Enterprise Holdings
Oracle Data Guard - Strategic Overview

Lisa Reinheimer
Systems Architect
Who Is Enterprise Holdings?

- World’s largest car rental company in revenue, employees and fleet
- Operator of Alamo Rent A Car, National Car Rental and Enterprise Rent-A-Car brands
- More than twice as many US locations as our nearest competitor
Two Key Architectures

1. Fast-Start Failover – Mission Critical Systems
   - 11gR1, Physical Standby, ASYNC
   - Flashback / Fast Recovery Area
   - GoldenGate – Feeds To Warehouse
   - Transient Logical Standby for Upgrades & PSU’s
   - Single Instance per site

2. Active Data Guard – Business Critical Systems
   - 11gR1, Primary can be down at times, < 24x7 requirement
   - Read-Only Access 24x7x365
   - Physical Standby, ASYNC, Broker configured
   - Primary can handle all Read-Only load if necessary
Data Guard at Enterprise Holdings

Fast-Start Failover – Mission Critical Systems

- Primary Database
  - Non-RAC
  - < 24x7
- Physical Standby
  - Real Time Apply
  - FSFO – 180 second threshold
  - Fast Start Failover Lag Limit – 30

ASYNC Data Guard Redo Shipping

- >500 Miles < 1000 Miles
  - < 25 ms latency
  - OC12

RMAN, Flashback

- Database Area
- Fast Recovery Area
  - (Flashback logs, Archived logs)
- Database Area
- Fast Recovery Area
  - (Backups, Flashback logs, Archived logs)

GoldenGate (ALO)

- Data Warehouse

OEM Grid Control

- Manages Observer
- Process
Active Data Guard – Business Critical Systems

- Primary Database Non-RAC < 24x7
- > 500 Miles < 1000 Miles
  - < 25 ms latency OC12

ASYNC Data Guard Redo Shipping

Active Guard, RTA
Physical Standby
Read-Only, 24x7

RMAN, Flashback

Database Area
Fast Recovery Area
(Flashback logs Archived logs)

Database Area
Fast Recovery Area
(Backups, Flashback logs Archived logs)

Flashback

- used for Customer data, Pricing details
- why it works – use of service_names and app separation r/w vs r/o
- intelligent network routing, 1st choice always local site
Decision Points

- Business Owners are responsible for classifying their systems as Mission Critical or Business Critical. We have an internal document that helps them answer many questions leading to the appropriate classification. ASYNC does risk some data loss, we are willing to accept that risk.
- We chose not to implement Real Application Clusters because of the additional complexity. No issues for us at this time, Data Guard has completely met our expectations.
Data Guard Cool Tips

- Many technologies can provide High Availability. We have used Data Guard reliably for many years now. You should choose HA technologies that are easy to manage and make the most sense for your specific requirements.

And don’t forget - leverage OEM Grid Control.
Steve Jobs Quote:

“When you first start off trying to solve a problem, the first solutions you come up with are very complex, and most people stop there. But if you keep going, and live with the problem and peel more layers of the onion off, you can often times arrive at some very elegant and simple solutions.” Newsweek