Getting Started with Oracle and .NET

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Program Agenda

• Oracle and Microsoft
• Oracle and .NET – Getting Started
• Oracle Developer Tools for Visual Studio
• Oracle Data Provider for .NET
• Oracle Providers for ASP.NET
Program Agenda

- Oracle .NET Stored Procedures
- Additional Oracle .NET features
Oracle and Microsoft
Oracle’s Commitment to .NET

- ODP .NET 9i (2002-03)
- ODT & .NET SP 10g (2005)
- ODAC 2006
- ODAC 2006
- ODAC 2007
- ODAC 2007-08
- 64-bit ODAC (2008)
- ODAC 2008
- ODAC 11.2 R2 (2009)
- ODAC 2009
- ODAC 11.2 R4 (2010)
- ODAC 2010
- ODAC 11.2 R5 (2011)
- ODAC 2011
- ODAC 12c R1 (2012)
- ODAC 2012
- VS 2003
- .NET 2.0 (2005)
- VS 2005
- .NET 3.0 (2007)
- VS 2007
- .NET 3.5 (2008)
- VS 2008
- .NET 4 (2009)
- VS 2010
- EF (2010)
- .NET 4.5 (2012)
- VS 2012
- Managed ODP.NET (2013)
Oracle .NET – Large Developer Community

- Over 800K Oracle .NET developer community
- ODAC - Top 10 most downloaded Oracle software
- OTN .NET Developer Center
  - One of the most popular OTN tech centers
- Microsoft MVPs endorse ODAC
  - Bill Evjen, founder of INETA
  - Andrew Brust
  - John Cook
## Relationship with Microsoft

<table>
<thead>
<tr>
<th>Engineering</th>
<th>Marketing</th>
<th>Support</th>
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<tr>
<td>• Close collaboration with Microsoft Engineering teams</td>
<td>• Visual Studio Industry Partner (VSIP)</td>
<td>• Microsoft Premier Support Agreement</td>
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<td>• Access to pre-release Microsoft product drops</td>
<td>• Sponsorship at respective events – TechEd and OpenWorld</td>
<td>• Collaboration of support teams</td>
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<td>• Joint training, road shows, collateral, etc.</td>
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Oracle and .NET – Getting Started
Develop on Windows – Run Database on any Platform

ODT and ODP.NET 12c

Visual Studio

Windows

Windows

Linux

Solaris

Other

Oracle 12c, 11g, or 10g
OTN .NET Developer Center

- [http://otn.oracle.com/dotnet](http://otn.oracle.com/dotnet)
- Free ODAC downloads
- White papers, articles, and tutorials
- Demo and YouTube videos
- Help forums
- New feature request page
- Latest Oracle on .NET news
Oracle Developer Tools for Visual Studio
DEMONSTRATION

Visual Studio Integration
ODT Feature Overview

  - Server Explorer
    - Managed ODP.NET – New in ODAC 12c
  - Entity Framework Designer
    - Automatic REF CURSOR metadata generation – New in ODAC 12c
  - Multitenant container DB administration – New in ODAC 12c
  - Data Sources Window
  - Dataset Designer
  - TableAdapter Configuration Wizard
Automated ODT Connection Configuration

New in ODAC 12c

- Server Explorer Connection Dialog
  - Added EZ Connect connection type
  - For TNS
    - Retrieves current tnsnames.ora aliases in current Oracle Home
    - Use aliases defined in other Oracle Homes
      - 1. Dialog to search for tnsnames.ora in other homes
      - 2. Once found, available aliases displayed
      - 3. ODT copies aliases over to current tnsnames.ora
ODT Feature Overview

- **Automatic code generation – WinForm and ASP.NET**
  - Makes ASP.NET web application development very easy
- **Oracle Wizards and Designers**
  - Table/View Designer
  - Stored Procedure/Function/package Wizards
  - Grant/Revoke Privileges Wizard
  - UDT Designers and Custom Class Code Generation Wizard
  - Table/View Migration Wizard
  - Advanced Queuing (AQ) Designers
ODT Feature Overview

- **Oracle Data Window**
- **Oracle Database Project**
  - Edit and Run SQL scripts
  - SQL*Plus is built in
  - Source control integration
- **Integrated PL/SQL Editor and Debugger**
- **Oracle Query Window**
  - Ad Hoc SQL
  - Explain Plan
ODT Feature Overview

- .NET Stored Procedure Deployment
- Integrated help system
  - SQL, PL/SQL keywords
- Schema Compare – New in ODAC 12c
- Visual Studio 2013 – Coming soon
Oracle Data Provider for .NET
ODP.NET - Basics

- Implements standard ADO.NET
  - Adds Oracle DB-specific capabilities in addition
- Easy to use and intuitive
- Native access to Oracle Database
  - Utilize advanced Oracle Database features
  - E.g. RAC, performance, security, data types, XML, etc.
Automated ODP.NET Connection Configuration

New in ODAC 12c

- OUI copies tnsnames.ora and sqlnet.ora files from an existing Oracle Home into the new ODAC home
- If no existing Oracle Home present, OUI will ask for database alias and connectivity info
Key ODP.NET Features

- Connection pooling and performance counters
- Runtime Load Balancing: RAC and GDS
- Fast Connection Failover: RAC and GDS
- Transaction Guard – New in ODAC 12c
- Planned Outage – New in ODAC 12c
- Full PL/SQL support
  - Packaged, non-packaged, anonymous, autonomous
  - Batch SQL available with anonymous PL/SQL
Key ODP.NET Features

- Native Oracle data types
  - REF Cursors, LOBs, XMLType, UDTs, arrays, etc.
  - Boolean and Identity – New in ODAC 12c

- Performance
  - Self-tuning statement cache
  - FetchSize and RowSize
  - Client Result Cache
  - Continuous Query Notification
  - TimesTen In-Memory Database
Key ODP.NET Features

- Entity Framework and LINQ
- ODP.NET, Managed Driver – New in ODAC 12c
- Deployment
  - Oracle Universal Installer – great for individual installs
  - Xcopy Instant Client – great for large deployments
- .NET Framework 4.5.1 – Coming soon
Microsoft OracleClient Migration to ODP.NET

- **Microsoft OracleClient (MSOC)**
  - Microsoft’s ADO.NET provider for Oracle database

- **Deprecation announced June, 2009**
  - Microsoft strongly recommends using another Oracle provider
Microsoft OracleClient Migration to ODP.NET

- MSOC to ODP.NET migration
  1. Add ODP.NET reference
  2. Add ODP.NET namespace
  3. Update connection string (if necessary)
  4. Add one line of code for binding parameters
     - OracleCommand.BindByName = true; //C#

- [http://www.oracle.com/technetwork/topics/dotnet/index-085703.html](http://www.oracle.com/technetwork/topics/dotnet/index-085703.html)
Oracle Providers for
ASP.NET
Oracle Providers for ASP.NET: Concepts

- Pre-built services to store website state into databases
- Easy to learn
  - Based on standard ASP.NET provider APIs and schema
- Can be managed by IIS
  - Membership and role information
- Installation
  - Run PL/SQL scripts to create provider schemas
Oracle Providers for ASP.NET: Components

- Cache Dependency Provider
- Membership Provider
- Profile Provider
- Role Provider
- Site Map Provider
- Session State Provider
- Web Parts Personalization Provider
- Web Events Provider
Oracle .NET Stored Procedures
Oracle Database Extensions for .NET

- Database option
  - Windows only
  - Both 32-bit and 64-bit supported
  - Must have .NET Framework

- Oracle Database 10g Release 2 or later
Oracle Database Extensions for .NET

Oracle Developer Tools for Visual Studio

Develop

C#, VB, C++
Server Project

Build

Assembly foo.dll (proc SP)

Deploy

Oracle Database Extensions for .NET

Client Application

Invoke

Stored Procedure, SQL …
Additional Oracle .NET features
TimesTen Data Provider for .NET

- TimesTen is
  - Memory-optimized relational DB for instant responsiveness and very high throughput
  - Deployed in application tier as an embedded or standalone DB

- Supports ODP.NET classes, enumerations, interfaces, delegates, and structures
Additional Oracle .NET Capabilities

- Coherence
- Oracle Application Testing Suite
- Berkeley DB
- Oracle Business Process Management
- Grid Control Plug-Ins
- And more....
Conclusion and Q & A
Additional Oracle .NET Resources

OTN
otn.oracle.com/dotnet

Twitter
twitter.com/OracleDOTNET

YouTube
youtube.com/OracleDOTNETTeam

Email
alex.keh@oracle.com
Upcoming .NET Sessions

Today

- .NET Development for Oracle Database: Tips, Tricks, and New Features (Birds of a Feather)
  - 7:15 PM – 8:00 PM, Marriott Marquis - Foothill F
Upcoming .NET Sessions
Tuesday Sept 24

- What’s New for Oracle and .NET
  - 12:00 PM - 1:00 PM, Marriott Marquis - Salon 7

- PL/SQL Programming for .NET Developers: Tips, Tricks, and Debugging
  - 3:45 PM - 4:45 PM, Marriott Marquis - Golden Gate C2
Upcoming .NET Sessions

Wednesday Sept 25

- ALM with Visual Studio: SQL and PL/SQL Development, Source Control, and Deployment
  - 3:30 PM - 4:30 PM, Marriott Marquis - Golden Gate C2

- Oracle Database 12c on Windows
  - 5:00 PM – 6:00 PM, Moscone South - 104
Upcoming .NET Sessions
Thursday Sept 26

- Hands-on Lab: Building .NET Applications with Oracle
  - 11:00 AM - 1:30 PM, Marriott Marquis - Salon 3/4

- Oracle and .NET: Best Practices for Performance and Deployment
  - 2:00 PM - 3:00 PM, Marriott Marquis - Golden Gate C2
Visit .NET Experts at the Demogrounds
Monday through Wednesday

- .NET Development for Oracle Database 12c
  - Moscone South, Left Rear in Oracle Database Section
  - Booth # SL-044
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Hardware and Software

Engineered to Work Together