MetLife’s 11gR2 Active Data Guard Implementation Story

MetLife

DR Solution and Reporting Better together

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Agenda

• Who are We?
• MetLife's Oracle Footprint.
• Active Data Guard and PeopleSoft
• Active Data Guard and OBIEE
• Active Data Guard and Hyperion
• Summary
Who Are We?

• MetLife, Inc. (NYSE: MET) is a leading global provider of insurance, annuities and employee benefit programs
• 90 million customers in more than 60 countries
• 2010 total revenues of $52.7 billion
• 46th on the FORTUNE 500®¹
• Over $770 billion² in total assets
• 66,800 employees²
• Founded in 1868

¹Issue Date: 5/23/2011; ²As of 6/30/2011
A Diverse and Global Company

2Q 2011 Premiums, Fees & Other Revenues of $11.8 Billion*

*Excludes the Corporate & Other component of Banking, Corporate & Other. The non-GAAP measure used above (premiums, fees and other revenues) should not be viewed as a substitute for the most directly comparable GAAP measure (GAAP premiums, fees and other revenues). Premiums, fees and other revenues, as presented, is GAAP premiums, fees and other revenues minus $59 million in adjustments related to universal life and investment-type product policy fees.
Market Leadership

• Largest life insurer in the United States, Mexico, Russia, Chile and Argentina

• Clients include over 90 of the top 100 FORTUNE 500®

• Largest provider of group employee benefits in the U.S.

• Leading market positions in Japan, Korea and Brazil

• Top five positions in over 25 markets

• Growing presence in India and China

1Based on life insurance in force according to A.M. Best (U.S.); Based on direct premium according to EstadisticaMIS (Mexico); Based on premiums according to Federal Board of Insurance Supervision (Russia); Based on combined direct premium according to Superintendencia de Valores y Seguros (Chile); Based on combined direct premium according to Superintendencia de Seguros de la Nación (Argentina); 2Issue Date: 5/23/2011; 3LIMRA and MetLife Research; 4Nikkei (Japan); Financial Supervisory Service (Korea); SUSEP (Brazil); 5AXCO
MetLife's Oracle Footprint

- Oracle® RDBMS on AIX and Linux
- PeopleSoft Financial 9.1/8.8
- DR using Oracle Data Guard
  - Traditional and active physical standby
- Reporting using a logically replicated environment
- Advanced compression (Oracle 11g Release 2)
- OBIEE financial and gap analytics
- Hyperion planning and budgeting
MetLife Architecture before ADG
Standbys Only Used for Disaster Recovery

Production Site

- PeopleSoft
- Financial Online App
- Erp Financial

Remote DR Site

- Data Guard
  - Shareplex
  - Logical replication
- Standby Database
  - Backup

PeopleSoft
Near Real-time (NRT)
Financial reporting,
Erp reporting

Data Guard

Backup
Why Consider Active Data Guard

- Considerable volume of read-only workload
  - PeopleSoft, OBIEE, Hyperion, other applications
- Existing Data Guard standby databases
  - Minimal cost
- Active Data Guard offers an ideal opportunity
  - Harness standby system capacity
  - Eliminate separate reporting instances
  - Low cost, utilizes infrastructure in place for DR
  - Simpler to implement than other replication options
PeopleSoft 8.5.1 with Active Data Guard 11g

Same App server supports both OLTP and reporting user population

Primary Database

PeopleSoft
Financial Online App
Erp Financial

Active Data Guard

Data Guard

Backup

Active Standby Database

PeopleSoft
Near Real-time (NRT) Financial reporting, Erp reporting

Active Data Guard
PeopleSoft and ADG – Implementation

Three step configuration:

- Configure a standby DB in the App server and Process Scheduler configuration files.
- Mark components as R/O so that these components get redirected to the STANDBY DB.
- Mark Process Scheduler processes as R/O so that these components get redirected to the STANDBY DB.
In the app server and process scheduler configuration files – configure as standby DB

Configuring a Standby DB

• In PT8.51 specify an optional STANDBY database in addition to the current PRIMARY database designation in the Application Server configuration file

• PT8.51 Application Server config file

  • [Startup]
  
  ;=========================================================================
  
  ; Database Signon settings
  
  ;=========================================================================

  • DBName=F9ADGP
  • DBType=ORACLE

  • UserId=onlinewrite
  • UserPswd=sysadm2pass
  • ConnectId=people
  • ConnectPswd=peop1epass
  • ServerName=
  • StandbyDBName=F9ADGP_SISC
  • StandbyDBType=ORACLE

  • StandbyUserId=reporting
  • StandbyUserPswd=reportingpass

Note: New Standby DB entries
Marking Each Component as Read-Only
PeopleSoft Database Configuration

Database

- Standby open and ready for read-only connections
- Create a connect string in OID or TNSNAMES dedicated for the active standby DR database
  - F9ADGP - For non PeopleSoft users connecting for writes (connects to Production).
  - F9ADGS - For non PeopleSoft users connecting for reads – (connects to standby).
  - F9ADGP_RISC (for PeopleSoft Financial Online App)
  - F9ADGP_SISC (for PeopleSoft Financial Reporting App)
Additional Implementation Details
PeopleSoft Active Data Guard Standby Database Setup

Primary connection using SYSADM1 via F9ADGP
Secondary connection using SYSADM2 via F9ADGP_SISC

Sync / Async Redo Transport

Db Links/Remote Synonyms for every Table that needs non Select DML will direct to primary.

SELECT only DML require local Synonyms from Secondary access id to Primary access id's tables and Views.
PeopleSoft Workload Moved to Active Data Guard

- **Query Viewer** - queries were run from Query Viewer component and confirmed through SQL trace and the DB to be running on the standby

- **Tree Viewer** - trees viewed from Tree Viewer component were confirmed through SQL trace and the DB to be running on the standby

- **Query Manager** component set to Read Only in AppDesigner. Remote synonyms for PSQRY% tables were created on primary DB

- **Materialized view** created and exploded on the primary DB and replicated to the standby. Corresponding view created in AppDesigner
Other Applications that also Connect to DR

Other applications that read from the Financial reporting database

- BI publisher
- Nightly ETL data extract for OBIEE
- Hyperion
OBIEE Database Implementation Details

• Standby open and ready for read-only connections

• Create a connect string in OID or TNSNAMES dedicated for the active standby DR database

• Use that connect string to extract the nightly ETL load (Using Informatica and DAC scheduler) to OBIEE

• All BI publisher (part of OBIEE) that used to read from finance production directly now reads from standby using the same connect string to query financial data.
OBIEE and Active Data Guard

Three step configuration:

• Disable temporary table creation. This prevents Oracle BI EE from issuing DML statement while connecting to standby database.

• Create the first connection pool to connect to the standby database as most of the queries go through here.

• All Scripts that modify database content must specify the primary database connection pool explicitly.
Disable temporary table creation in standby
OBIEE- First Connection Pool to Standby

Connection pool to standby database
“Write-Back” connection pool points to the primary
Hyperion Implementation Details

Financial Reporting

• Standby open and ready for read-only connections
• Create a connect string in OID or TNSNAMES dedicated for standby DR database
• Use that connect string to extract the nightly ETL load (Using Hyperion’s FDM tool) to Hyperion database.
• All packaged queries that previously read from finance production, now read from active standby using the same connect string to query financial data.
MetLife Active Data Guard Architecture
Dual Active Standbys – Capacity for both Reporting and DR

Production Site

PeopleSoft
Financial Online App
Erp Financial

Near Real-time (NRT)
Financial reporting,
Erp reporting

Remote DR Site

Active Data Guard

Other Reporting
ETL Extract,
BI Publisher, DAC,
Hyperion

Data Guard

Backup

Active Data Guard
Compromises with Active Data Guard
Compared to Logical Replication

• Access
  – No read-write access to the reporting (standby) environment

• Flexibility
  – Reporting specific trees need to exist in the operational (primary) environment
  – Non-PS schemas need to be relocated to the operational (primary) or another database

• Tuning
  – Reporting specific tuning needs to exist in the operational (primary) environment and must be tested to ensure there is no impact to functionality or performance of either primary or standby
Advantages of Offload to Active Data Guard

- 37% cost reduction due to fewer PS reporting environments (e.g. HW, capacity, software licensing)
- Reduction in maintenance required to support PS environments (e.g. tuning, refreshes, upgrades)
- Reduction in batch trail processing/maintenance
- PeopleSoft reporting can be done from one central URL/environment, additional login/navigation is not required
- Ability long term to off-load additional read only processes to the standby DB to conserve resources on the primary DB
- Continuous validation that DR systems are ready to support production
- Added automatic block corruption repair – a feature of Active Data Guard
References

• Active Data Guard Configuration Reference in PeopleBooks

• Configuring Oracle BI EE server with Active Data Guard