Introducing
Nagesh Konduru
A Real Life Experience!
Oracle 11g
Active Data Guard

High Scalability

High Availability

Real-Time Data Changes

Reader Farm

Apple

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Our Requirements

- Migrate from Data Guard Logical Standby to Active Data Guard (ADG) Reader Farm
- Easily scale out Reader Farm to handle peak load
- High Availability (zero outage)
- Real-time data changes to Reader Farm
- Offload reporting from online database
- Support all index and data types
- Ease of maintenance
Reader Farm Architecture

Active Data Guard
Oracle 11g R1

Primary DB
ADG 1
ADG 2
ADG 3
ADG 8
ADG 9
Load Balancer
App 1
App 2
App 3
App n

SYNC
ASYN

Standby DB
(Max Availability Mode)
Experience to share

- No impact on Read-only queries on ADGs with simultaneous redo apply, and vice versa
- Real-time Apply now keeps pace with our load
- Guarantee of data consistency between Primary and ADG Standbys
- Large dataset changes on Primary doesn’t impact Real-time data changes to Reader farm
- No restrictions on the types of indexes we can use
Best Practices

- Use Load Balancer between App Layer and Reader Farm
  - Balance out App Connections across multiple ADG Standbys
  - Easy to add / remove Standbys from Load Balancer

- Rigorously test Query performance on ADG reader farm in parallel with massive data changes on Primary Database

- Consistent execution plan of SQLs on Standbys by generating object statistics on Primary Database

- Specify NET_TIMEOUT attribute in LGWR SYNC Redo Transport Mode
Key Learning

- Additional indexes can’t be created on the ADG Standby exclusively for reader farm queries
  - Use Primary Database for all indexes
  - Ensure no negative impact of these indexes to SQLs running on Primary Database

- Apply data guard bundle patch (# 7676737) on 11g R1

- AWR tool is not supported on ADG Standbys
  - Refer to Note 454848.1 for installing and using standby statspack
  - Use statspack report (required patch #8801078)

- For greater than 9 Standby Databases (limit of 10 archive log destinations)
  - Cascading from other Standbys, OR
  - Go for Oracle 11g R2