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## What's New for Oracle Database 11gR2 on Windows?

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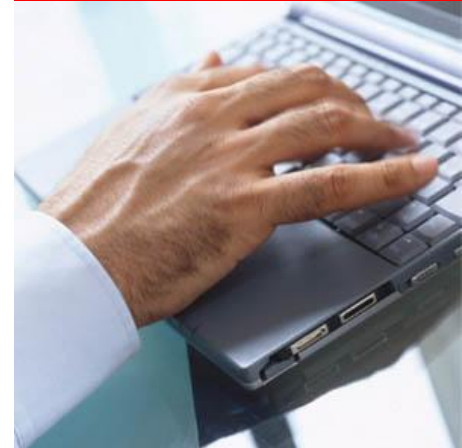
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# Agenda

- Windows Platform Support
- Install and Patching Enhancements
- RAC on Windows
- Office Integration
- .NET Integration
- Case Study: Waters Corporation
- Summary



A man in a dark suit, light blue shirt, and striped tie is sitting in a black leather office chair. He is gesturing with his right hand, palm facing up. Behind him are several rows of server racks. The racks have a perforated metal front and various control panels with buttons and indicators. The background is a bright, out-of-focus office space with large windows.

# Windows Platform Support

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# Windows 32-bit Platform Support

OS	10gR2	11gR1	11gR2*
Windows XP Professional	Yes	Yes	Yes
Windows Server 2003 and Windows Server 2003 R2	Yes	Yes	Yes
Windows Vista	10.2.0.4	Yes	Yes
Windows 7	10.2.0.5	No	Yes
Windows Server 2008	10.2.0.4	11.1.0.7	Yes

\* - RAC not supported for 32-bit Windows in 11gR2

# Windows 64-bit Platform Support

OS	10gR2	11gR1	11gR2
Windows XP, Windows Server 2003, and Windows Server 2003 R2, x64 Editions	Yes	Yes	Yes
Windows Vista for x64 systems	10.2.0.4	Yes	Yes
Windows 7 for x64 systems	10.2.0.5	No	Yes
Windows Server 2008 for x64 systems	10.2.0.4	11.1.0.7	Yes
Windows Server 2008 R2 for x64 systems	10.2.0.5	No	Yes
Windows Server 2003 for Itanium	Yes	No	TBD
Windows Server 2008 for Itanium	TBD	No	TBD



# Oracle Virtual Machine

- Supports Windows OS
  - Oracle VM Paravirtualized Drivers 2.0: [White Paper](#) and [Documentation](#)
- Oracle is a member of Microsoft Server Virtualization Validation Program.
- We are working towards completing all validations required by the program.
- The Oracle VM Windows Paravirtualized Drivers have successfully completed testing required by the Microsoft Windows Logo Program.
- Oracle DB 11.2 on Windows planned to be certified with OVM in CY2011



A man in a dark suit, light blue shirt, and striped tie is sitting in an office chair, gesturing with his right hand. He is positioned in front of a row of server racks. The server racks have perforated metal doors and various control panels. The background is a blurred office setting with large windows.

# Install and Patching Enhancements

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# Full Install for 11.2 Patchsets

- Fast and easier install of Patchsets
  - No need to install base release first and then upgrade to a patchset
- Out-of-place Server Upgrade
  - Improved customer experience
  - Improved testing
  - Less downtime and safer
  - Direct database upgrade from previous releases
  - DB upgrade can be done one instance at a time
  - In-place Server upgrade not recommended
- Client upgrade
  - Flexibility for both in-place and out-of-place upgrade

# Software Updates and Deinstall

- Software Updates Option
  - Dynamically download and apply software updates as part of DB installation
  - Download updates separately and later apply during install
- Deinstall
  - Clean deinstall
  - Script also available from OTN
  - Can be used to clean up after partial install or deinstall

# Online Patching

- Patch installation and removal without downtime
  - Do not need to bring DB instance down.
- Specially packaged shared library
  - Contains replacements for some of the product functions.
- OPatch used to install online patches in customer's environment
- Supported on both Windows 32-bit and x64.

A man in a dark suit, light blue shirt, and striped tie is sitting in a black leather office chair. He is gesturing with his right hand, palm facing up. Behind him is a large, silver Oracle database server rack with a perforated front panel. The rack has various labels and buttons, including 'TAPE', 'STANDBY', and 'XSCF'. The background is a bright, modern office with large windows.

# RAC on Windows

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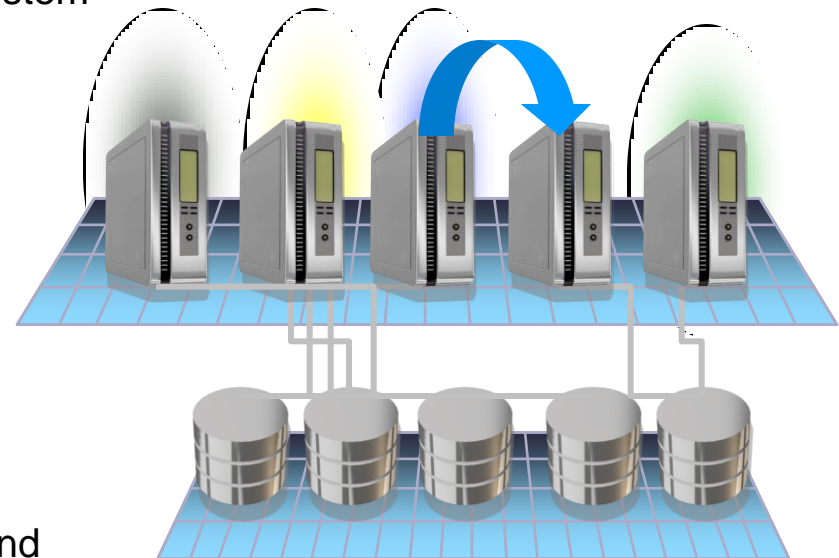
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# RAC One Node

## The “Always On” Single Instance Database

- Always On Single Instance Database
  - Online replacement of servers and storage
  - Online patching and upgrades of operating system and infrastructure software
  - Online database patching
  - Automated cluster failover
- Better consolidation
  - Extreme consolidation of servers & storage
  - Load balancing to protect service levels
- Enhanced virtualization
  - Extends and improves database availability and flexibility when running in a virtual server
- Lower cost dev/test platform for RAC
  - Develop and test against same tech stack
  - Lower Oracle license cost



# Oracle Database 11g Release 2

## Automatic Storage Management (ASM)

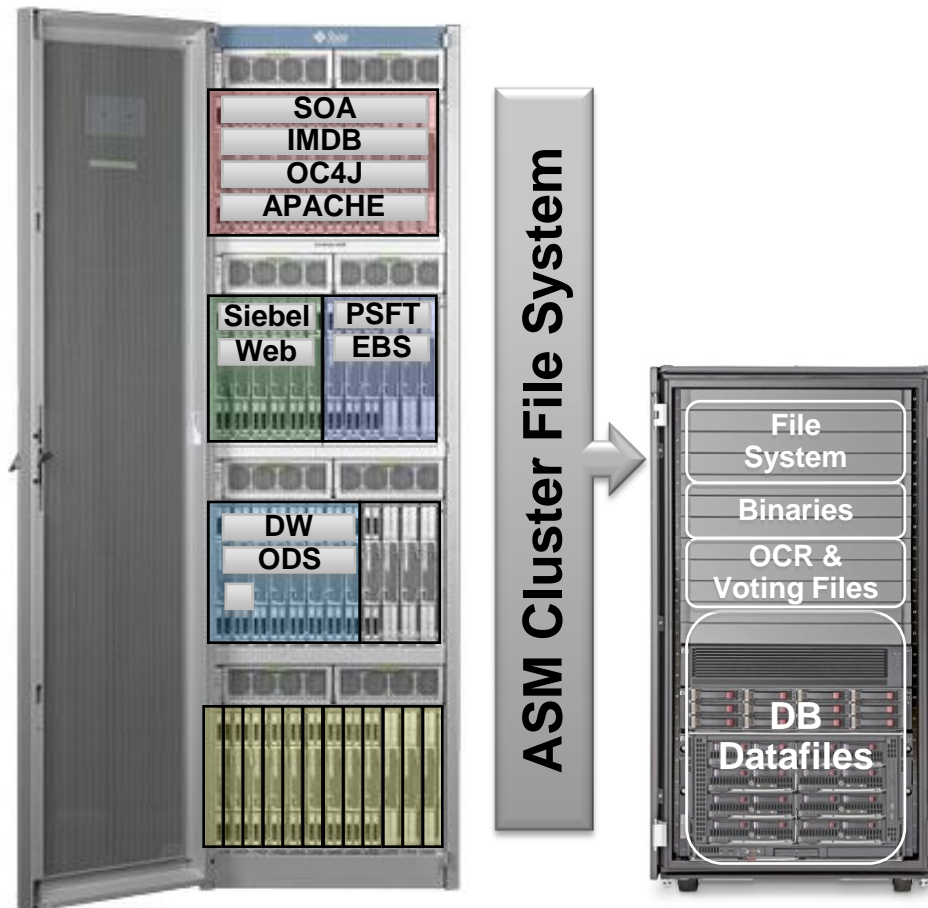


- The foundation for Grid Storage
- Easier to manage than file systems
- Reduces storage costs
- Provides best performance
- Intelligent Data Placement
- Stores all data



# Stores All Data

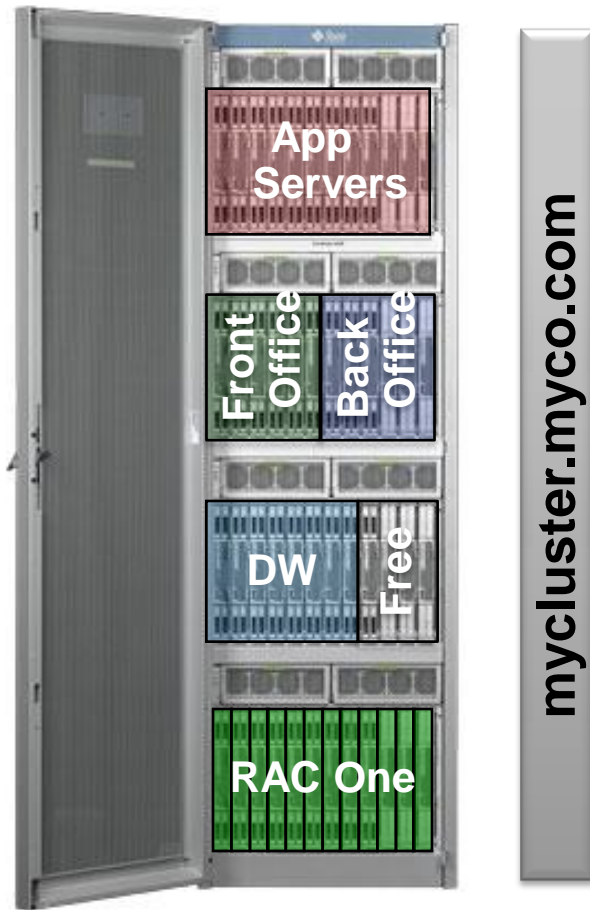
## ASM Cluster File System (ACFS)



- General purpose scalable file system
- Accessible through NAS protocols (NFS, CIFS)
- Multi OS platform (Linux and Windows at initial release)
- Dynamic Volume Management Supported
- Read Only Snapshots Supported

# Oracle Database 11g Release 2

## Simplified Provisioning



- New intelligent installer
  - 40% fewer steps to install RAC
- Nodes can be easily repurposed
  - Nodes can be dynamically added or removed from the cluster
  - Network and storage information read from profile and configured automatically
  - No need to manually prepare a node.
- SCAN--Single cluster-wide alias for database connections simplifies connections
  - Clients need not be aware of cluster configuration changes

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# MS Office Integration

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# Managing MS Office content

- Data stored transparently in Oracle DB via WebDAV
- Event handlers unzip .docx file, store document.xml in binary xml table
- Applications can Perform
  - Fragment-level search and extraction
  - Join with other relational content and render that in document
  - Fragment level access can provide useful transformation e.g. privacy
  - Use standard SQL/XML or Xquery
- Results can be published in various formats

# Oracle Database 11g: Embedded OLAP

## Rich, Dimensional Analysis in Oracle

- Rich analytic content embedded in the Oracle Database enhances the Data Warehouse
  - Makes BI applications smarter and more valuable to business users
  - Improves BI application developer productivity
  - Is centrally managed in the database for a single version of the truth
  - Is easily accessible by both relational (SQL) and dimensional (MDX) tools



**... available in  
OBI via SQL ...**

**Rich analytic content in Oracle cubes ...**

## SQL to Tables

# SQL to Cubes

The screenshot displays the Microsoft Excel 2003 interface. The main window shows a PivotTable titled "Quarterly Sales by Product Category". The PivotTable is structured with "Quarter" as the row field and "Product Category" as the column field. The data is summarized for the years 2007 and 2008. The PivotTable includes a "Total" column and a "% of Target" column. The interface also shows the "PivotTable" task pane on the right, the "Data" tab, and the "PivotTable" menu options.

Quarter	Sales	Sales YTD	YTD Pct	YTD % Chg Pct	3 Yr Moving Total	% of Target	
Q1-2007	2,861,711	2,861,711	23.020,821	1.1	11,666,884	107.52,000	28
Q2-2007	2,898,207	5,759,918	52.566,903	0.8	12,203,248	107.52,000	54
Q3-2007	3,192,467	8,952,385	77.918,328	0.4	14,475,497	107.52,000	81
Q4-2007	3,540,146	12,502,531	107.507,000	0.0	16,021,193	107.52,000	117
Q1-2008	3,777,198	3,777,198	26.257,265	20.3	16,826,881	112.53,000	125
Q2-2008	39,581,406	43,358,605	325.364,346	19.3	127,806,815	113.53,000	108
Q3-2008	36,862,813	80,221,418	584.064,004	14.1	146,638,210	113.53,000	83
Q4-2008	46,568,417	127,806,815	909.567,265	14.1	158,543,260	113.53,000	114
Q1-2009	4,692,732	4,692,732	4,280,261	0.4	17,377,966	108.26,000	25
Q2-2009	5,066,817	9,759,549	7,201,944	0.1	18,566,166	108.26,000	40
Q3-2009	4,315,065	14,074,614	11,882,360	0.4	19,226,481	108.26,000	33
Q4-2009	4,923,262	17,919,236	16,264,263	10.2	21,264,481	108.26,000	110



## ... and native Excel Pivot Tables via MDX

The screenshot displays the Microsoft Excel 2010 interface. The main window shows a PivotTable and a PivotChart. The PivotTable is based on the 'Sales' data source and is filtered by 'Region' (All Regions). The PivotTable shows sales data for 'Sales Reps' (All Sales Reps) across various categories. The PivotChart is a 3D bar chart showing the same data. The chart has a title 'PivotTable PivotChart' and a legend on the right. The chart shows sales data for 'Sales Reps' (All Sales Reps) across various categories.



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# .NET Integration

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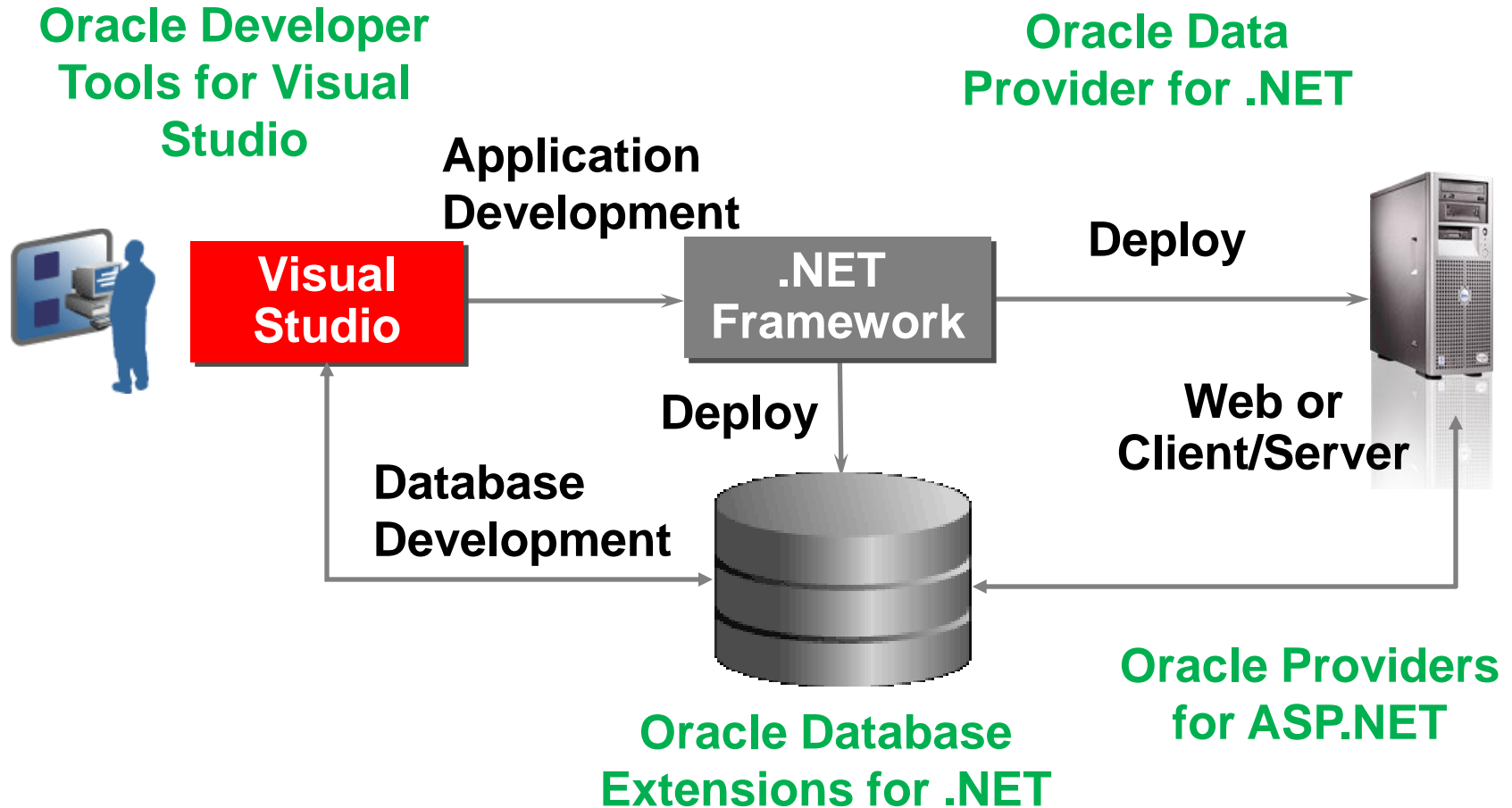
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# Oracle .NET – Large Developer Community

- Over 750K .NET developers for Oracle database
- Endorsements from Microsoft MVPs
  - Bill Evjen, founder of INETA
  - Andrew Brust
  - John Cook
- ODAC – top ten most downloaded OTN software

# Oracle .NET Development Environment



# .NET Integration

## Key New Features

- Visual Studio 2010 and .NET Framework 4 Support
  - Simship with Visual Studio 2010
- Oracle Streams Advanced Queuing support
- High Availability event notification and callback
- **Performance**

# Performance

## Oracle Data Provider for .NET

- Self-tuning
- Faster Data Retrieval
- Optimized Memory Usage
- Out of the box improvements – no code changes required
- For a test workload adapted from customer application
  - More throughput (60%)
  - Approx. 90% more transactions per second per CPU on both client and server

# Performance

## Visual Studio Integration

- SQL Tuning Advisor
  - Tune ad-hoc queries in Query Window
  - Tune inefficient application SQL detected by Oracle Performance Analyzer
- Oracle Performance Analyzer
  - Leverage Oracle ADDM infrastructure
  - Tune your application's use of the database during test or production phase



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D E M O N S T R A T I O N

# Oracle DB Tuning using Visual Studio

# .NET Integration

## Future

- **LINQ and Entity Framework**
- Fully Managed Oracle Data Provider for .NET
- Times Ten support of .NET



# Oracle Support for LINQ and Entity Framework

- Will require .NET Framework 4 and Visual Studio 2010
- Entity Data Model Wizard and Designer
- Query language interfaces
  - LINQ to Entities
  - Entity SQL
  - DML capabilities (insert/update/delete)

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# Case Study: Waters Corporation

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# Why Oracle Database on Windows?

- **World's Leading Database Technology**
- **Leverage low cost hardware and storage**
- **Reduce Operational Costs**
- **Highest Quality of Service at lowest cost**
- **Visual Studio and .NET integration to enable MS Developers to leverage the power of Oracle**
- **Choice of Development Tools and Technology**
- **Choice of Deployment Platform**
- **Strong Partner Ecosystem**
- **Focus on Customer Success**
- **Continuous Innovation**

# For More Information

## Sessions

Thu 10:30-11:30: Best Practices for Oracle Database and Client Deployment on Windows (Moscone South 302)

## Oracle Technology Network

- Oracle Database
  - <http://www.oracle.com/us/products/database/index.html>
- Windows Server System Center
  - <http://www.oracle.com/technetwork/database/windows/>
- .NET Developer Center
  - <http://www.oracle.com/technetwork/topics/dotnet/>

## Subscribe to the OTN .NET Newsletter

<http://www.oracle.com/technetwork/topics/dotnet/mailist-096598.html>

Contact [santanu.datta@oracle.com](mailto:santanu.datta@oracle.com) for your questions



# QUESTIONS ANSWERS

# Oracle Products Available Online



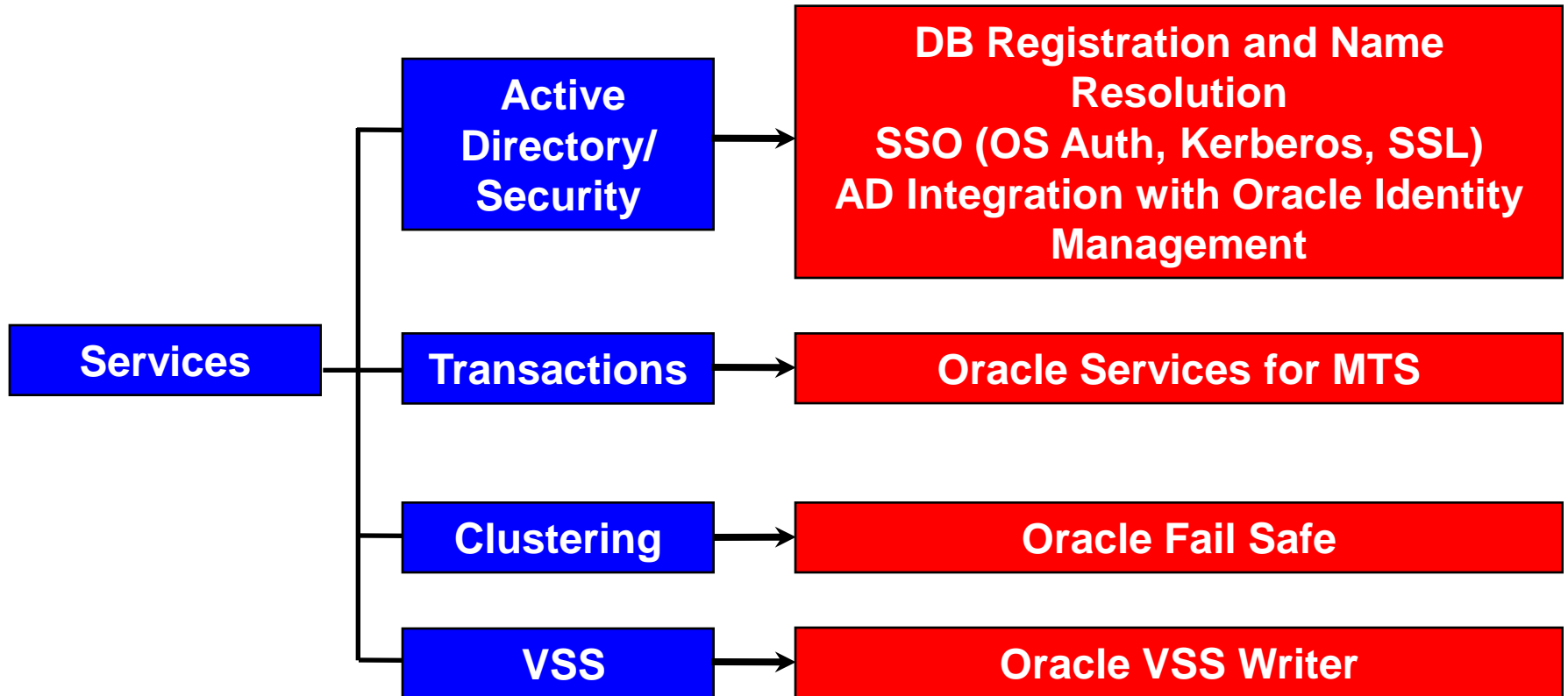
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# Integration with Windows Services





# Oracle Database 11g: Embedded OLAP

Excel Pivot Tables Require MDX to Connect to Oracle Cubes

Dimensional presentation in Excel Pivot Tables

Automatically discovers analytic content of the Oracle cube

Works naturally with other Excel features such as conditional formatting

Summaries and calculated measures are managed in Oracle cubes

The screenshot shows a Microsoft Excel window with a PivotTable titled "Same Store Sales Year of Year". The PivotTable is set to show data for "All Products" and is filtered by "Q1-FY2010" and "Q2-FY2010". The data is organized by "Categories" (Arizona Grill, Quarterdeck) and "Sales". The PivotTable Field List task pane is open on the right, showing the "Values" section with "Sales" selected. The "Report Filter" section shows "Categories" and "Fiscal". The "Row Labels" section shows "Sales YTD", "Sales YTD Year Ago", "Sales YTD Chg Year Ago", and "Sales YTD Pct Chg Year Ago". The "Column Labels" section shows "Fiscal". The "Defer Layout Update" checkbox is checked.

	Q1-FY2010	Q2-FY2010
<b>Arizona Grill *</b>		
Sales	446,530,896	456,210,576
Sales Pct Chg Year Ago	2.84%	4.25%
Sales YTD	446,530,896	902,741,473
Sales YTD Year Ago	434,185,444	871,801,203
Sales YTD Chg Year Ago	12,345,452	30,940,269
Sales YTD Pct Chg Year Ago	2.84%	3.55%
<b>Quarterdeck *</b>		
Sales	97,461,029	99,058,396
Sales Pct Chg Year Ago	5.97%	6.92%
Sales YTD	97,461,029	196,519,425
Sales YTD Year Ago	91,971,333	184,618,256
Sales YTD Chg Year Ago	5,489,696	11,901,169
Sales YTD Pct Chg Year Ago	5.97%	6.45%

	Q1-FY2010	Q2-FY2010
<b>Appetizers *</b>		
Sales Share of Parent Product	11.09%	11.06%
Sales Share of Parent Product Year Ago	11.07%	11.07%
Sales Share of Parent Product Pct Chg Year Ago	0.13%	-0.09%
<b>Deserts *</b>		
Sales Share of Parent Product	4.41%	4.42%
Sales Share of Parent Product Year Ago	4.42%	4.41%
Sales Share of Parent Product Pct Chg Year Ago	-0.08%	0.20%
<b>Entree *</b>		
Sales Share of Parent Product	68.09%	68.11%
Sales Share of Parent Product Year Ago	68.09%	68.09%
Sales Share of Parent Product Pct Chg Year Ago	0.00%	0.02%