



Exadata High Availability Solutions

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Agenda

1 Symantec Authentication Division Overview

2 Why Engineered Systems? Exadata

3 Our Architecture

4 DB High Availability Solutions

5 Exadata Patching

Symantec Authentication Division Overview

- Formerly VeriSign
- Acquired by Symantec in August, 2010
- #1 in SSL Certificates issued
 - VeriSign, Thawte and GeoTrust brands
- Strong Authentication for network, web and mobile devices
- Two Factor Authentication
- Public Key Infrastructure (PKI) services
- User Authentication for the government

Symantec Sets the Highest CA Policies



1 Million web servers worldwide
1st Public CA
100% validation services uptime since 2004
Pioneer in SSL technologies
14 global data centers
Global Intelligence Network/STAR
4.5 billion online OCSP lookups/ day
<1 second response for OCSP queries

* OCSP: online certificate status protocol

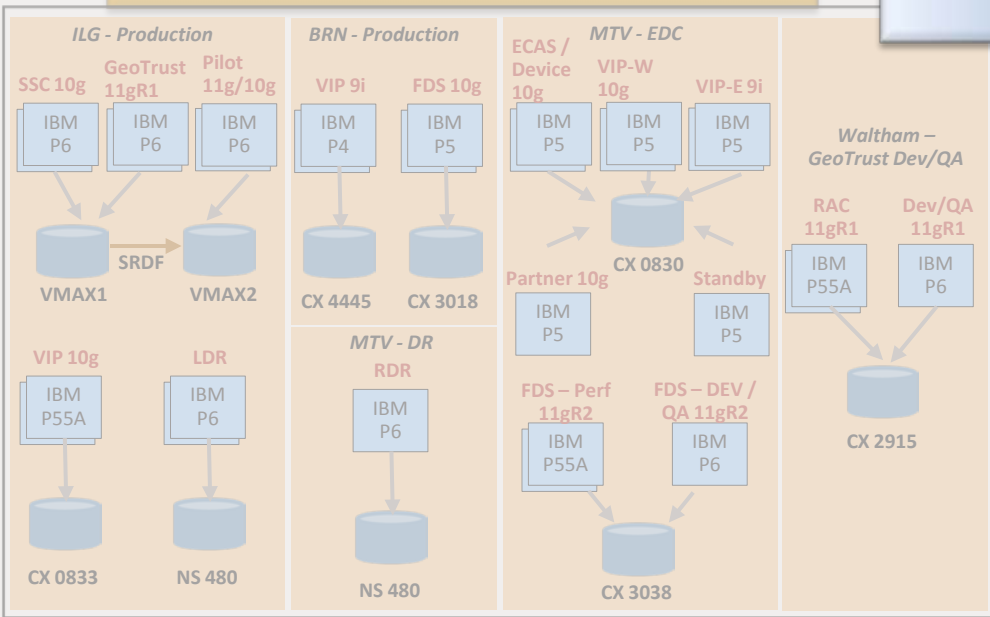
Why Engineered Systems?

- Integrated Stack
 - Pre-packaged solution with hardware, OS, Clustering and database components
 - Integrated and Optimized by Oracle
 - Faster time to deploy
- One vendor for support
 - For OS, Clusterware, InfiniBand, Storage and Database support
 - Will save us time and effort in complex performance/outage issues



Exadata Enables Systems & Data Consolidation

AIX Infrastructure



Exadata X3-2 Half Rack (50 TB raw)

West Coast DC

QA/Dev



46 Test/Dev databases

West



5 production databases – size range from 25GB to 600GB

22 standby databases for Remote DR

East Coast DC

East 1



7 production databases – size range from 50GB to 2.5TB

15 standby databases for Local DR

2 standby databases for Remote DR

East 2



15 production databases – size range from 25GB to 500GB

7 standby databases for Local DR

3 standby databases for Remote DR

Symantec Strong Authentication Solutions now powered by Oracle Exadata & Oracle Active Data Guard

Symantec Strong Authentication Solution: Database Architecture

West Coast Data Center

East Coast Data Center

QA/Dev

West

East 1

East 2

46
Test/Dev
databases



5 production
databases –
size range from
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22 standby
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Active
Data Guard *

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Remote DR
4 Node RAC

Remote DR
4 Node RAC

Prod DB
4 Node RAC

Local DR
4 Node RAC

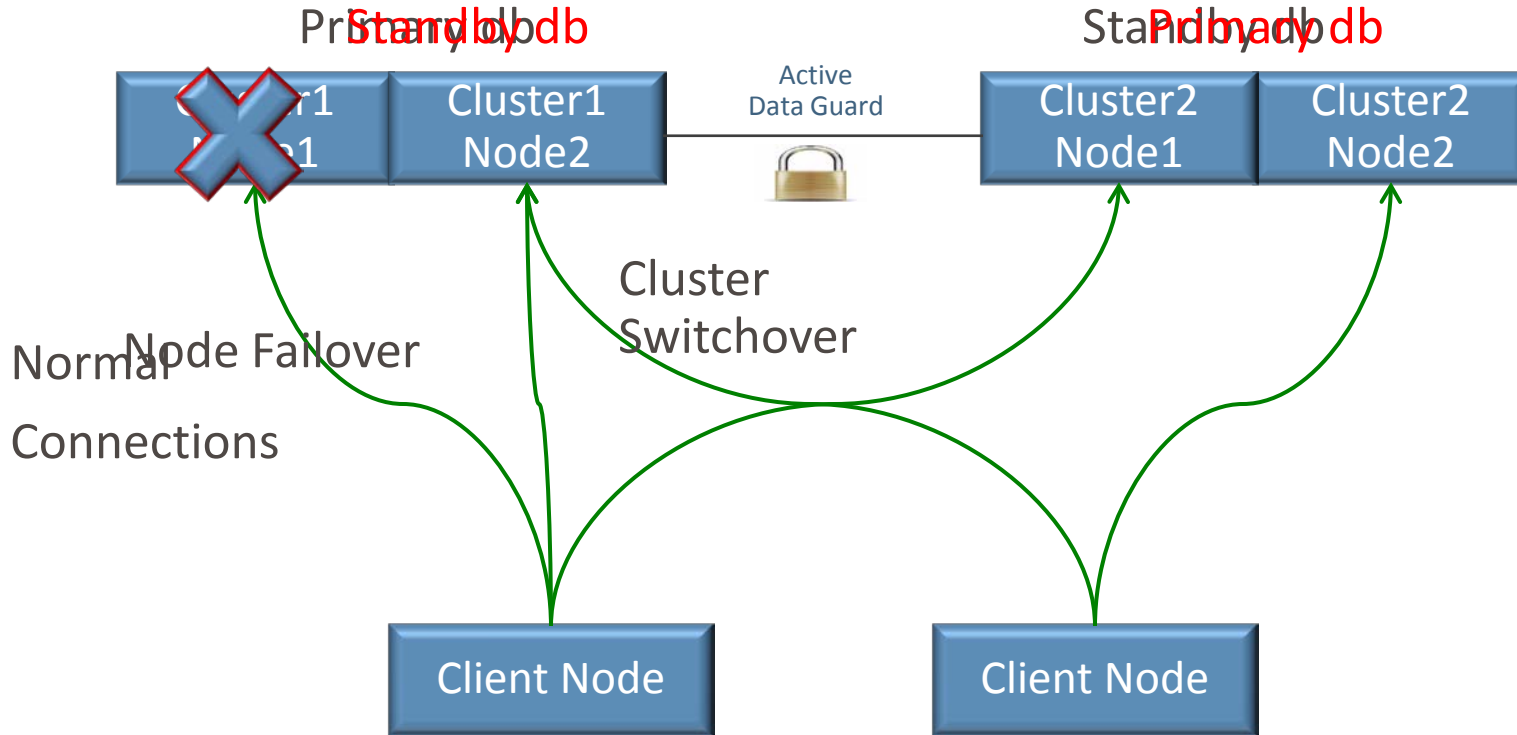
Local DR
4 Node RAC

Prod DB
4 Node RAC

* Active Data Guard utilized for real-time Authentication Reporting Applications

Database High Availability Solutions

Failover and Switchover



Exadata Patching

- Quarterly patching
- Adhere to Audit and Compliance requirements
- Dev -> QA -> DR -> Prod
- At least a week gap between each of them
- Completely online and transparent to end users

Exadata Patching – Cell Servers

- Each half rack has 7 cell servers
- Reboot ILOM to confirm console access
- Patch cell servers, which comprises of the following:
 - Take it offline
 - Confirm the grid disk status is offline
 - Patch cell server
 - Put it back online
- Completely transparent to databases and end users
- ASM resynch occurs transparently, no ASM rebalancing

Exadata Patching – Database Servers

- Each half rack has 4 db servers
- Patching steps
 - Take db server out of rotation
 - Patch it
 - Put db servers back in rotation
 - Patch the remaining db servers the same way
- Completely transparent to end users



Thank you!

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