



## GridApp Systems Presents:

*Datacenter Consolidation with  
GridApp Clarity™*

Delivered by Matt Zito  
Chief Scientist, GridApp Systems

# GridApp Welcomes You

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- Thank you for attending
- Our presentation will last approximately 30 minutes
  - Topic: “Datacenter Consolidation with GridApp Clarity™?”
- Today’s Speakers:
  - Matthew Zito, GridApp Systems Chief Scientist

# About Matthew Zito

[www.gridapp.com](http://www.gridapp.com)

- Chief Scientist, GridApp Systems
- Formerly of EMC and Register.com
- Expert in using centralized management and automation to run large production applications

# Today's Agenda

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- GridApp Systems
- Legacy Infrastructure
- Consolidation Strategies
- Datacenter Migration
- Consolidation Procedures
- Concerns Around Database Consolidation/Migration
- How Database Automation Can Help
- GridApp Clarity™
- Q&A

# GridApp Systems

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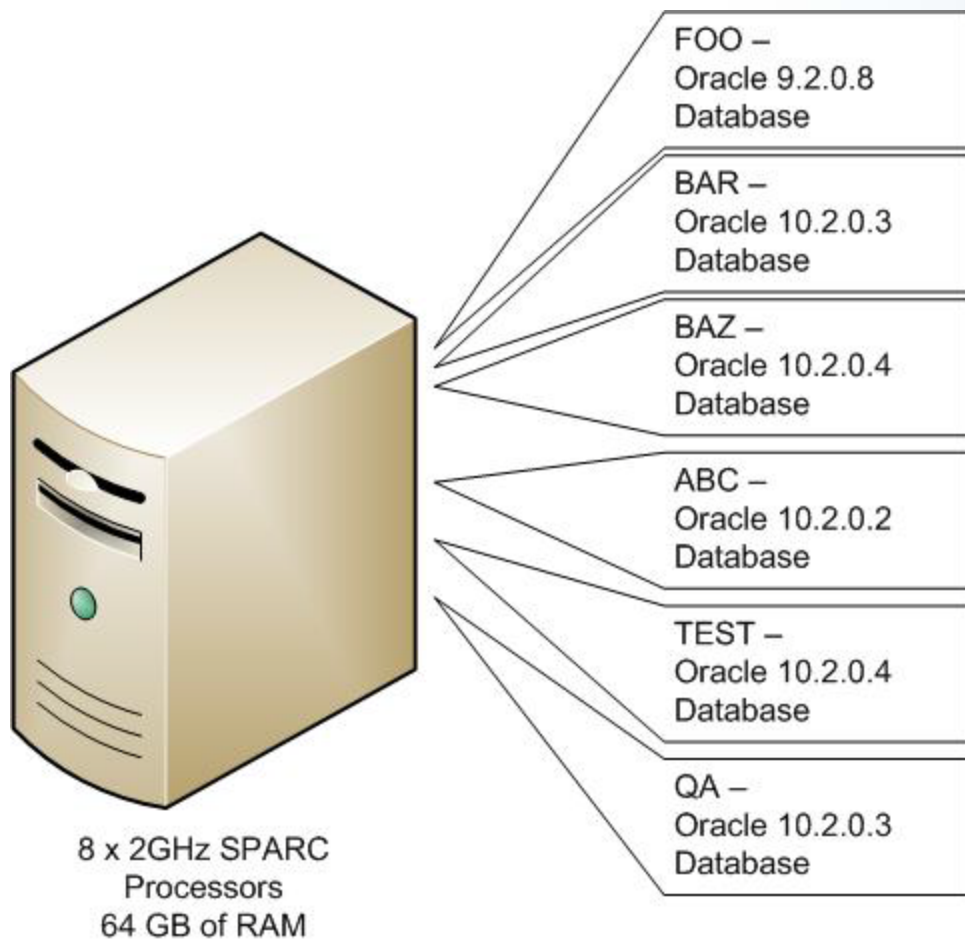
- GridApp Systems is the leader in complex database automation
- Founded in 2003, headquartered in NYC
- Flagship Product is GridApp Clarity™
  - Automates complex tasks such as provisioning, patching, migrations, upgrades
  - Currently managing 10s of thousands of databases worldwide
  - Customers across financial, pharmaceutical, telecommunications, e-commerce, and many other verticals

# Legacy Infrastructure

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- Three general classes of legacy database infrastructure
  - Old “big iron”
  - Slow, small hardware
  - Out-of-date clustered environments

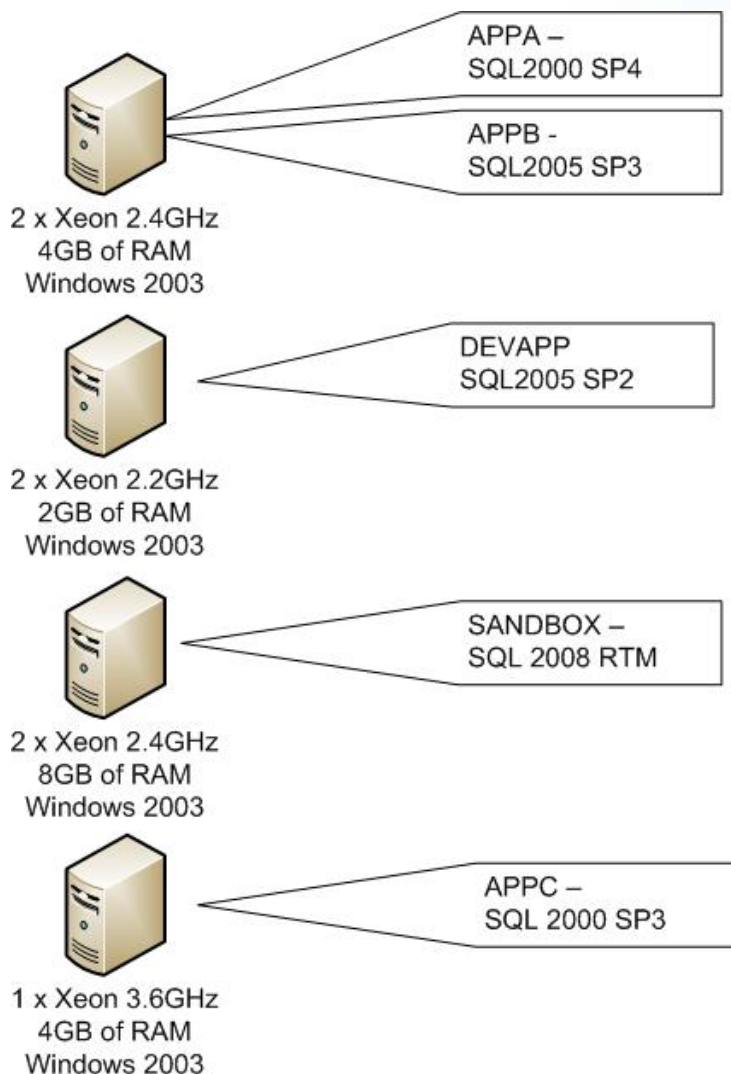
# Old "Big Iron"



## Key Problems

- Hardware support is prohibitively expensive
- Operating system may be at old/outdated revision
- As Oracle instances have been added, version drift has occurred
- Inconsistent configuration/standards /best practices on server

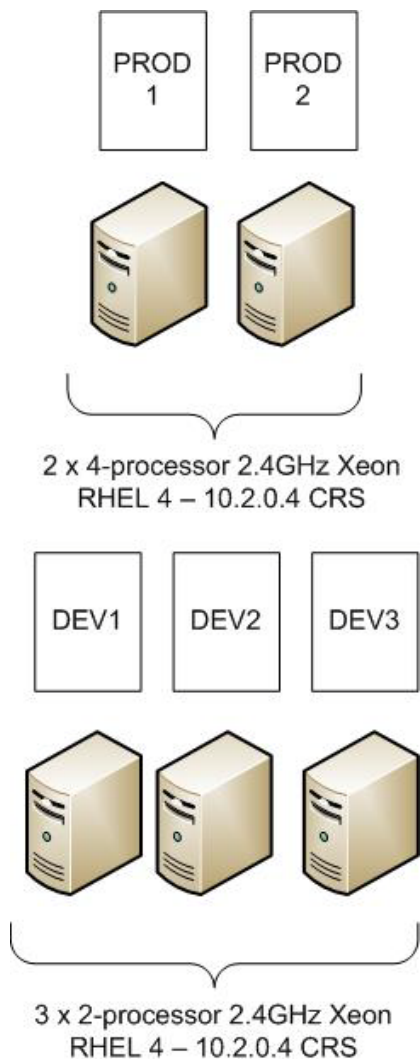
# Slow, small, hardware



## Key Problems

- Datacenter footprint/power/cooling
- Servers typically running at low utilization with inconsistent configurations
- Increased server administration overhead
- Complex licensing rules for varying machine/edition types
- Inconsistent patching across machines

# Out-of-Date Clustered Environments



## Key Problems

- Database software version at extended support
- Lower availability compared with new cluster versions
- One database per cluster increases server count
- Higher licensing costs
- Inefficient hardware footprint

# Datacenter Consolidation

- Can consolidate within a datacenter:
  - Fewer servers
  - Fewer databases
  - Fewer clusters
  - Fewer different versions
- Can consolidate between datacenters
  - Fewer datacenters
  - Lower-cost power/facilities/people

# Consolidation Strategies

- Fewer Servers
  - Virtualization – virtualize many small servers into one large server
    - Works best with departmental SQL Server instances
    - No support for Oracle on most VM platforms
  - Consolidation – consolidate on newer “big iron”
    - Very large machines are often not cost-competitive with smaller machines
    - Power/cooling footprint comparatively larger

# Consolidation Strategies – cont'd.

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- Fewer Databases
  - Migration – Convert many application schemas into one large database
    - Requires significant amounts of app dev involvement
    - Optimal for legacy applications, or data archive scenarios

# Consolidation Strategies – cont'd.

- Fewer Clusters
  - More DBs per cluster
    - Stack multiple databases per cluster
    - Purchase larger servers
    - Decrease license costs
    - Run the risk of resource contention
  - More nodes per cluster
    - Reduce administrative overhead
    - Focus on making a small number of very HA clusters
    - Increases likelihood of a SPOF

# Consolidation Strategies – cont'd.

- Fewer Versions of Databases
  - Focus on upgrading all databases to the latest version
    - Gain consistency
    - Create one baseline configuration
    - Reduce patching overhead
    - Requires application changes and testing
  - Can be combined with other consolidation approaches

# Consolidation Procedures

- Backup/Restore:
  - Take a copy of an existing database, point-in-time, restore it @ new server, cluster, datacenter
  - Database cannot be changed between backup and recovery
- Replication Target:
  - Create a replication relationship between source and destination
  - When time is right, “flip the switch”, and bring up standby
  - Guarantees consistency, but usually requires consistent database and OS version/platform, or may require third-party technology

# Consolidation Procedures – cont'd.

- Storage migration:
  - Repoint shared-storage devices to new servers
  - Can be very fast, but requires database and OS version consistency
  - Requires storage administrator intervention

# Concerns and Considerations

- Versions
  - Keep the same, or upgrade?
  - Which version to upgrade to?
- Clustered/non-clustered?
  - Convert to clustered as part of migration?
- Downtime
  - What's an acceptable downtime window for each application that accesses a given database?
- Rollback
  - Is it possible to recover back if the migration fails?
  - What is that procedure?

# How Database Automation Can Help

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- Planning
  - Create a set of “approved” migration procedures
  - Each procedure offers a different, approved strategy
  - For each database choose a procedure that offers the right mix of speed/downtime/risk for that database
- Consistency
  - Automation allows users to take complex procedures and guarantee execution and consistency
  - Provides standardized metrics for deploy and recovery processes
- Security
  - Enforces best practices around data protection
  - Mitigates risk of data loss, or security misconfiguration

# How Database Automation Can Help

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- Efficiency
  - Automation frees DBAs from executing a long, manual runbook
  - Migration procedures can be pushed down to junior DBAs
- Oversight
  - Centralized automation can allow management to monitor and track the progress of the migration
  - Provides audit trail for regulated environments
- QA
  - Enables automated QA
  - Trap potential problems early, before issues arise

# GridApp Clarity™ & Consolidation

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- Supports automated migrations and upgrades
  - Between machines or datacenters
  - In-place upgrades
- Standardized workflows and processes
- Centralized user access, authorization, accounting
- Administrators can create dashboards for tracking migration progress.

# Q&A

With Matthew Zito, Chief Scientist



**THANK YOU!**