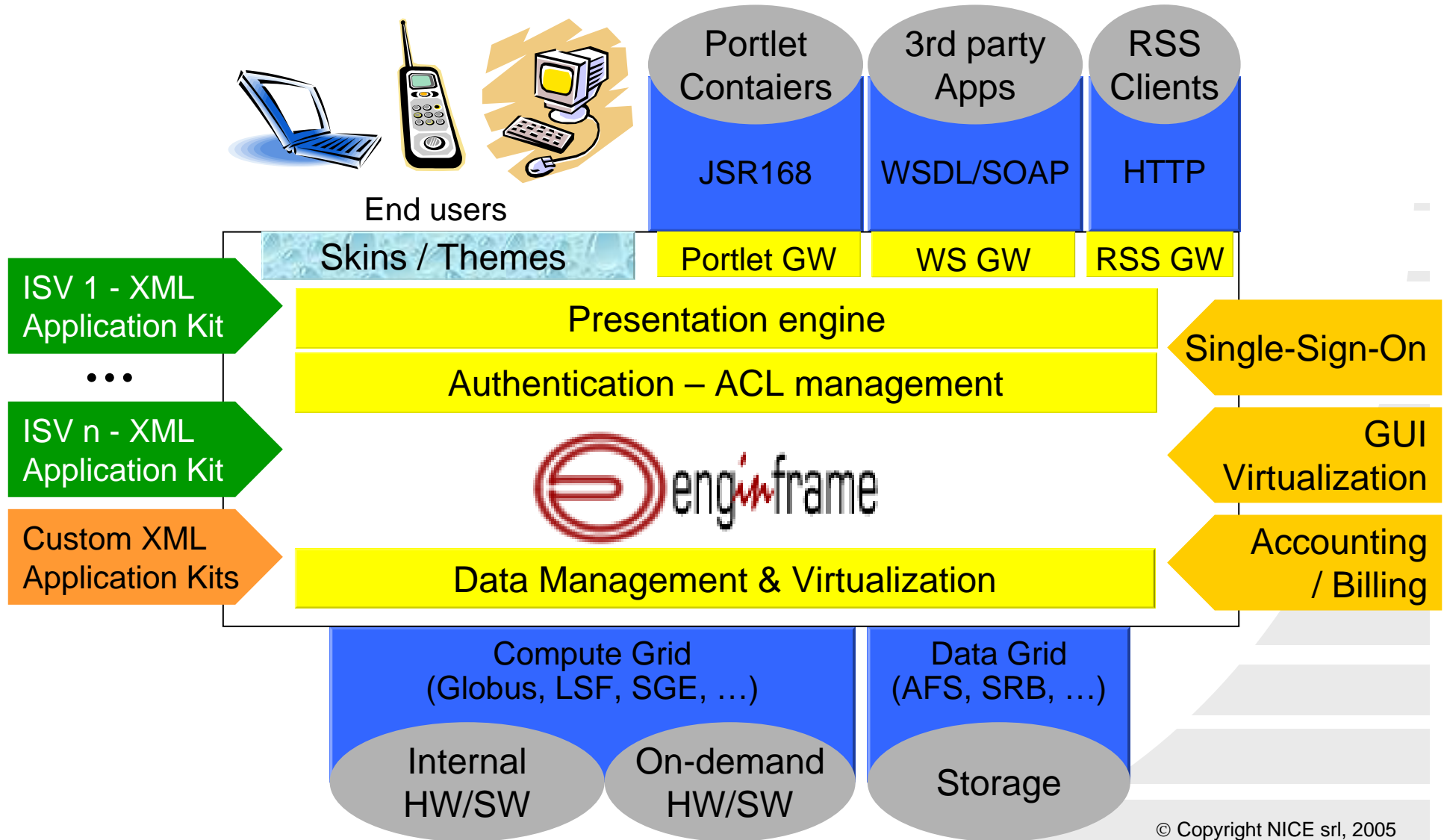
- Other relevant competencies
 - Server-based computing

- Worldwide Leader in Grid deployment
 - 400 people
 - 13 years experience with Grid solutions
 - 700.000 CPUs managed worldwide
 - Platform products are deployed in 85% of Fortune 2000 companies

- Comprehensive Grid software portfolio
 - LSF product family
 - Symphony for financial sector
 - Analytics solutions
 - License management
 - Commercial Globus support

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EnginFrame as Grid Gateway



The image displays a composite screenshot of a corporate grid portal. On the left, a Mozilla Firefox browser window shows the 'enginframe' website with a navigation menu including 'Home', 'My jobs', and 'Cluster'. The main content area is titled 'Dante Remote Simulator' and contains instructions for users, such as 'Welcome to the Dante Remote Simulation Environment' and 'Some Points To Note Before Beginning'. On the right, a Microsoft Internet Explorer window displays the 'Audi Corporate ASP' interface, which is powered by EnginFrame + FlowGuide. This interface includes a navigation bar with 'stage', 'models', 'service', 'facts', and 'news'. The main content area shows a list of simulation jobs, with 'AudiPamcrash_preprocessed' selected. Below this, there are input fields for 'LSF hosts', 'Projektname', 'Berechnungsfall', and 'Input Deck', along with checkboxes for options like 'Auslieferung in Eingabeverzeichnis?' and 'Restartfiles in Eingabeverzeichnis?'. The 'Pamcrash Version' is set to '98'. At the bottom, a navigation bar includes 'Home', 'Your jobs', 'Your data', 'Cluster info', 'Support', and 'Logout'. A status bar at the very bottom indicates 'Operazione completata. Errori nella visualizzazione della pagina.'

- **Mechanical**

Ferrari, Audi, BMW, FIAT
Auto, Elasis, Magneti Marelli,
MSC.Software, P+Z,
Swagelok, Toyota, TRW

- **Manufacturing**

Bridgestone, Procter &
Gamble, Galileo Avionica

- **Oil&Gas**

Slavneft, Schlumberger,
TOTAL, VNIIGaz

- **Electronics**

STMicroelectronics, Accent,
SensorDynamics, Motorola

- **Telecom**

Telecom Italia

- **Research**

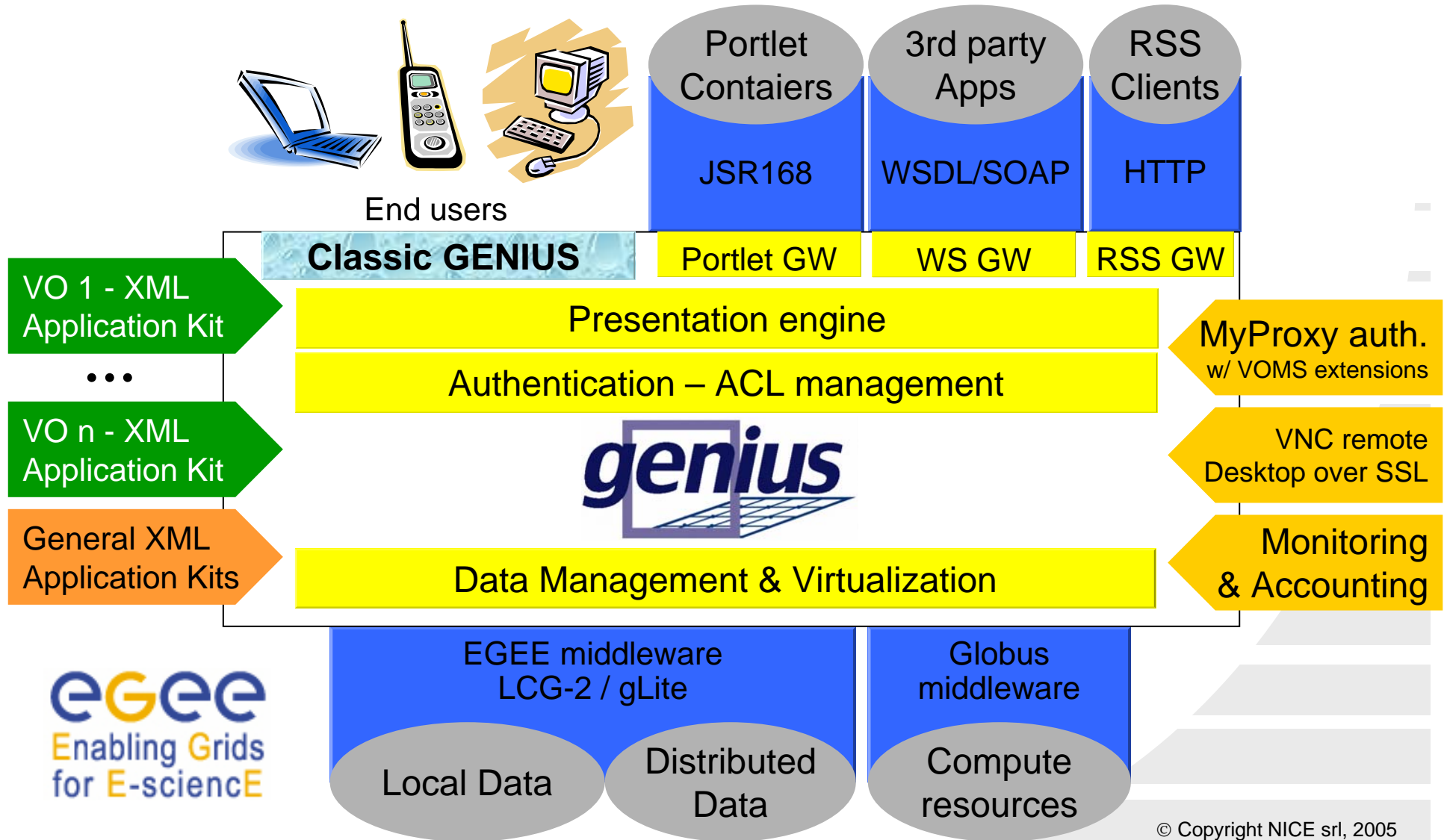
ASSC, CCLRC, CERN,
CILEA, CINECA, CNR,
CNRS/IN2P3, ENEA, FzU, ICI,
IFAE, INFN, ITEP, JSC
G.G.M., KU Leuven, SSC-
Russia, SDSC

- **Education**

Dresda University, Ferrara
University, ITU, Messina
University, Politecnico of
Milan, Technische Universität
Dresden, Trinity College
Dublin, Salerno University,
S-PACI

- GENIUS is being migrated to EnginFrame 4.1 core
 - Broad simplification of the GENIUS code
 - Focus on the compliance to emerging standards
- Major move towards the Global Grid Gateway (G³)
 - WebServices ready, with .NET compliance
 - Application-driven black-box approach for Virtual Organizations
 - Standard notification via RSS news feeds
 - Comprehensive authorization capabilities
- Major functionality enhancements
 - Many usability enhancements
 - Improved data management and navigation
 - Multiple File Upload and Download applet
- Full commercial support available
 - Spread EGEE middleware in industrial customers, with full commercial support on the Portal/Gateway layer

GENIUS future architecture



- Open community for GENIUS and EnginFrame developers
 - Info forum on major happenings in the Grid Gateway arena
 - Blog / newsgroup for technical discussions
- **Repository** for portlet / plug-in developers
 - Industrial plug-ins for EnginFrame
 - Open source plug-ins for GENIUS
 - Other contributed components (e.g. GridSphere portlets, etc.)
- Volunteers are welcome!
 - Please contact:
 - roberto.barbera@ct.infn.it
 - livia@bio.dist.unige.it
 - info@nice-italy.com

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■ LSF

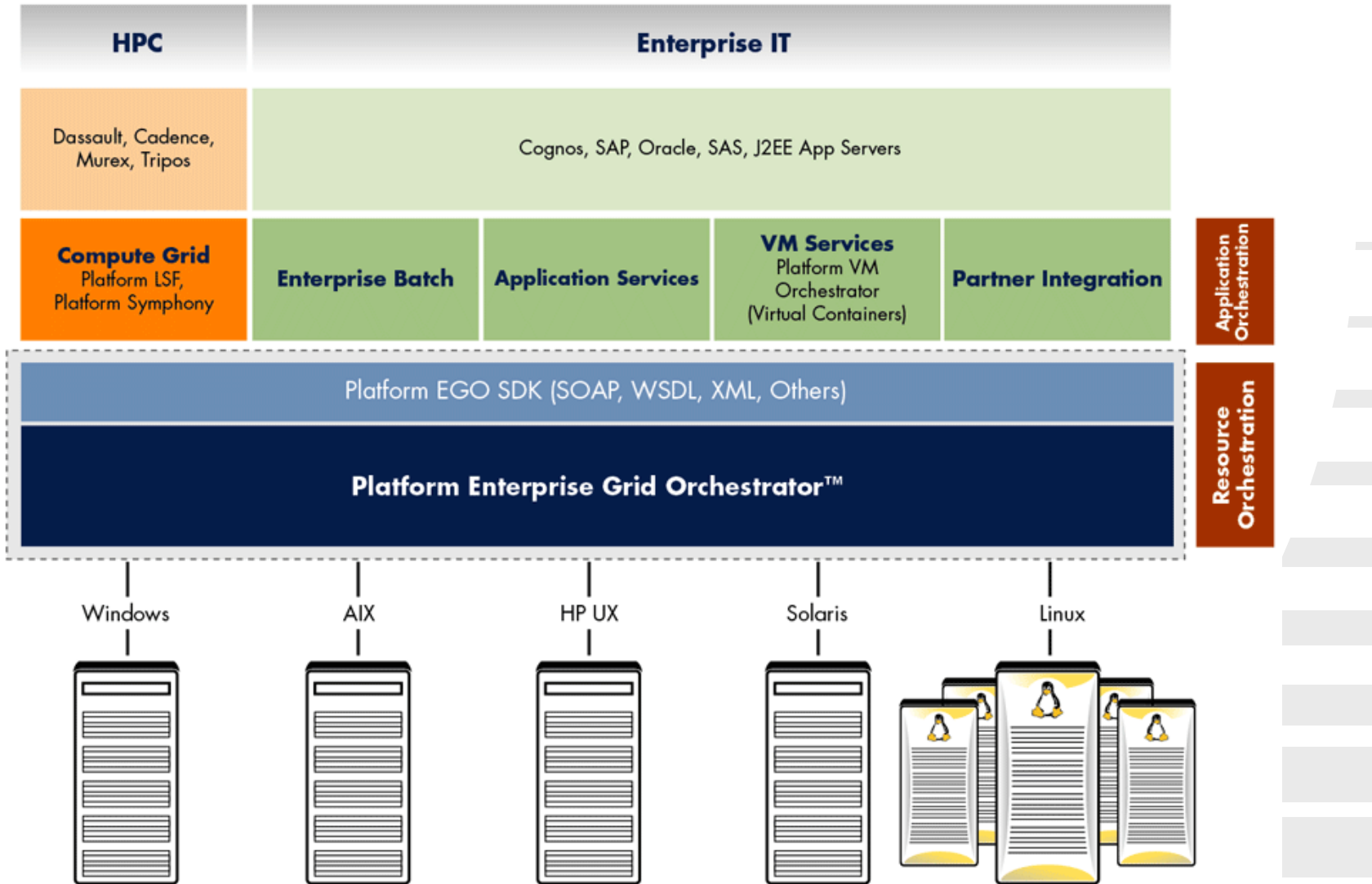
- Further Performance Enhancements
- Bulk job deletion
- Support Longer Command lines
- Open Advanced Reservations using dispatch window
- Dual-Core Support
- Improved dynamic host groups with wildcard support
- Condensed Output using host groups
- Updated Open Source package

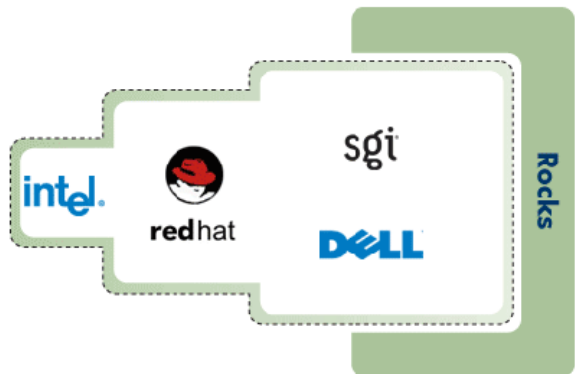
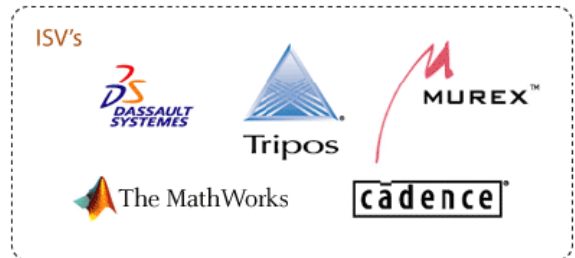
■ HPC

- Improved start time prediction
- Pre-emptive Backfill
- Topology Aware Slot Reservation
- `by_instance`, `by_host`, `by_job` resource reservation
- Generic MPI can now scale to 8192 ways
- Support for MVAPICH, IntelMPI & MPICH-MX
- Improved reliability/fault tolerance/signal handling and task cleanup
- Significantly reduced the overhead of start up/shutdown

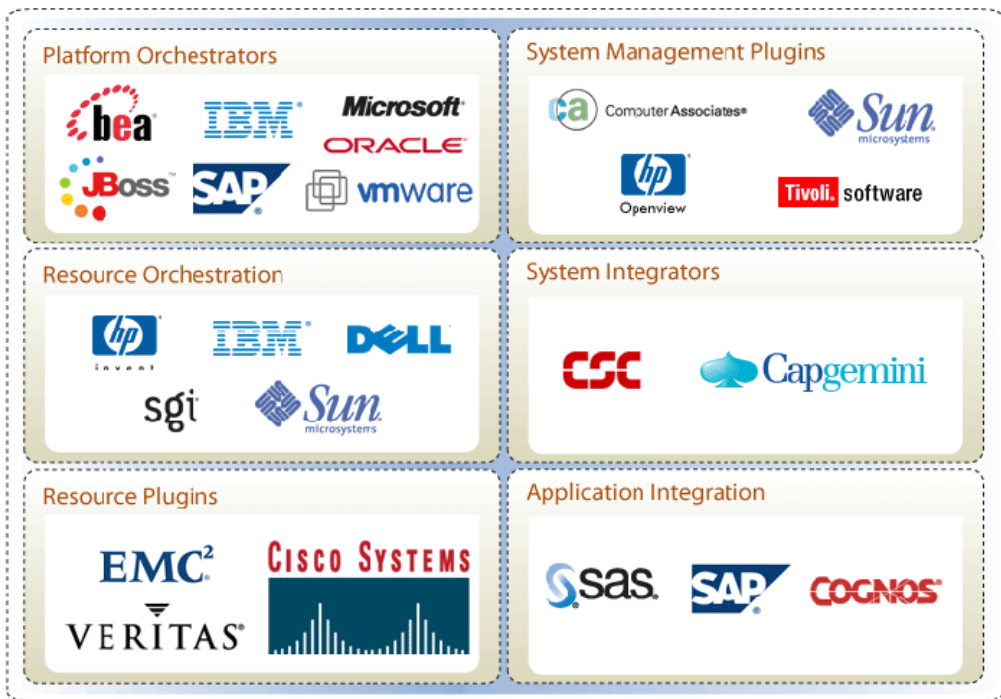
- HP
 - XC/Slurm 3.0
- SGI
 - SGI ProPack4
 - This supports the new cpusets API will be part of the standard Linux Kernel
 - CSA enhancements.
- BPROC4 for AMD64
- Cray
 - Port to XT3
 - Port to XD1*
- IBM
 - BlueGene *
 - pLinux
- IPv6 support
 - Beta based on Oak by the end of the year

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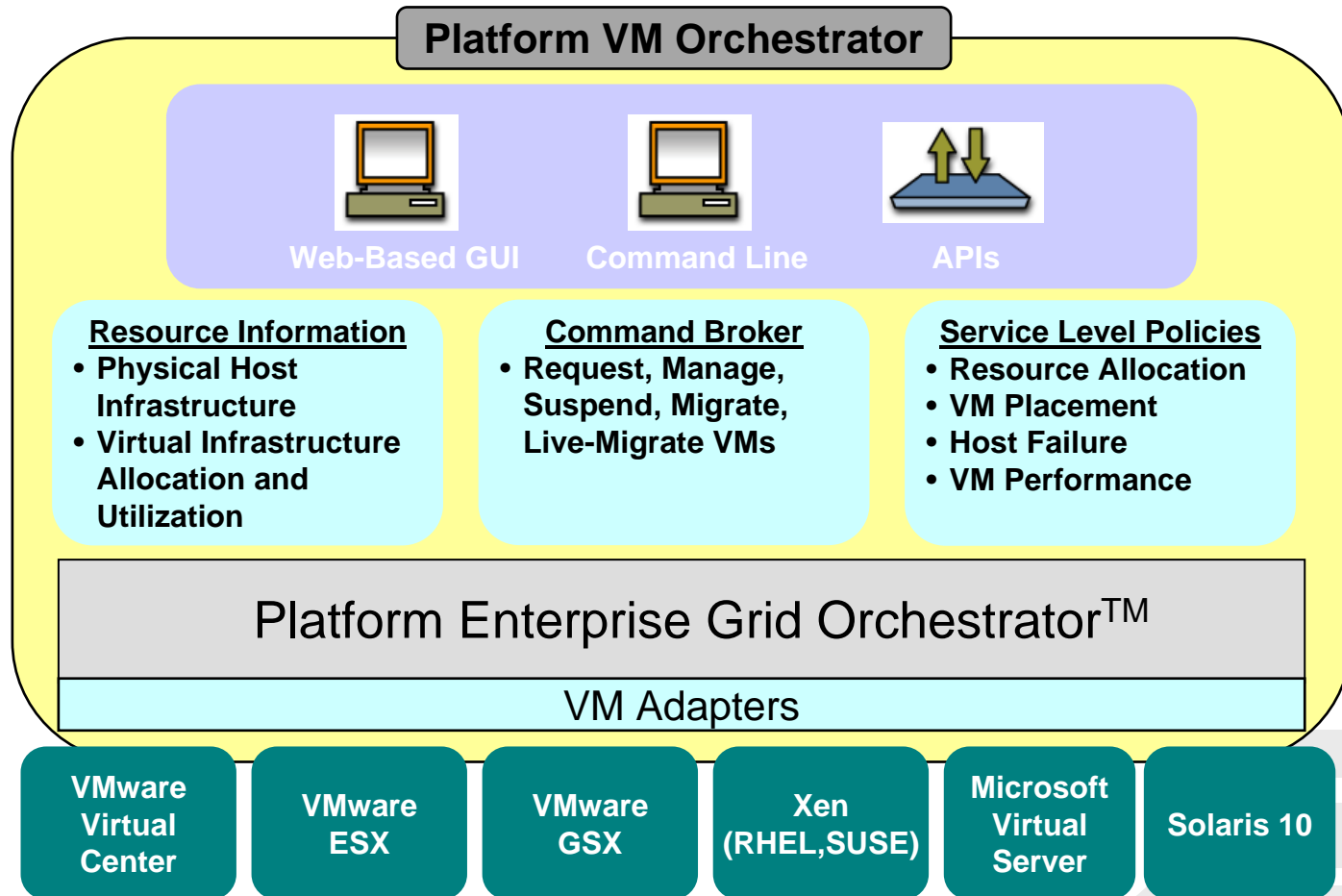


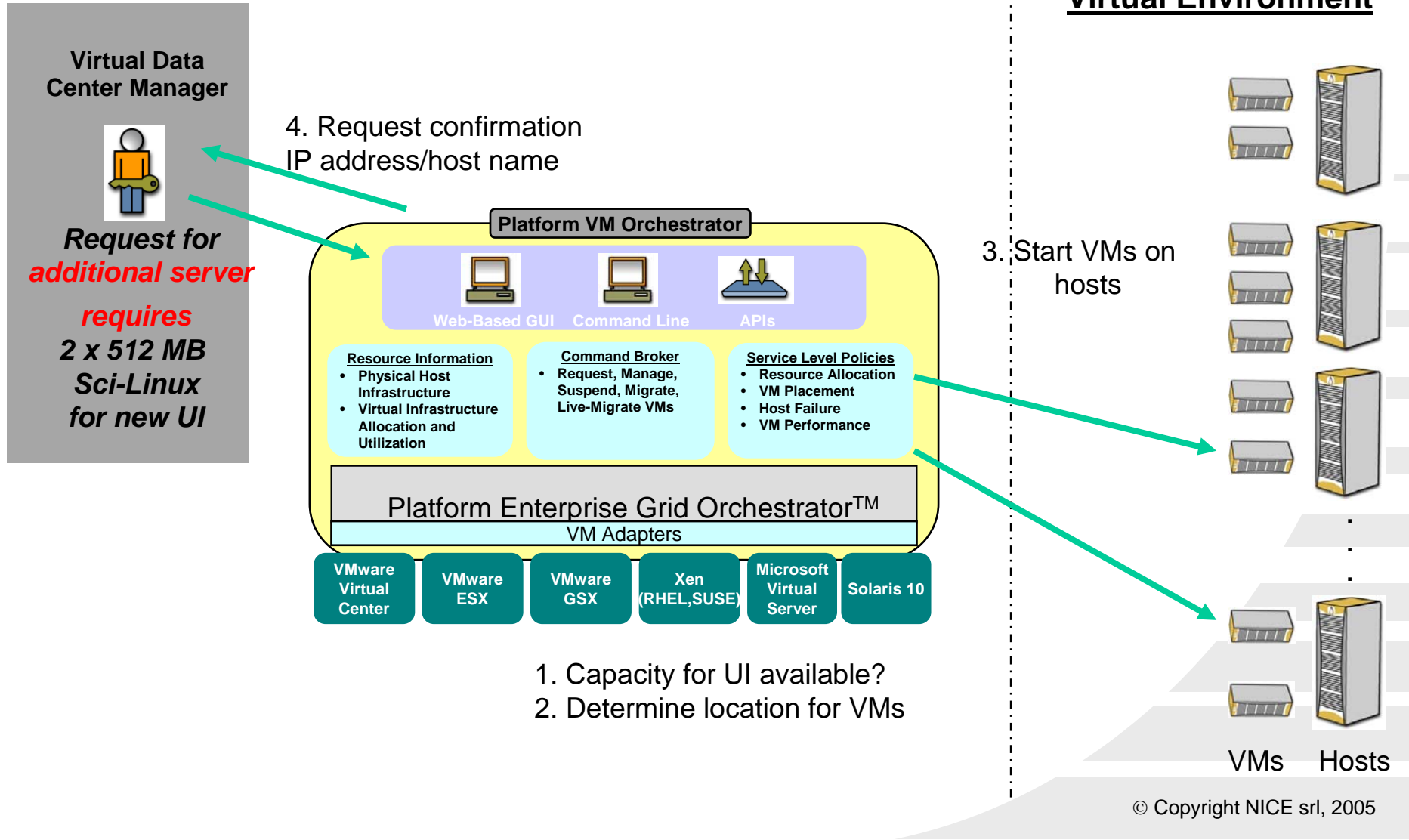


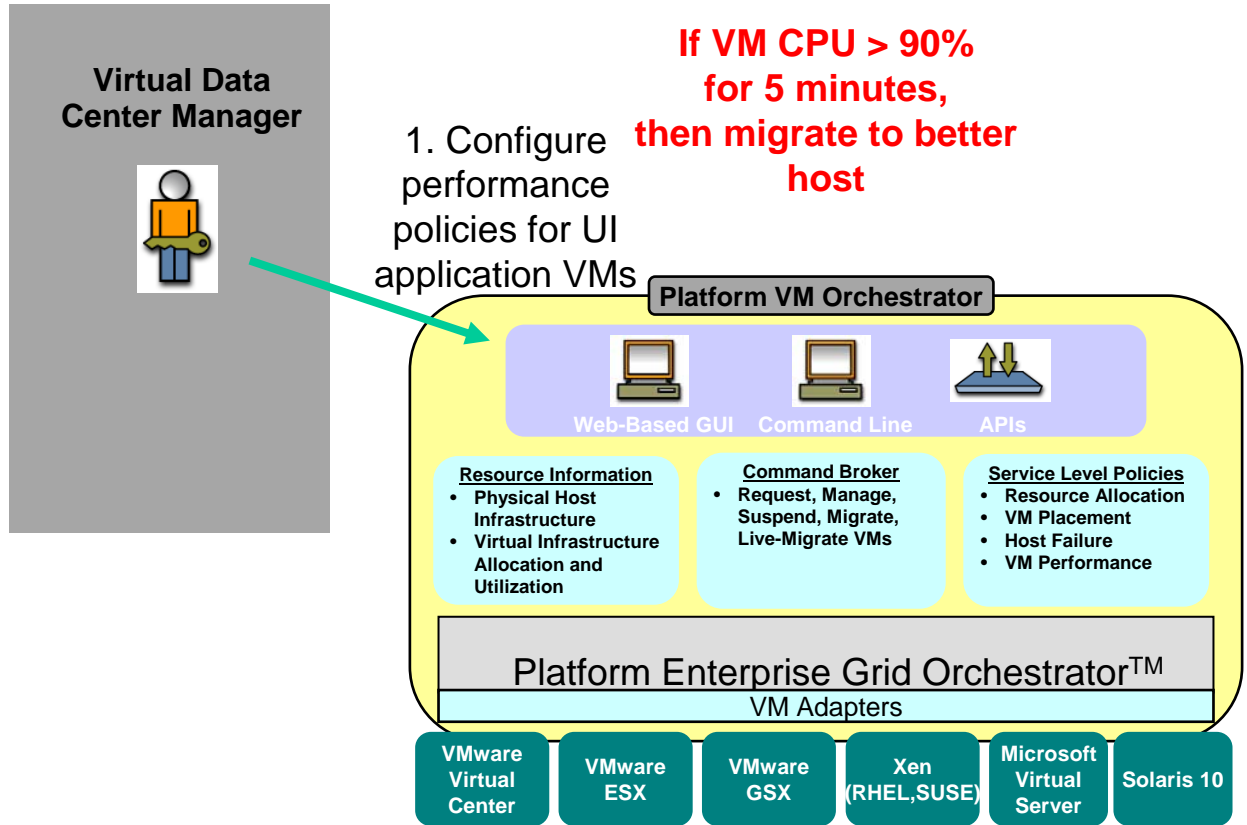
Platform Enterprise Grid Orchestrator



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**If VM CPU > 90%
for 5 minutes,
then migrate to better
host**

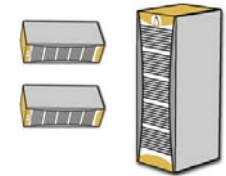
1. Configure performance policies for UI application VMs

2. Monitor VMs performance data
3. Performance policy violated on UI₁
4. Select better host

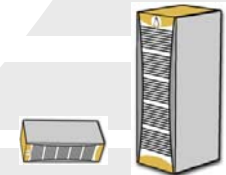
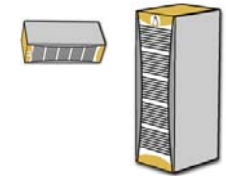
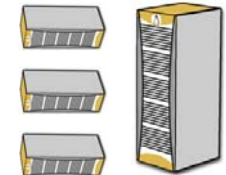
Virtual Environment

5. Migrate

UI₁



UI₂



VMs Hosts

Q&A

