



## Oracle 11g: How NOT to RAC Your Brain

Delivered by:  
Matthew Zito, Chief Scientist

156 5th Avenue  
New York, NY 10010  
P: 646.452.4100  
[www.gridapp.com](http://www.gridapp.com)

# Agenda

- The changing role of the DBA
- Oracle 11g – winners and losers
- Automation and 11g
- Oracle RAC and 11g
- ASM and Storage Automation
- Standardized 11g upgrades and deployments
- Conclusion

# The database landscape is changing....

- More functional requirements
  - Different types of content
  - More federation/mobility
- More complicated infrastructure underpinnings
  - Virtual Machines
  - Clustering
  - Replication
- New versions of databases
  - SQL 2005 (well, not SO new)
  - Oracle 11g

## ...which leads to

- Higher levels of required skill for DBA
  - Can't just know SQL anymore
  - Compliance –work w/auditors to define controls
  - Storage, clustering all increase DBA skillset requirements
- Overall greater complexity
  - More servers = more complexity
  - More databases = more complexity
  - More data movement = more complexity

# So what's to be done?

- DBAs can't be generalists anymore
  - Focus on development
  - Focus on new technology deployment
- Create process
  - Less worrying about what's happening to systems
  - More effective delegation
- Reduce manual interaction with databases
  - Tools
  - Scripts
  - Let software do the work



# Enter 11g

- Oracle 11g New Features
  - Rolling upgrades
  - Better Data Guard replication
  - In-database compression
  - Etc. etc.
  
- Many new features are additional cost
  - Active Data Guard - \$5k/processor
  - Advanced Compression - \$10k/processor
  - Total Recall - \$5k/processor

# The 11g Win/Lose Equation

- Oracle
  - Adds new features to differentiate from competitors
  - Encourages customers to continue to reinvest in Oracle
  - Drives additional incremental revenue from new feature licensing
  - Overall Verdict - **Winner**

# The 11g Win/Lose Equation

- Business/Application/Dev Types
  - Get new features to use for applications
  - Can get more efficient use out of hardware (re: Active Data Guard)
  - Better availability (re: Rolling Upgrades)
  - Better compliance (re: Total Recall)
  - Overall Verdict - **Winner**



# The 11g Win/Lose Equation

- DBAs
  - Responsible for upgrading to 11g
  - Under pressure to upgrade once new features are purchased (“We spent money – we want our money’s worth”)
  - Need to successfully implement said features, bugs and all
  - More complexity – now responsible for more replication management, data movement, testing upgrades, SQL replay, etc.
  - Overall Verdict - **Loser**

# 11g: A Chance for a Fresh Start

- New opportunity to implement automation and take control of 11g
- Establish standards, best practices, and methodologies through automation

# To RAC or Not to RAC?

- Upgrade from 10g RAC to 11g RAC
  - Enhancement release, not the same as 9iRAC to 10gR1 RAC
- Why aren't you running RAC?
  - Stable, widely deployed, intelligent
  - Add value to your organization
- RAC for scalability
- OCFS2 and ASM – remove need for traditional volume management tools

# RAC: Automation and Standardization

- Clusterware configuration
  - Clusterware is installed in an identical path on each node in each cluster
  - Consistent interfaces for VIPs, interconnects
- Storage management
  - Consistent storage architecture=easy administration
- Server platform and configuration
  - Pick one and settle – 64-bit Linux
- Database configurations
  - Standardize file paths, enable options, deployed patches, etc.



# ASM and Storage

- ASM is inherent automation
- Make your storage configuration consistent
  - Create disk groups comprised of identically sized disks
- ASM 11g
  - Improved mirroring – keeps track of what changed since the disk vanished; “fast resilvering”
  - SYSASM group for sys and storage admins

# Database Automation

- 11g: “A Chance to Do the Right Thing”
  - Get your environment standardized and consistent
- One consistent workflow for doing as many different kinds of environments as possible
  - Software-only installation with the OUI
  - OUI: “silent” and “suppressed”
  - DBCA templates: “seed” and “non-seed”

# Standardized Oracle Installation

- Response Files
  - Provide a way to reliably install Oracle in an identical configuration
  - Allows you to effectively define standards for how and where Oracle should be installed
  - Saves time – just click and go
- Basics
  - Two types of automated installations
  - Silent mode – won't ask any questions
  - Suppressed mode – uses a response file and prompts for missing parameters
  - Response files are in the format name=value

# Standardized Oracle Installation

- Process
  - Create an oraInst.loc file
  - Call the OUI with a response file
    - Response files can be created by hand or through the OUI
      - `./runInstaller -record -destinationFile /path/to/somefile`
  - Start the OUI with the response file
    - `runInstaller [-silent] [-noconfig] -responseFile responsefilename`
- Post-install, you can run other config assistants by hand, or use response files for those as well



# Standardized Oracle Installation

- Tips & Tricks
  - Test, test, test – it may take time to develop good response files for your organization
  - Try to limit the number of response files in use to keep things simple
  - It's possible to build a response file that is complete with the exception of certain parameters, which can be supplied on the command line – `runInstaller –silent "ORACLE_HOME_NAME=OraDBHome1"`

# Database Creation

- DBCA Response Files
  - Same format as the Oracle binary installer
  - Defines
    - Datafile & redo log locations
    - SID
    - Node list (in a RAC environment)
    - Overrides template init.ora parameters
  - Does not define schema
- Manual Database Creation
  - Uses SQL scripts to create the instance
  - Most reliable, reproducible method
  - Not as simple to customize

# Conclusion

- Oracle 11g: new features, new prices, new complexity for the DBA
- More efficient so DBAs can spend time learning the new features
- Three main target areas with 11g
  - RAC
  - ASM
  - Database provisioning and creation process
- Best practices and automation – the keys to a successful rollout



Q&A