Getting Started with Oracle and .NET

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Program Agenda

1. Oracle and Microsoft
2. Oracle and .NET – Getting Started
3. Oracle Developer Tools for Visual Studio
4. Oracle Data Provider for .NET
5. Additional Oracle .NET Features
Oracle and Microsoft
Oracle’s Commitment to .NET

- ODP .NET
- ODT & .NET SP
- ODAC 2006
- 64-bit ODAC
- ODAC 2008
- ODAC 2009
- ODAC 11.2 R2
- ODAC 11.2 R4
- ODAC 11.2 R5
- ODAC 12c R1 & R2

- 2002-03
- 2005
- 2006
- 2007
- 2007-08
- 2009
- 2010
- 2011
- 2012
- 2013

- .NET 1.x
- VS 2003
- .NET 2.0
- VS 2005
- .NET 3.0
- VS 2008
- .NET 3.5
- VS 2010
- .NET 4
- EF
- VS 2012
- .NET 4.5
- Managed ODP
- VS 2013
Oracle .NET – Large Developer Community

• Over 800K members in 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

| Engineering       | • Close collaboration with Microsoft Engineering teams  
|                   | • Access to pre-release Microsoft product drops |
| Marketing         | • Visual Studio Industry Partner (VSIP)  
|                   | • Event sponsorship – MS TechEd and Worldwide Partner Conference  
|                   | • Joint training, road shows, collateral, etc. |
| Support           | • Microsoft Premier Support Agreement  
|                   | • Collaboration of support teams |
Oracle and .NET
Getting Started
Oracle .NET Development Environment

Oracle Developer Tools for Visual Studio

Oracle Data Provider for .NET

Oracle Providers for ASP.NET

Visual Studio

.NET Framework

Oracle Database

Extensions for .NET

Web or Client/Server

Deploy

App Development

Database Development

Deploy

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Develop on Windows
Run Database on any Platform

ODT and ODP.NET 12c

Visual Studio

Windows

Windows

Linux

Solaris

Other

Oracle DB 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
- Discussion forums
- Request and vote on new features
- Latest Oracle on .NET news
Oracle Developer Tools for Visual Studio
Visual Studio Integration
ODT Feature Overview

• Fully integrated with Visual Studio 2013, 2012, and 2010
• 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
Oracle Data Provider for .NET
ODP.NET Overview

• Implements standard ADO.NET
  – In addition, includes Oracle DB-specific capabilities
• Easy to use and intuitive
• Native access to Oracle Database
  – Utilize advanced Oracle Database features
  – E.g. RAC, performance, security, data types, XML, etc.
ODP.NET Object Model

Disconnected Layer

- DataSet
- Oracle DataAdapter
- Oracle DataReader
- Oracle Transaction

Connected Layer (ODP.NET)

- Oracle CommandBuilder
- Oracle Command
- Oracle Connection

Data Layer

Oracle
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 asks for DB 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 – Enhanced in 11.2.0.4
• 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 certification – New in ODAC 12c
ODAC 12c Release 3 Features

• Entity Framework 6 certification
• Code First and Code First Migrations
• XML DB APIs for ODP.NET, Managed Driver
• .NET Framework 4.5.2 certification
  • Distributed transactions no longer require Oracle.ManagedDataAccessDTC.dll deployment
• NuGet – 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#

• More information
Additional Oracle .NET Features
Oracle Providers for ASP.NET

• Pre-built services to store website state into databases
  – Easy to configure for any DB, including Oracle
• Tightly integrated with existing ASP.NET services, controls, and tools
  – DB use is nearly transparent to developer
• Easy to learn
  – Based on standard ASP.NET provider APIs and schema
• Installation
  – Run PL/SQL scripts to create provider schemas
Oracle Database Extensions for .NET

- Database feature
- Windows only
- Both 32-bit and 64-bit supported
- Must have .NET Framework on DB server
Additional Oracle .NET Capabilities

• Coherence
• Oracle Application Testing Suite
• Berkeley DB
• Oracle Business Process Management
• Grid Control Plug-Ins
• And more....
Additional Oracle .NET Resources

OTN
otn.oracle.com/dotnet

Twitter
twitter.com/OracleDOTNET

YouTube
youtube.com/OracleDOTNETTeam

Email
alex.keh@oracle.com
Oracle .NET Customer Advisory Board

• Focus group that provides Oracle input and help to prioritize new features
  – Led by Oracle VP

• Work directly with Oracle Development and PM

• Best for organizations in which Oracle .NET is strategic

• Contact me for details and how to apply
Upcoming .NET Sessions

- ALM with Visual Studio: SQL and PL/SQL Development, Source Control, and Deployment
  - Tuesday - 5:00 PM - 5:45 PM Moscone South - 309

- Meet the Experts: .NET Development for Oracle Database
  - Tuesday - 7:00 PM - 7:45 PM Moscone South - 307

- Oracle and .NET: Best Practices for Performance and Deployment
  - Thursday - 9:30 AM - 10:15 AM Moscone South – 308

- PL/SQL Programming for .NET Developers: Tips, Tricks, and Debugging
  - Thursday - 1:15 PM - 2:00 PM Moscone South – 308
Visit .NET Experts at the Demogrounds

• .NET Development for Oracle Database 12c
  – Monday through Wednesday
  – Moscone South Exhibition Hall, Far Left Middle in Oracle Database Section
  – Booth SLD-169
Questions and Answers
Safe Harbor Statement

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Hardware and Software
Engineered to Work Together