

Platform

Platform EGO

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- ❑ **Orchestration and virtualization of compute resources for agile IT**
 - The real GRID Computing
 - IT Challenge
 - Data-center pain points
 - Requirements and benefits of an infrastructure platform
 - Introducing Platform EGO
 - Benefits

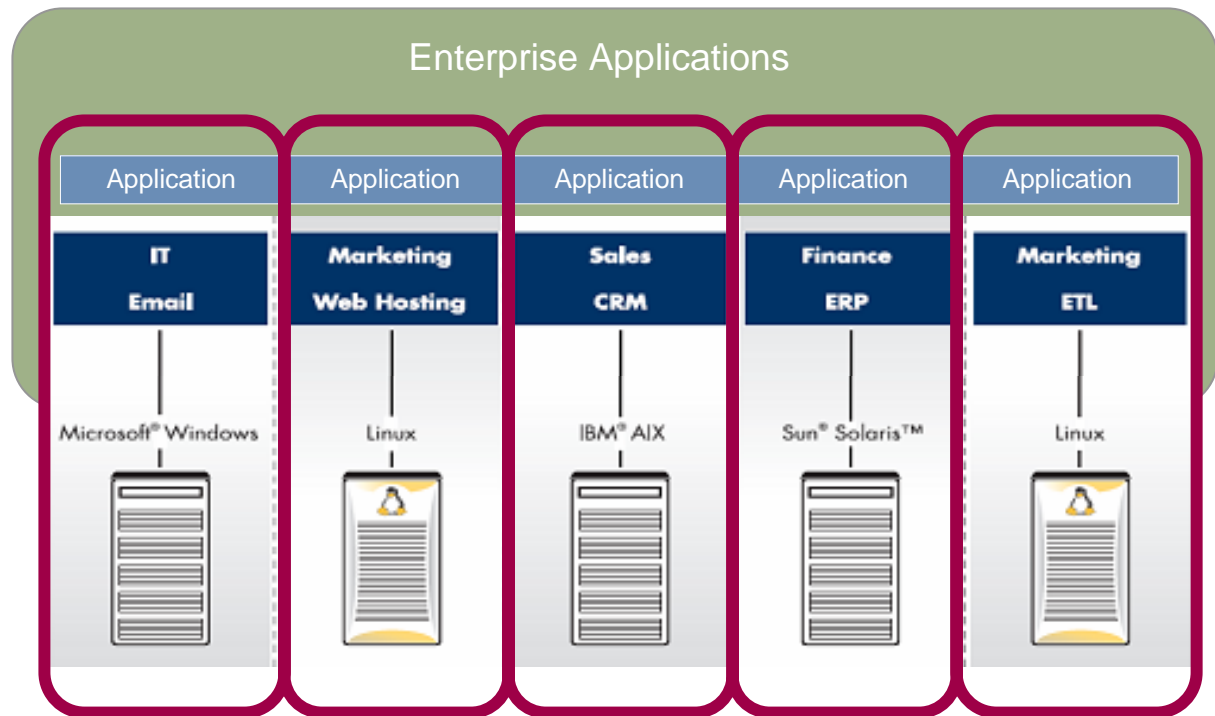
- ❑ **Q & A**

The Real GRID Computing

- ❑ Grid is key IT infrastructure technology to implement IT agility, On Demand computing, Utility computing, Service Oriented Infrastructure (SOI)
- ❑ Grid is about delivering IT resources to applications where and when needed based on business priorities
- ❑ Grid is complementary to other infrastructure technologies such as server virtualization and IT provisioning.
 - ❑ Virtualization happens at many levels, such as server, storage, and data center.
 - ❑ Grid technology helps virtualize distributed data center resources – it create one virtual server to be shared out of many servers and other resources.

Unpredictable
infinite demand

Finite compute
resources e.g.
CPUs, Memory,
& Software
Licenses



Result: under-provisioning or over-provisioning

Datacenter Business Pain Points

Common in the Data Center / Enterprise IT environment:

- ❑ Poor resource utilization - average 15% in the data center
- ❑ Inability to meet application SLAs
- ❑ Excess power consumption and heat or lack of real estate for additional hardware
- ❑ Time consuming and error prone manual management and co-ordination of resources, applications, and management utilities
- ❑ Unpredictable hardware failures resulting in lost work and revenue loss

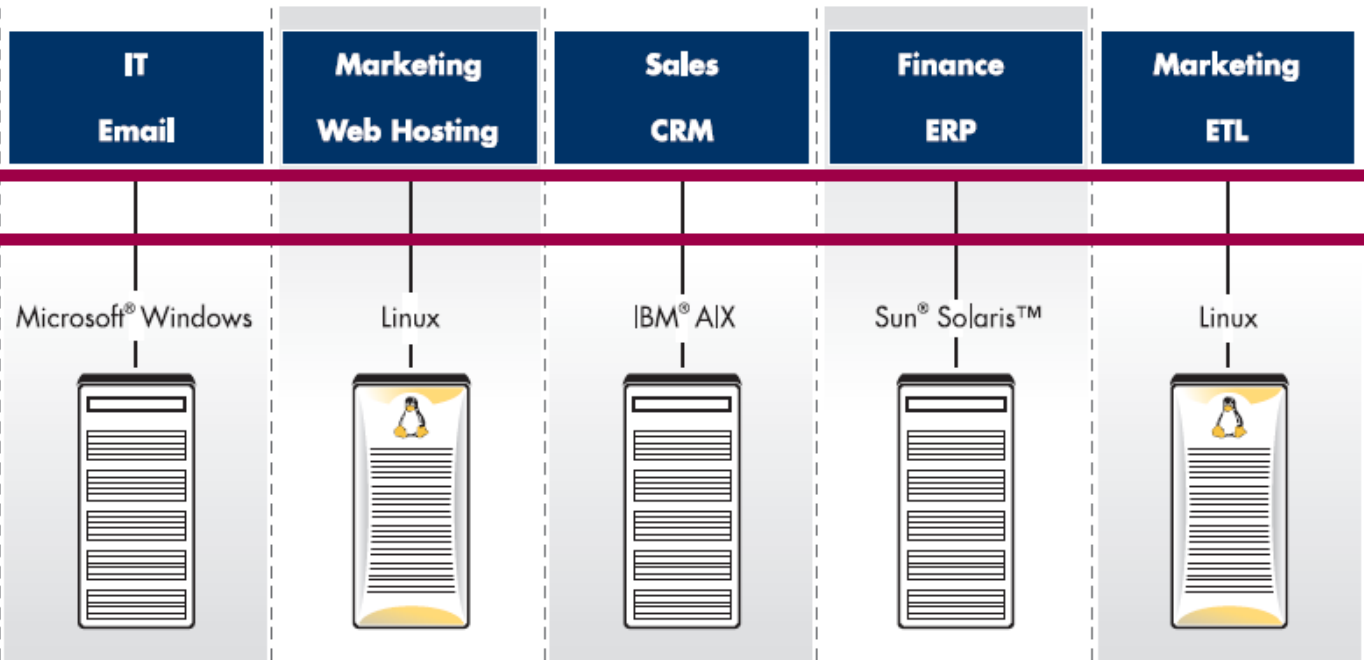
- Forms a virtual, shared pool of resources supporting all applications
- Is **application** aware
 - Understands all classes of applications and the demand they generate
 - Manages to SLA's
- Is **infrastructure** aware
 - Understands all classes of resources, physical and virtual
 - Heterogeneous network, storage, server, OS (and VM) resources
- **Orchestrates**
 - Manages allocation of workload onto resources
 - Manages allocation of resources to workload
- Employs **policy-driven resource allocation** and sharing

1. **Open interface & architecture** to on-board any application type
2. **Virtualizes resources & services** across a scaled out environment
3. **Orchestrates resources** to meet workload demands base on business-driven policies
4. **Scales** as business needs grows
5. **Secure**

1. **Scalability**
2. **Enhanced Robustness:** Reduces/eliminates the downtime to scheduler end-users while resources are being added or removed.
3. **Enhanced Reliability:** Monitor all scheduler daemons and other critical processes that the cluster needs i.e. license servers, and automatically restart them if they fail.
4. **Single reporting framework and Centralized Management & Administration framework** across various application heads residing on top of the Resource Broker

Platform's Approach: Variable Resources for Variable Demand

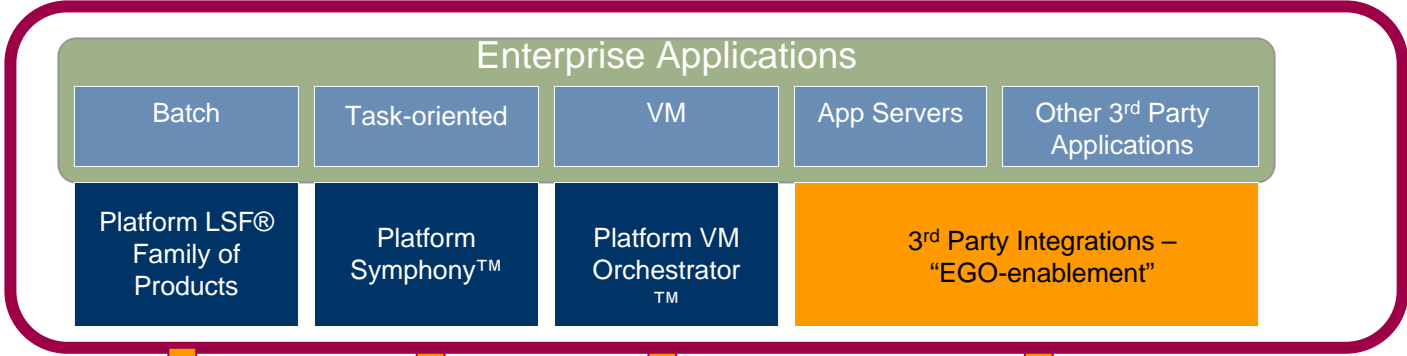
Decouple the applications from resources



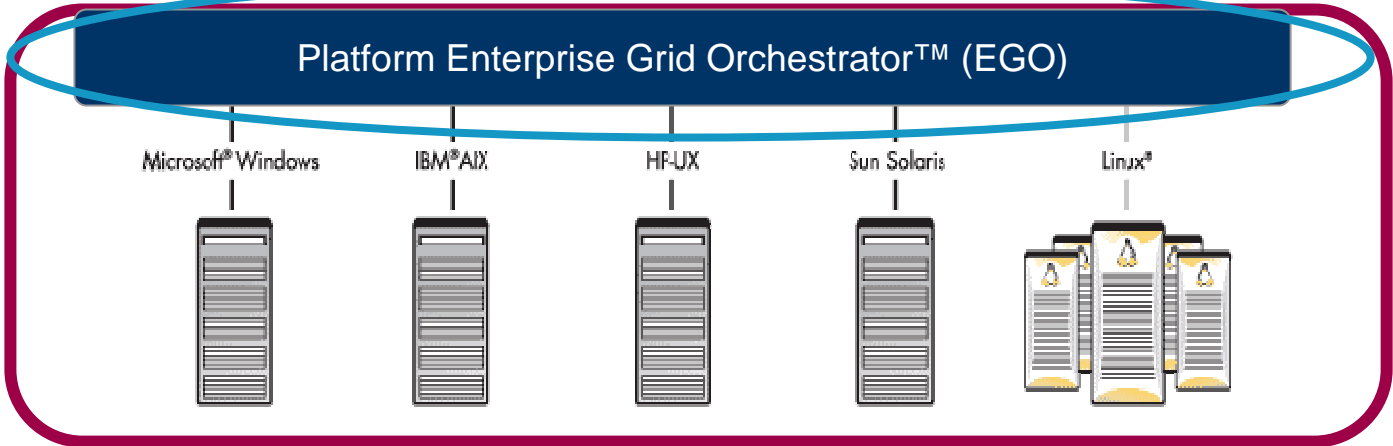
Create a shared resource pool

The Result is IT Agility

Application
Orchestration



Resource
Orchestration



Result: Model architecture that enables Enterprise Grid

The **only** infrastructure platform that delivers a shared virtualized pool of IT resources to meet the demand of multiple application types based on **business policies**.

Enabling IT to **allocate resources and accelerate application performance** at the speed of business demand.

Platform EGO - Key Features & Benefits

Features

**Resource and Service
Virtualization**

Virtualization

Improved manageability and
accessibility

**Dynamic, Policy-Driven
Resource Orchestration**

**Policy-driven
Orchestration**

Meet business SLAs & increase
resource utilization through ownership,
borrow/lend sharing business policies

**Centralized Management
Console**

Console

Improved operational and administration
efficiency

Failover Capability

Failover

Increased availability, reliability, fault
tolerance of application services

**Scalable, Production-Proven,
Extensible Architecture**

Architecture

Support business growth with
mitigated risk

Software Development Kit

SDK

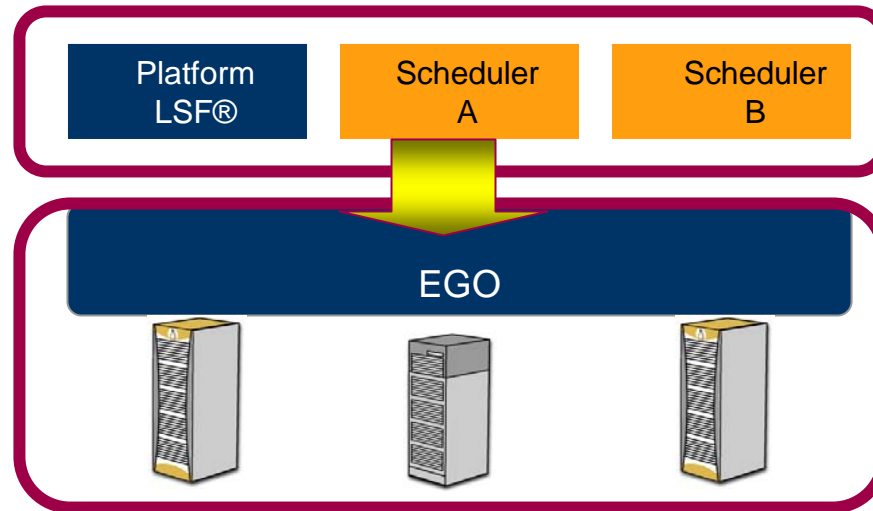
Enable on-boarding of any
application type

**Open, Standards-based
Security Framework**

Security

Modular security model supports use of
industry standard security architectures

EGO enables a multi-vendor strategy that enables co-existence (not replacement/fork-lift upgrades) of existing technologies.



Benefits:

Policy Driven
Orchestration

- Increased resource utilization
- Removal of bottlenecks

Virtualization

- Prevent or delay need for additional hardware acquisition
- Allows customer to maintain a multi-vendor strategy

Console

- Better manageability of and visibility into application resources

Failover

- Increase overall reliability of your applications

Application Servers / J2EE Platforms

- Web Logic, WebSphere, Jboss

Business Applications

- SAP, SAS
- CRM, BI vendors

Message Oriented Middleware (MOM)

- Tibco, Tuxedo, IBM MQSeries

EGO GRID enables any application type

Provisioning

- Sun N1, Opware, Altiris, Bladelogic, Veritas OpForce

Infrastructure Services

- FTP, mail, web servers

Platform
EGO

Database

- Sybas
Oracle

System Management Tools

- CA Unicenter, HP

EGO enables you to expand your opportunities beyond Platform Computing solutions

Technical Computing Tools

- Cluster management: Rocks, Scali
- FlexIm Servers
- Data – DICE project

Financial Services

- Gemstone, Gigaspace, Tangosol, GGY

Summary: Enabling the Enterprise-wide Resource Utilization

- ❑ Constantly evolving IT environments has resulted **cluster or grid silos**, each with its dedicated machines.
- ❑ Result; some cluster **underutilized** while others **missing their SLAs**
- ❑ Platform EGO offers an infrastructure platform which enables software applications to **run and co-exist** in a distributed heterogeneous environment.

- ❑ EGO can **integrate IT resource silos** together to create a shared enterprise-wide IT infrastructure.
- ❑ EGO enables extendable service management framework and can offer **infrastructure as a service** coinciding with **SOI** that orchestrates and virtualizes IT resources resulting in improved application efficiency.

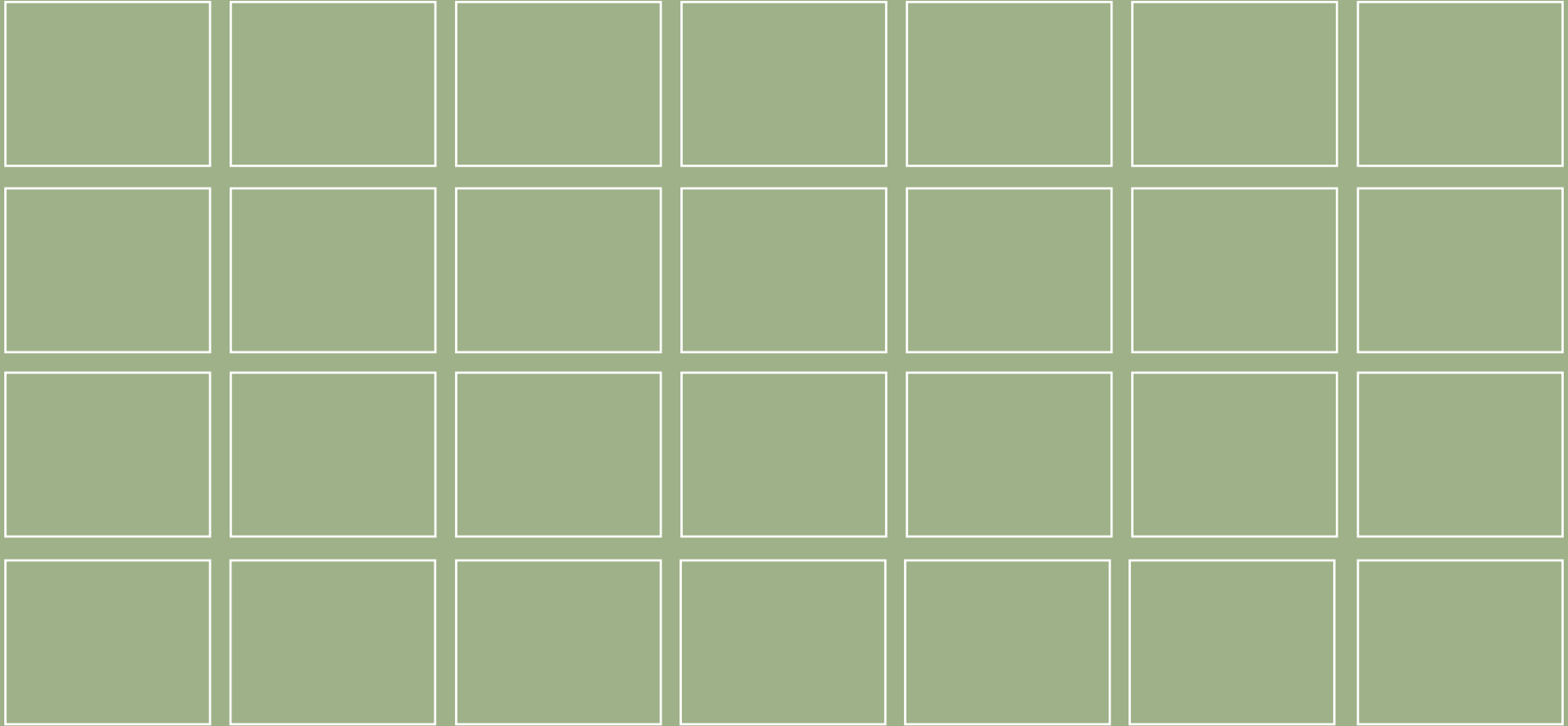
Enablement of an On-Demand Infrastructure

- ❑ Service Oriented Infrastructure (SOI) is virtual on-demand infrastructure that facilitates **real-time lending and borrowing** of compute resources and software licenses
- ❑ This resource virtualization **requires a new software licensing mechanism** that is cognizant of business efficiencies resulting from growing and shrinking of resources necessitated by SOI
- ❑ SOI built on EGO enables efficient hardware and software resources through **better SLA achievement, lower TCO and higher resource utilization** - resulting in IT agility and improved productivity.



Q&A

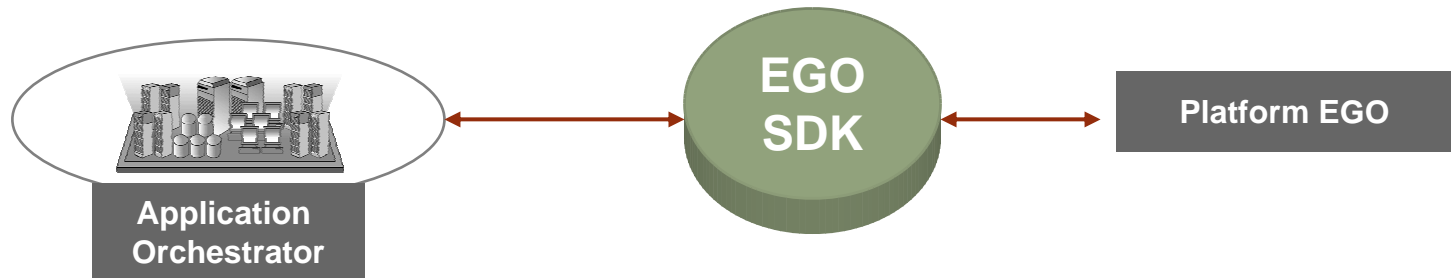




Thank You



Application Orchestrator & EGO Interactions



Q. What resources are available for my application based on current usage?

A. Resources available (Host1, Host2, etc) for Consumer

Q. Submit Allocation Request ?

A. Allocate Hosts to Consumer

Q. Run my Services on EGO

A. Start Up required Application infrastructure (Activities and Services)