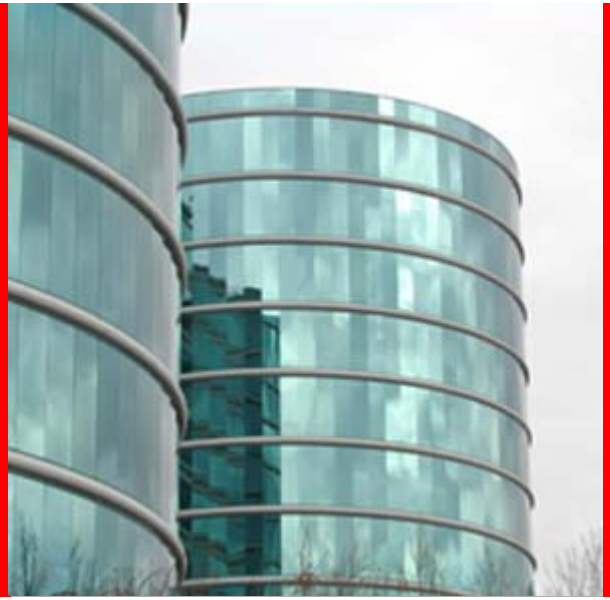


ORACLE®

A typical Enterprise Grid: Characteristics and Challenges

Oracle in R&D **Programme**
Graeme Kerr, Monica Marinucci

Background: filling the gap!

Enterprise Grid

Characteristics

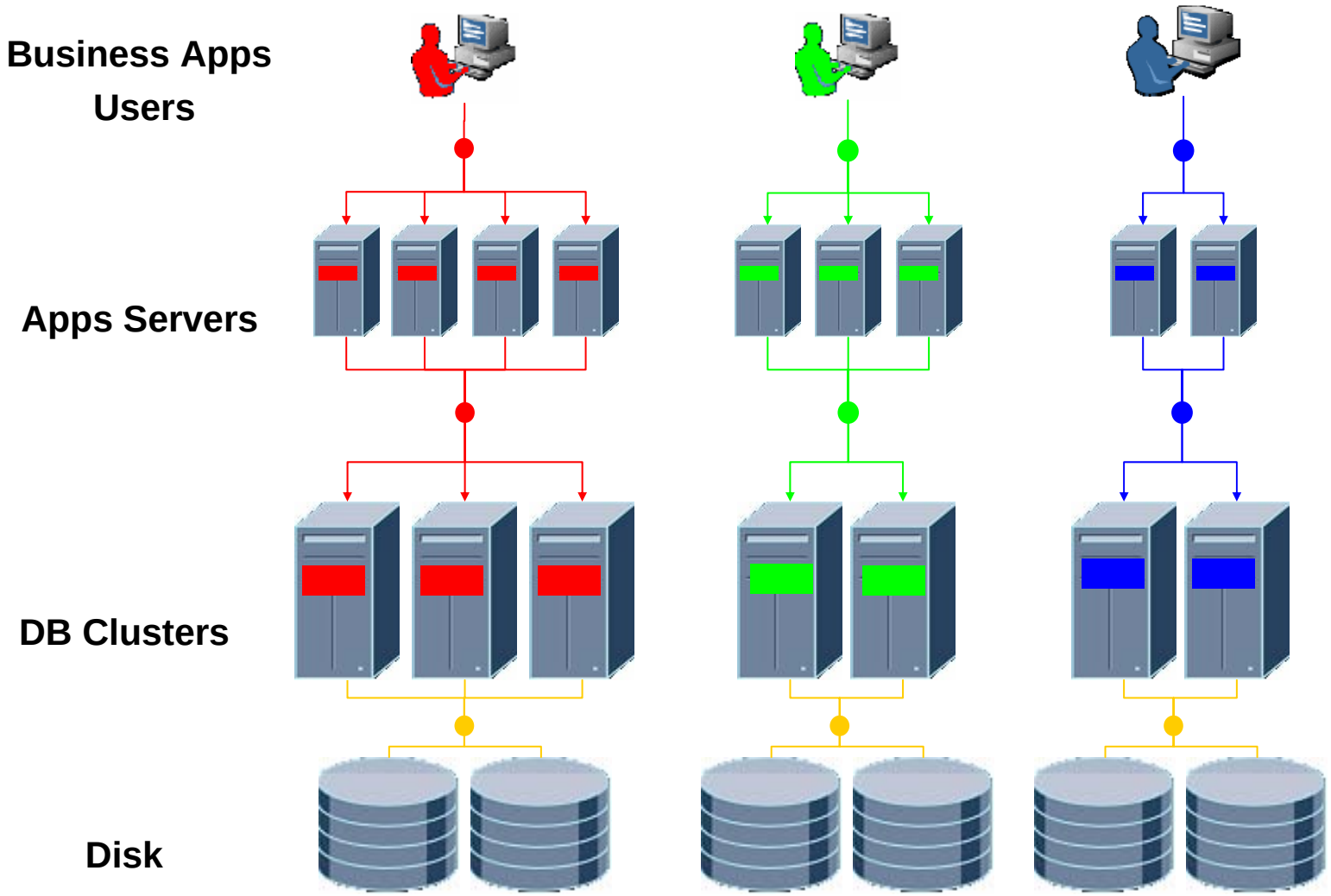
Differing views of Grid

The Enterprise View

- Within the Firewall
- Driven by need to reduce Data Centre costs
  - Low Resource Utilisation
  - Cost of complexity
  - Need to keep pace with Business Change.
- Focused on Service provision rather than Resource provision

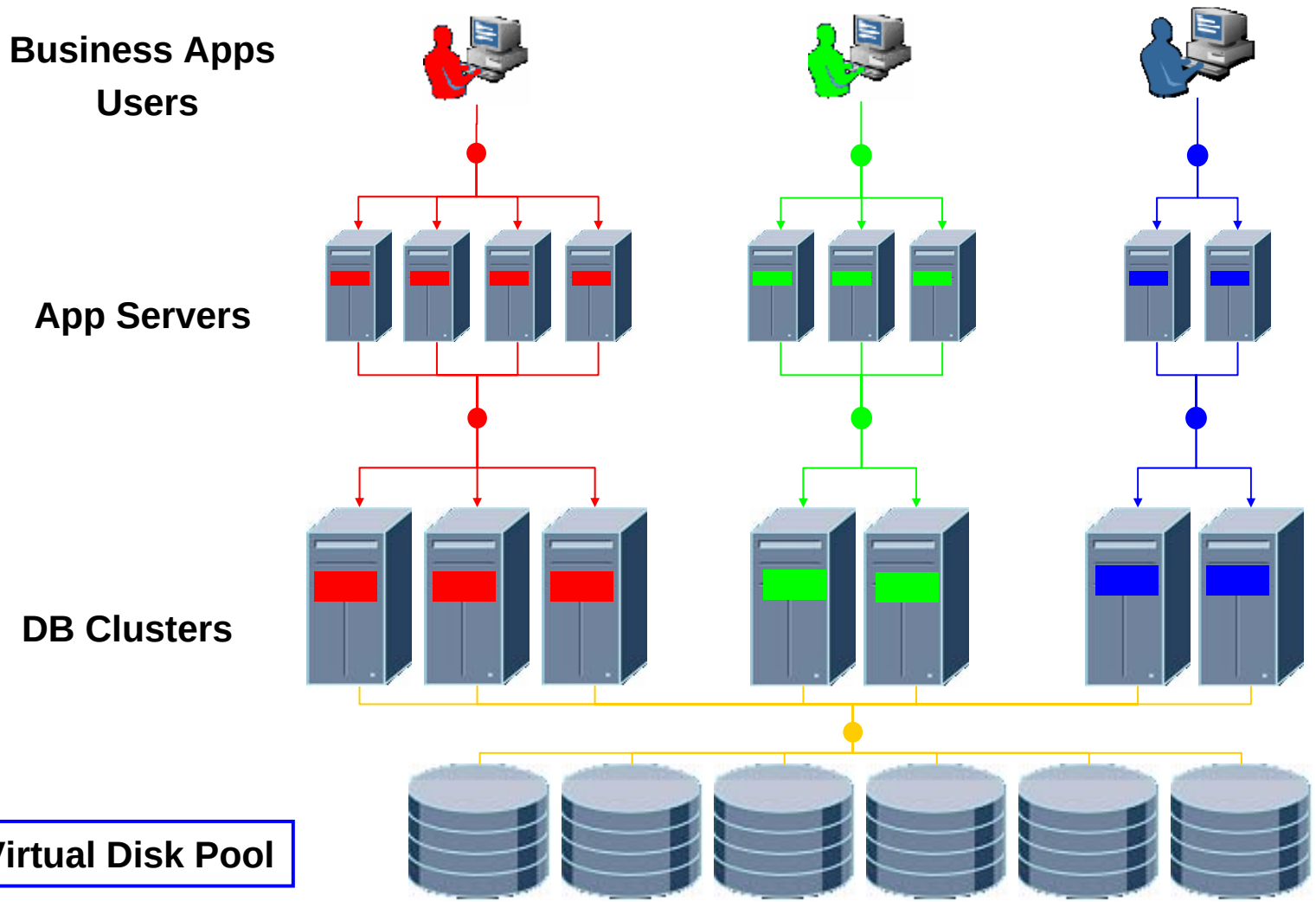
Traditional Data Center

Silos of Applications



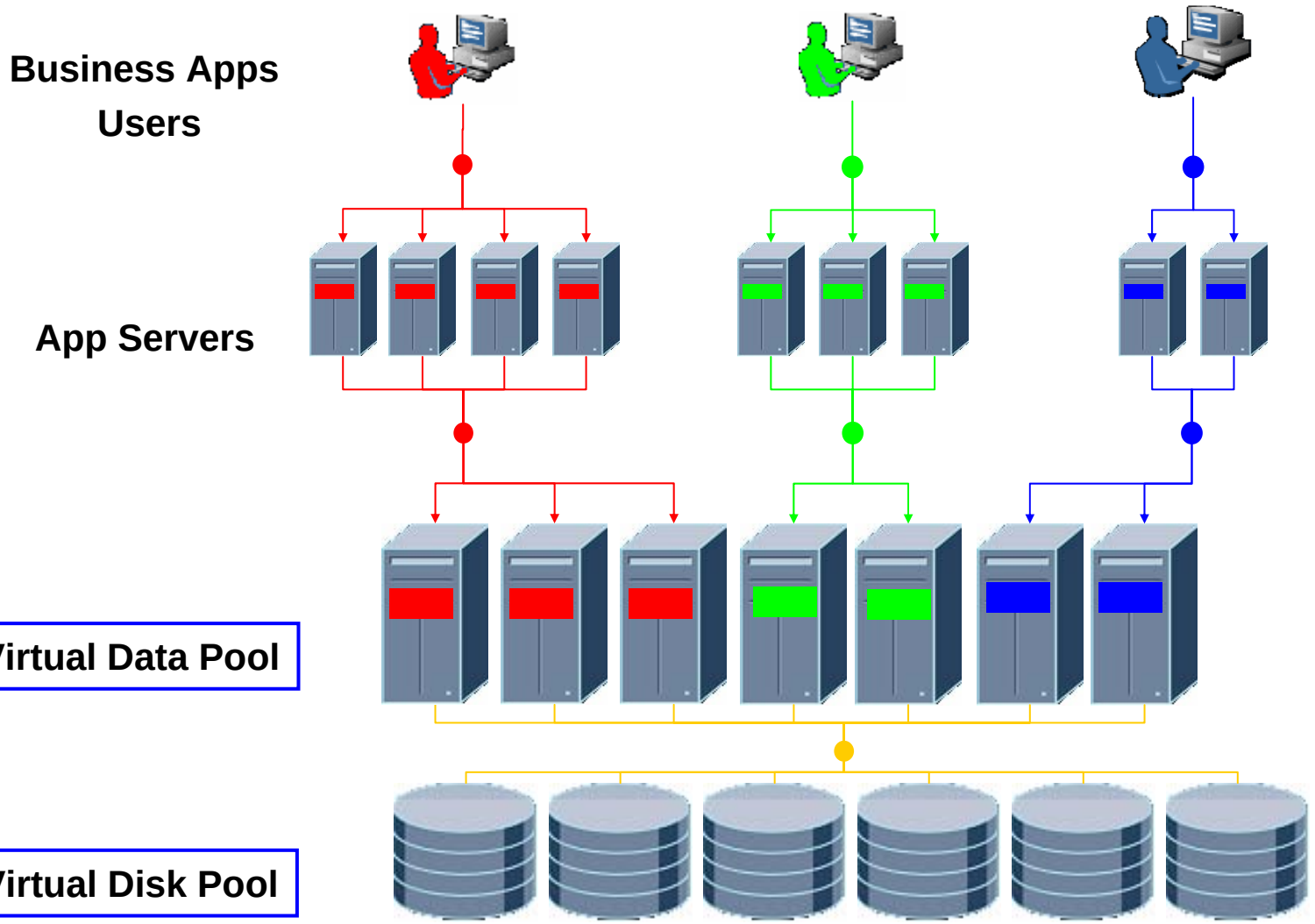
Enterprise Grids

Pools of Disks



Enterprise Grids

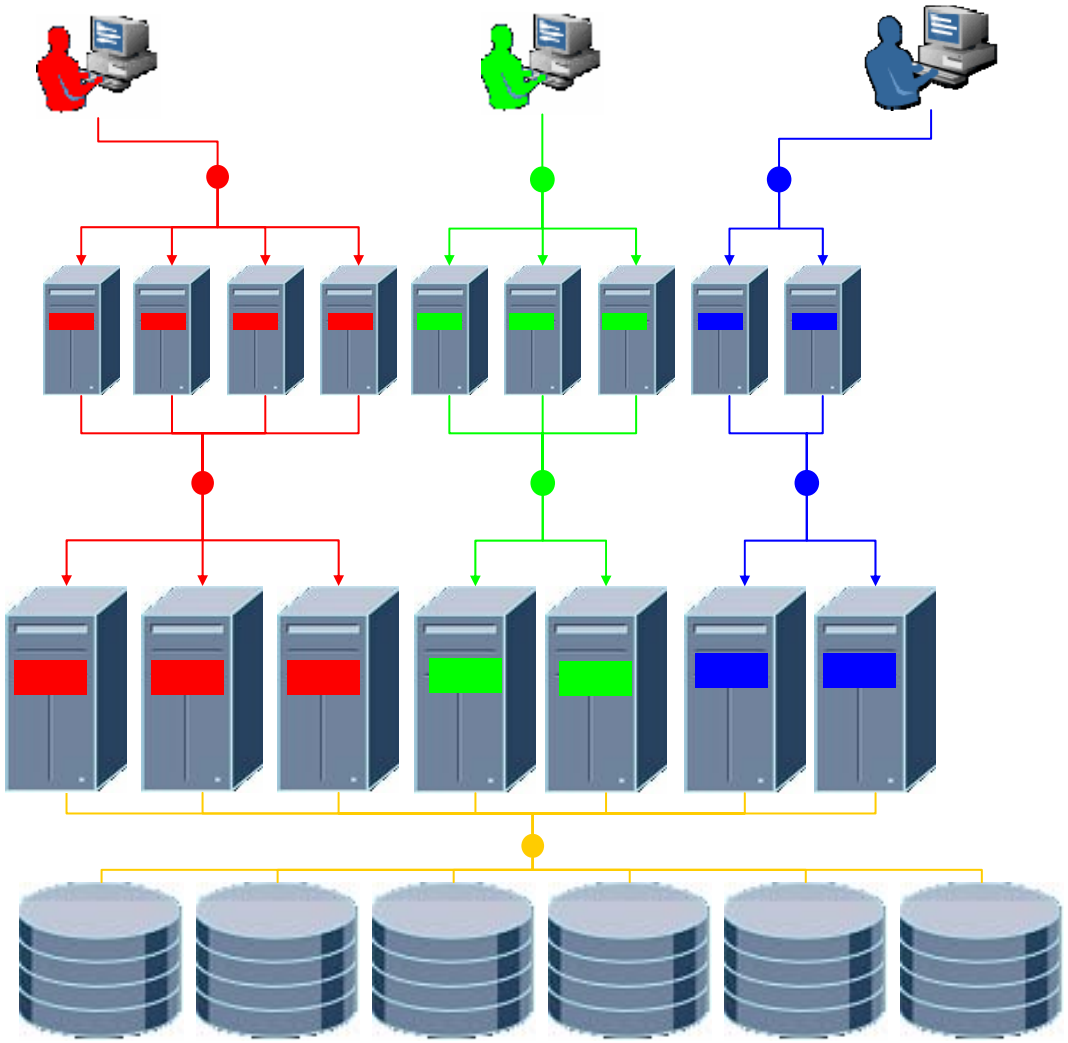
Pools of Disks, DB



Enterprise Grids

Pools of Disks, DB, Apps

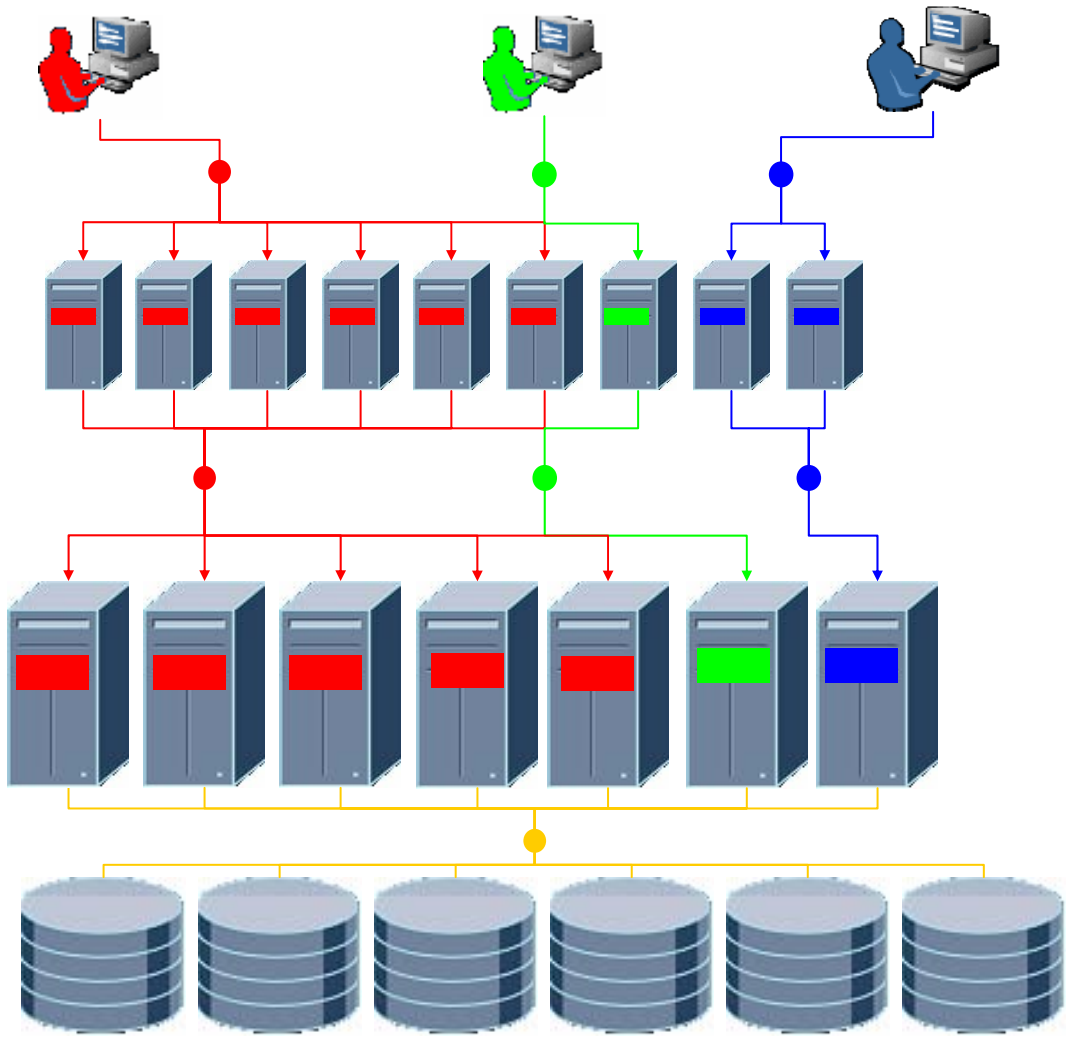
Business App Users



Enterprise Grids

Pools of Disks, DB, Apps

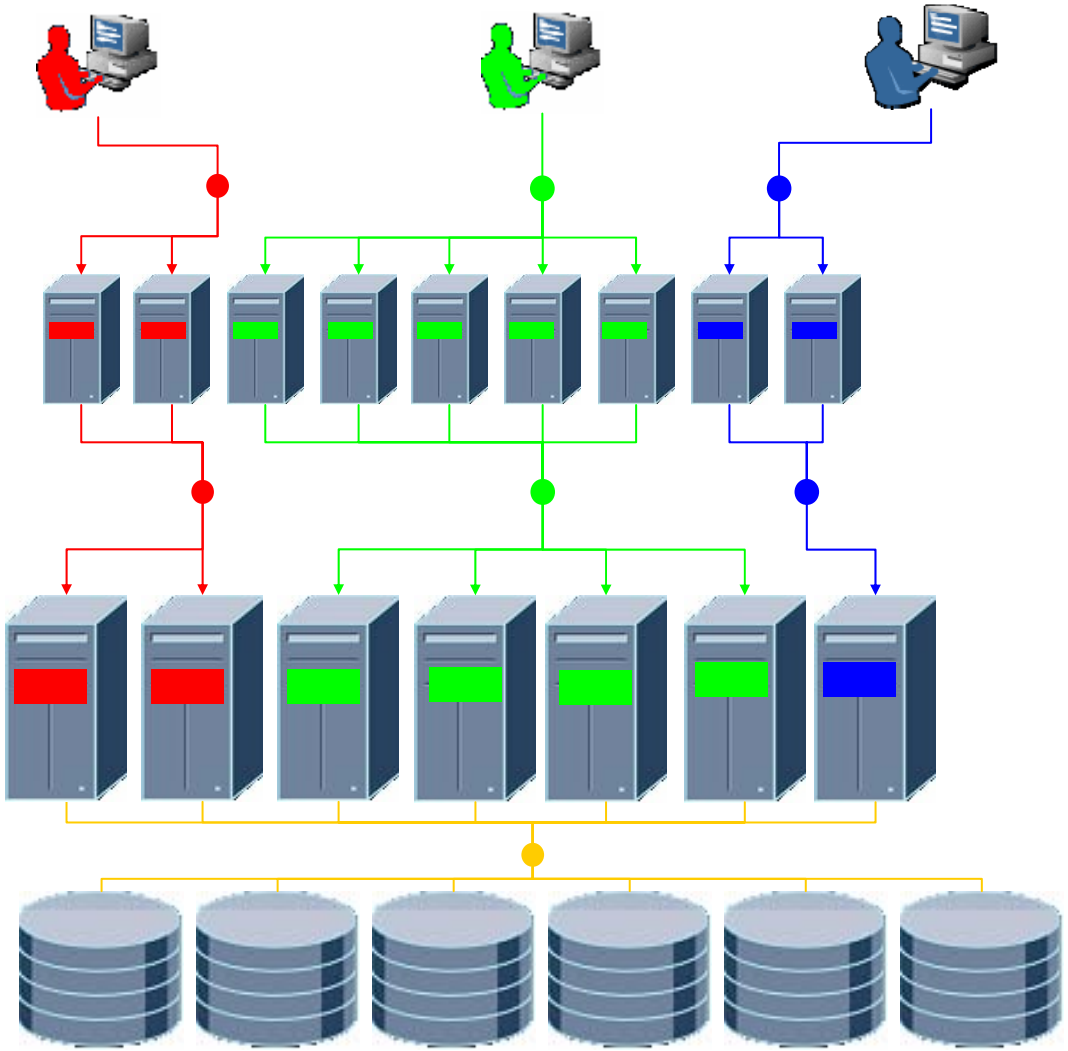
Business Apps Users



Enterprise Grids

Pools of Disks, DB, Apps

Business Apps Users



Virtual Apps Pool

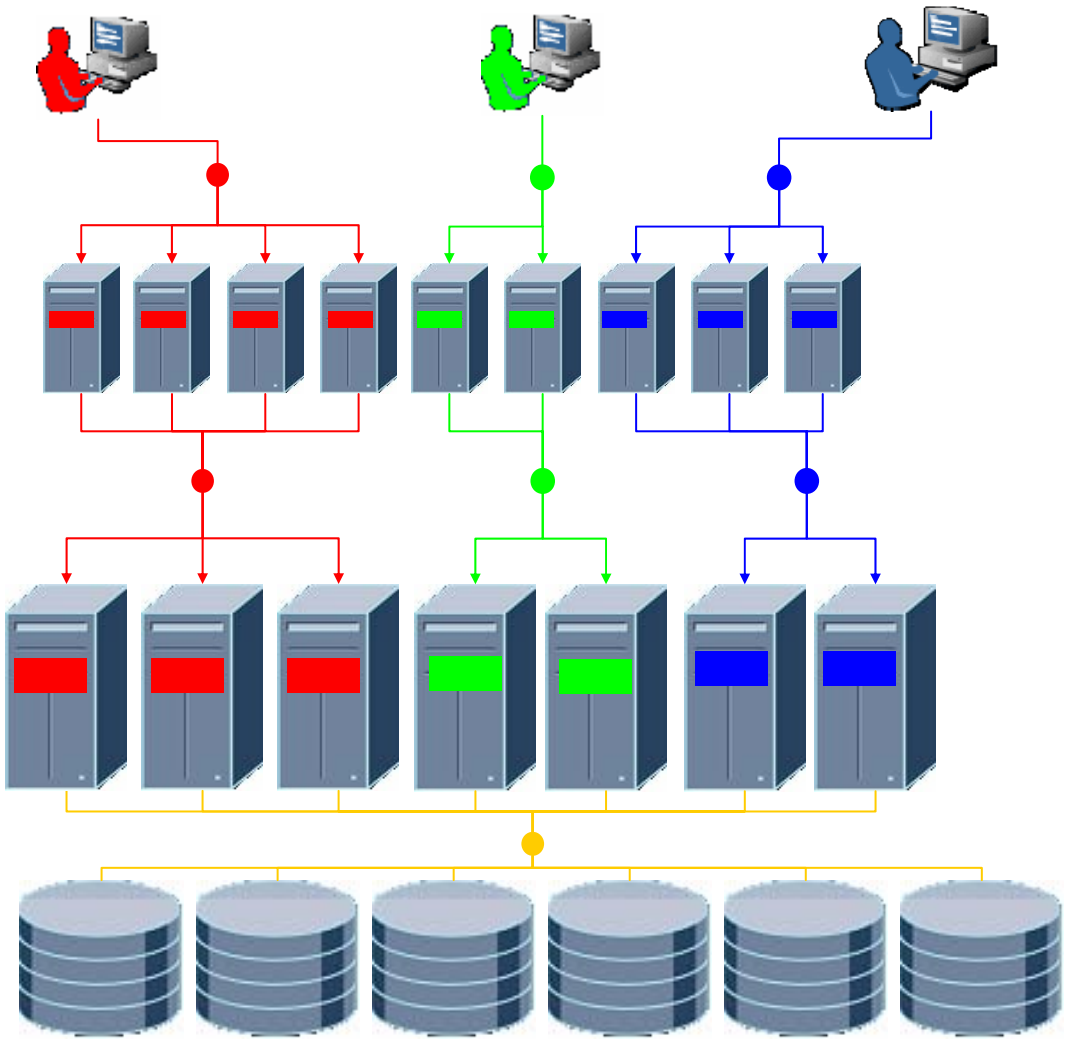
Virtual Data Pool

Virtual Disk Pool

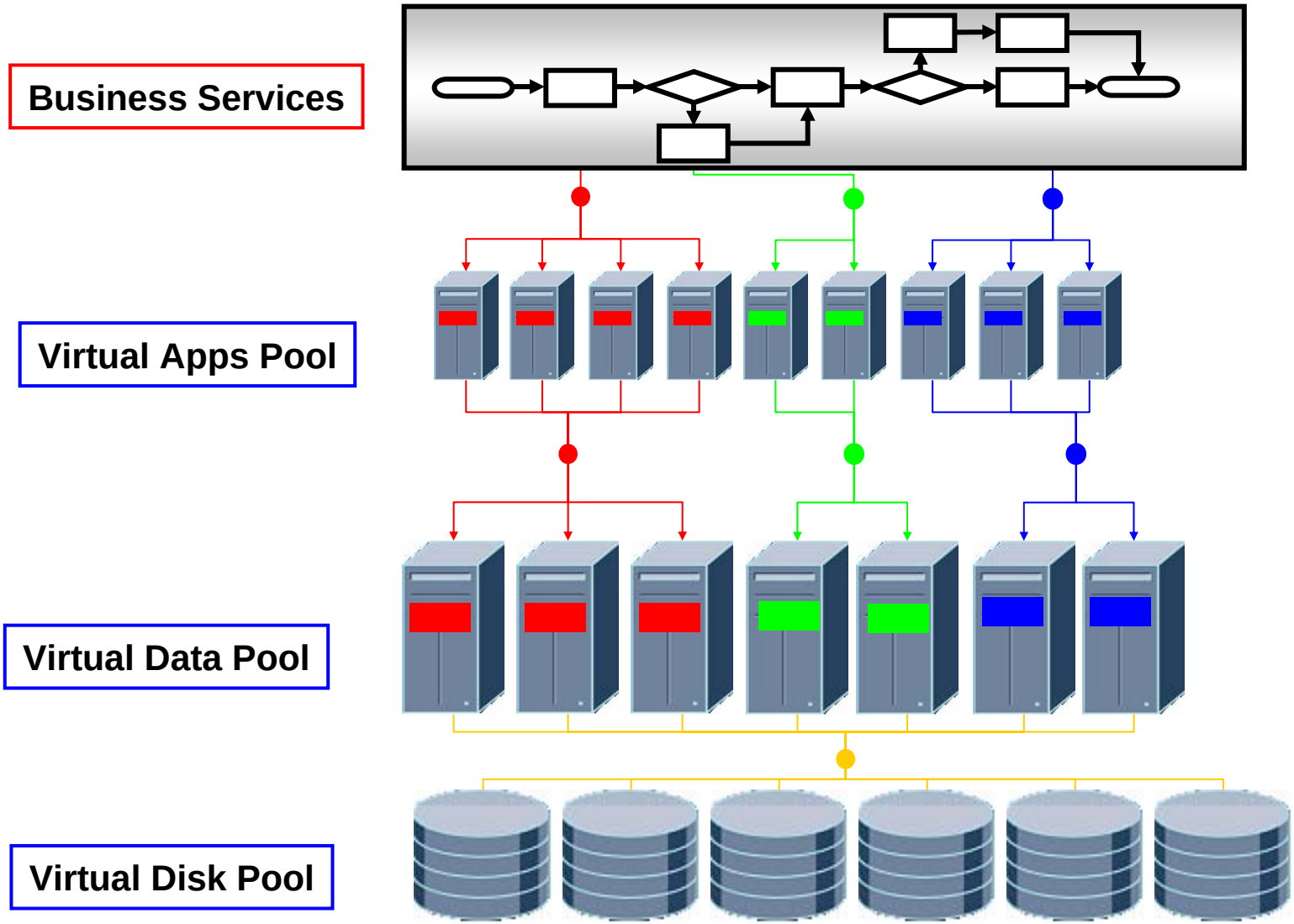
Enterprise Grids

Pools of Disks, DB, Apps

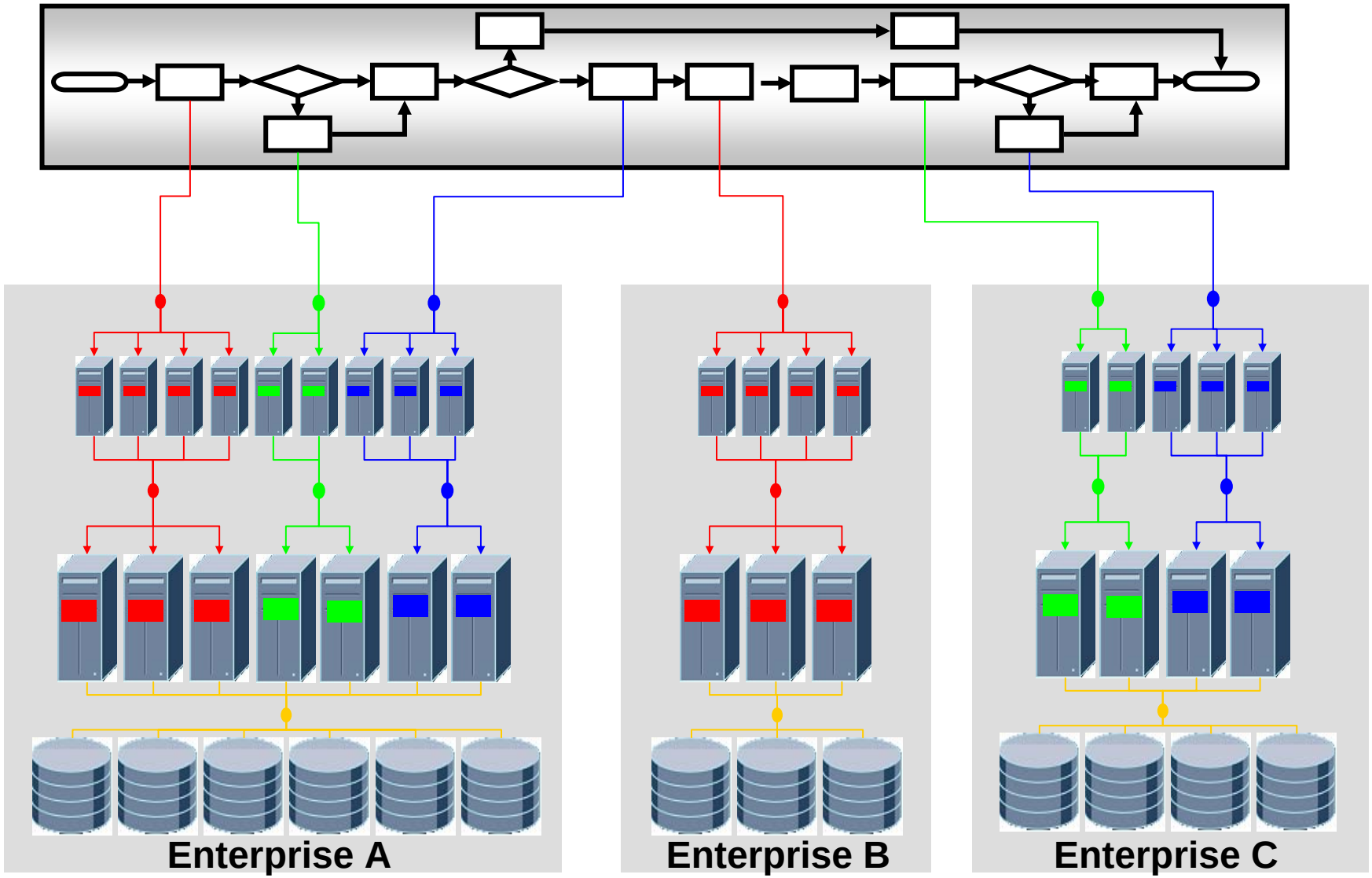
Business Apps Users



Process Orchestration



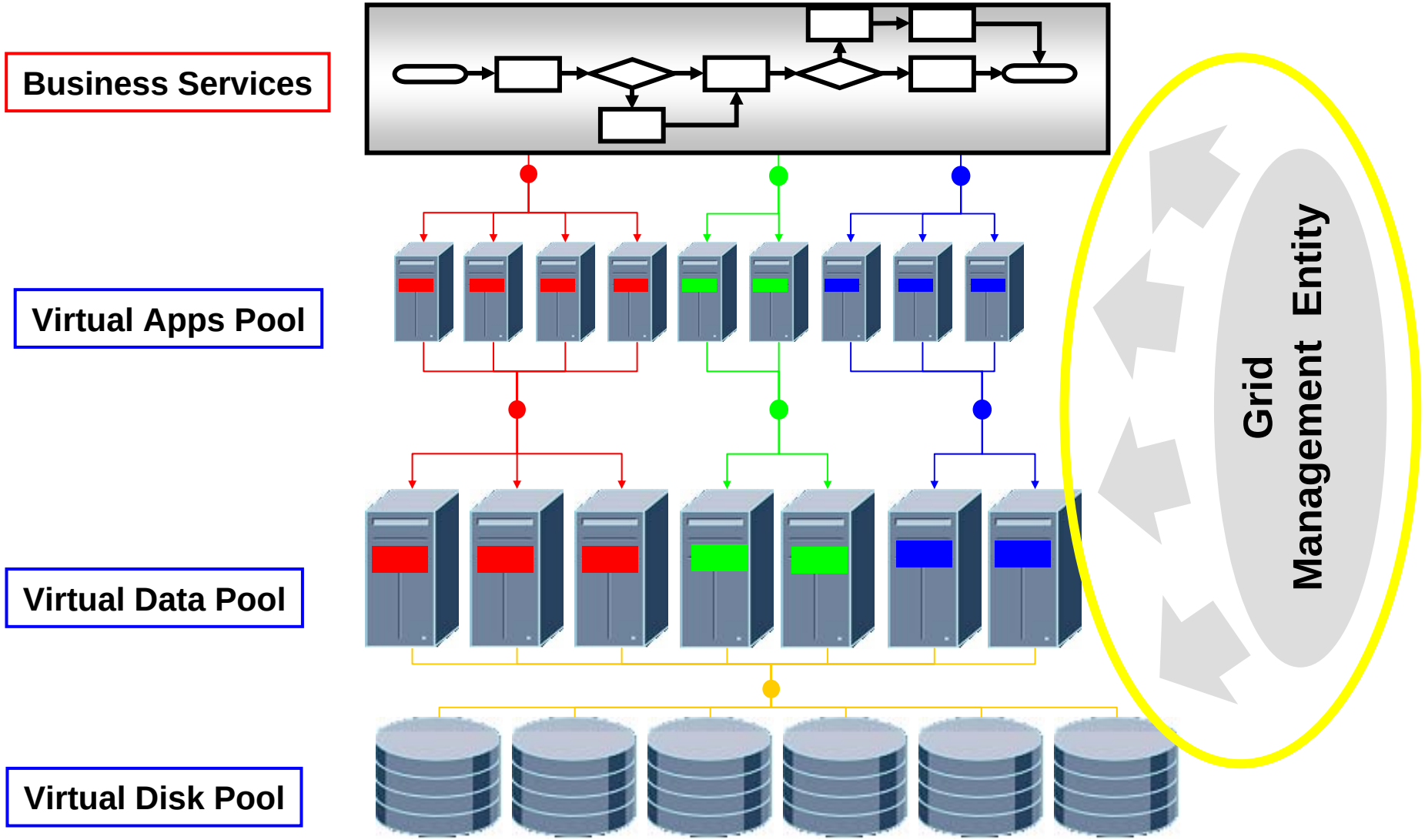
Process Orchestration



Enterprise Grid

Challenges

What is missing?



Grid Management Entity

- OGF (from previous EGA) Reference Architecture
- Manages each Grid Component
  - Relationships between Components
  - Component Life Cycle
  - Responsibilities include:
    - Provisioning, Management & Monitoring
    - capability exists and/or is developing.
- Responsibilities where capability is under study are:
  - Service Level Monitoring and Management
  - Billing & Accounting

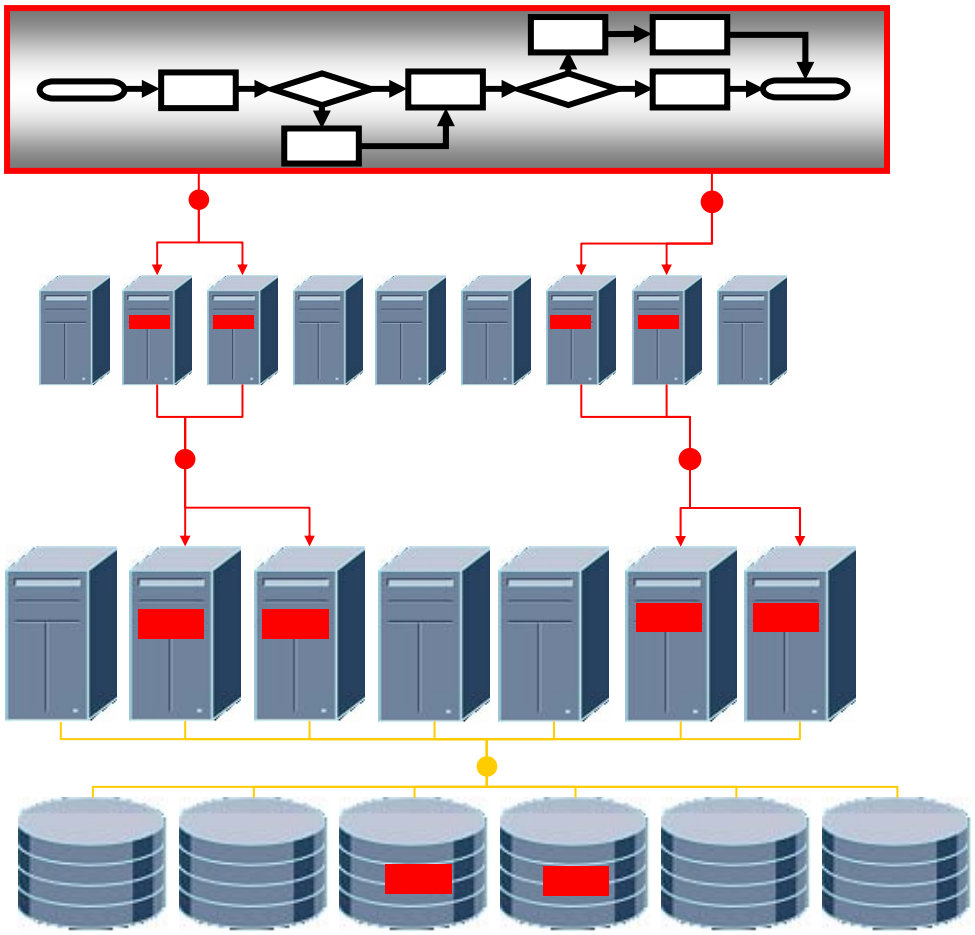
Service Levels & Billing/Accounting

- Service Levels
  - Language Issue : SLAs use business language but monitoring/management use IT language.

  E.G. SLAs require “100 Orders completed per hour”. How does that translate to servers, cpus, queries etc?
  - Only by understanding how ALL the components that combine to provide a Service are behaving can this translation begin to happen.

- Billing/Accounting
  - Metrics need to be collected at all levels NOT just at base level.
  - Billing can then be made for Service provided not necessarily resource consumed.

Example questions



"Red" Business Process

- What is the effect on the Business SLA if one server fails?
- Can I move a component to another service without impacting the SLA?
- How much resource is consumed to support a Service? Should the Service pricing be changed?
- New version of application changes the resource required. Should we tune or raise the price?

Service Levels & Billing/Accounting

- The GME will need to:
  - Understand the relationships between components.
  - Take the defined goals for each components and build a composite view of the resultant goal for a Service.
  - Manage the differences between Goals and Service requirements.
  - Once this understanding is there then life cycle management, change control, monitoring, accounting and billing etc becomes possible.

Don’t forget that this is all highly dynamic!

For More Information

http://search.oracle.com

Grid Computing 

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Thank you!