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Database Tables to Storage Bits: Data Protection Best Practices for Oracle Database

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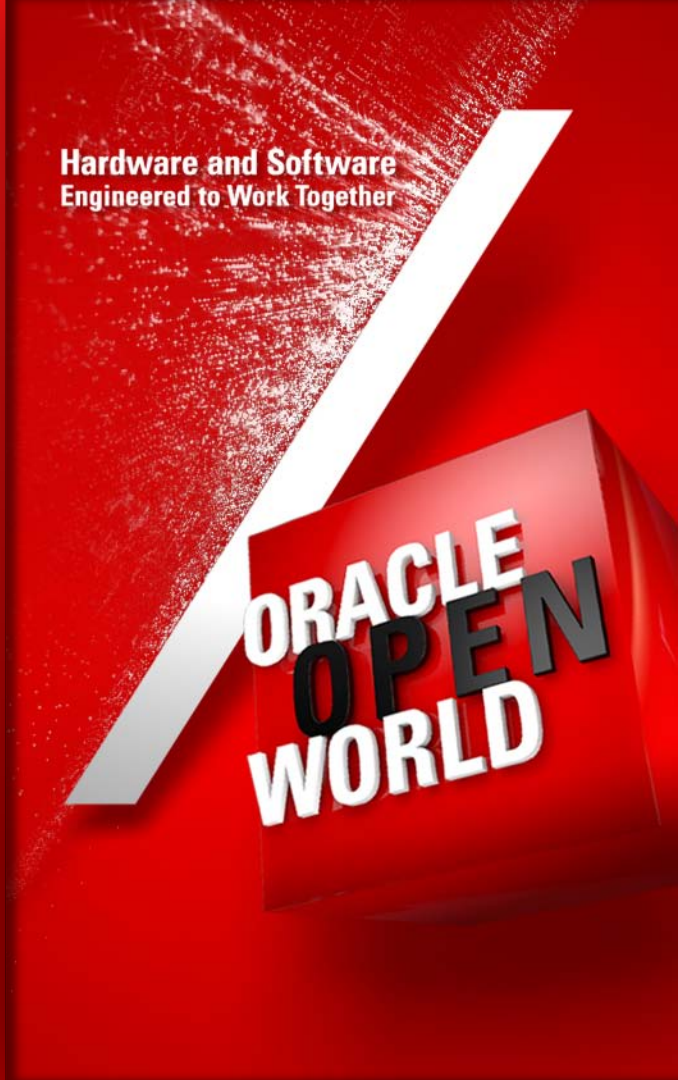

Data Protection and High Availability Practices at High Tech Manufacturing

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Agenda

- Intel – Database Setup Overview
- Enterprise Backup & Recovery (*eBaR*) setup – Past
- Enterprise Backup & Recovery (*eBaR*) HA2.0 – Present Architecture
- Production Scenarios
- Key Takeaways

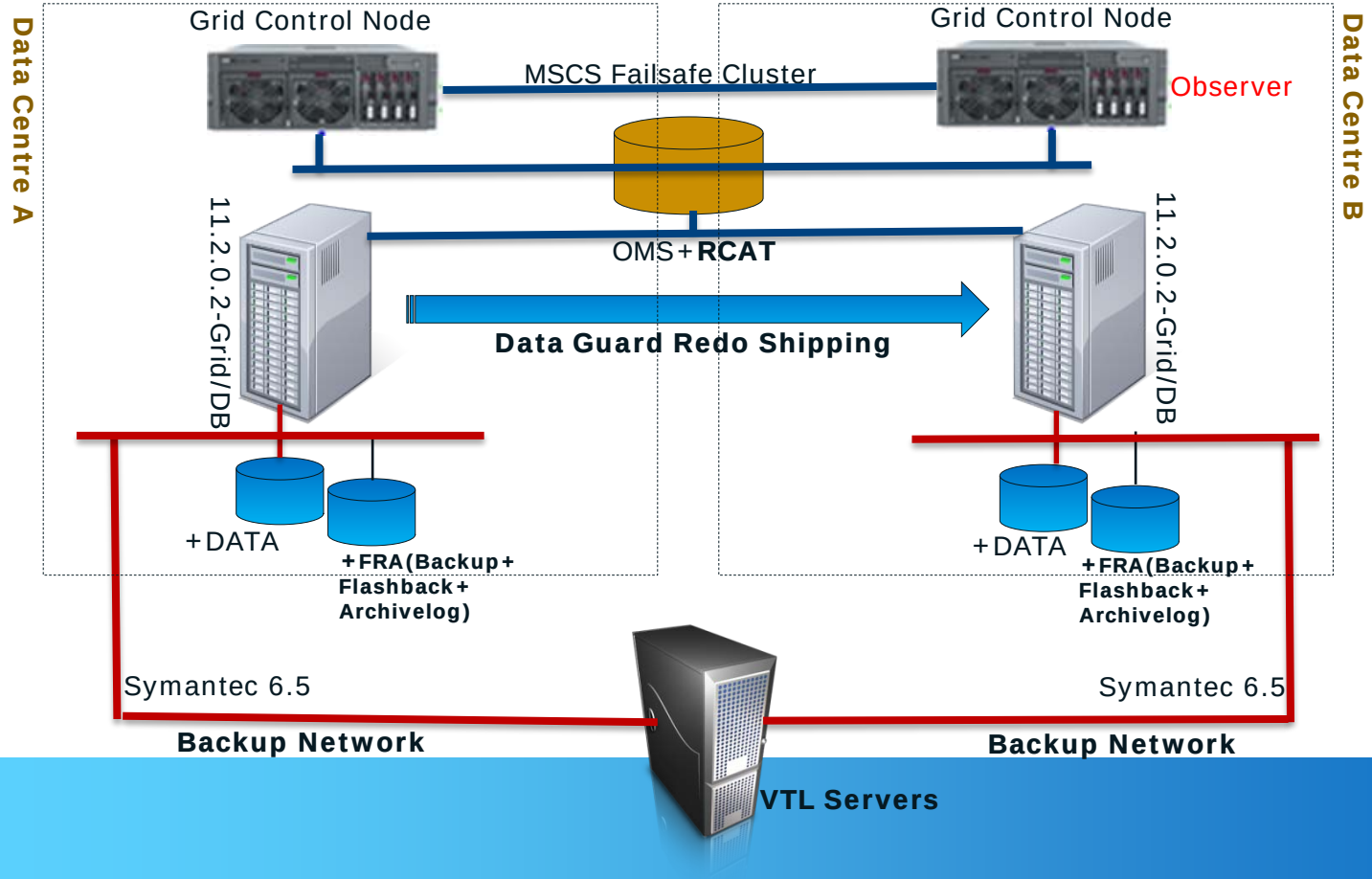
Database Setup Overview

- DSS and OLTP Setup
- Zero data loss and high availability is priority
- DB sizes range from few GB's to ~ 50 TB
- Monitoring and auditing are key
- Robust Backup and Recovery procedures
- Application tier includes third party vendor products and in-house apps
- 24x7 uptime

eBaR setup - Past

- Perl wrappers (8.x-10.2.x)
- Manageability challenges with new OS/DB versions
- Decentralized Recovery Catalog (RCAT)
- Complex to add/modify RMAN parameters
- Troubleshooting challenges
- Operations Nightmare - Monitoring and Auditing.

eBaR setup – Present Architecture



The Setup

- Weekly Incremental →D2D → D2T
- Weekend L0 → D2D → D2T (*Monthly Offsite*)
- Global Scripts
- Block Change Tracking is Enabled
- Basic Compression
- Backup type “Backupset”
- Flash Back Enabled (*24Hr retention)*

Back up Flow

a. • EM Grid Control OMS initiates scheduled backup Job

b. • EM Grid Agent invokes RMAN on target DB

c. • RMAN Global Script is executed

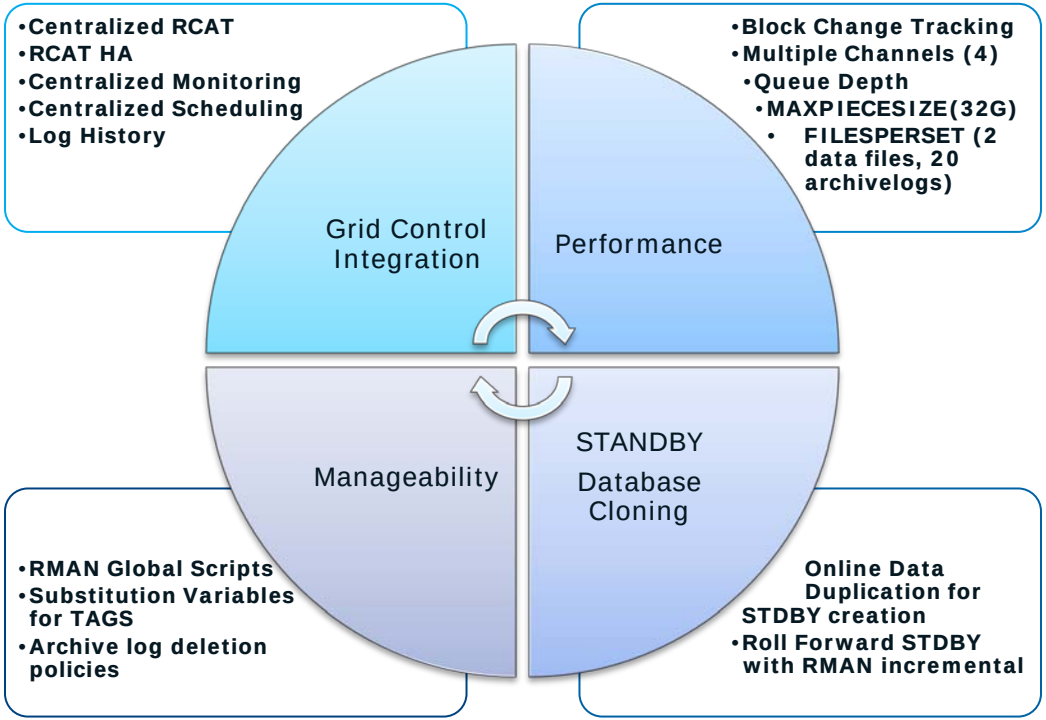
d. • Disk To Disk (+FRA)

e. • Purge Archivelogs (follow retention of 7 days)

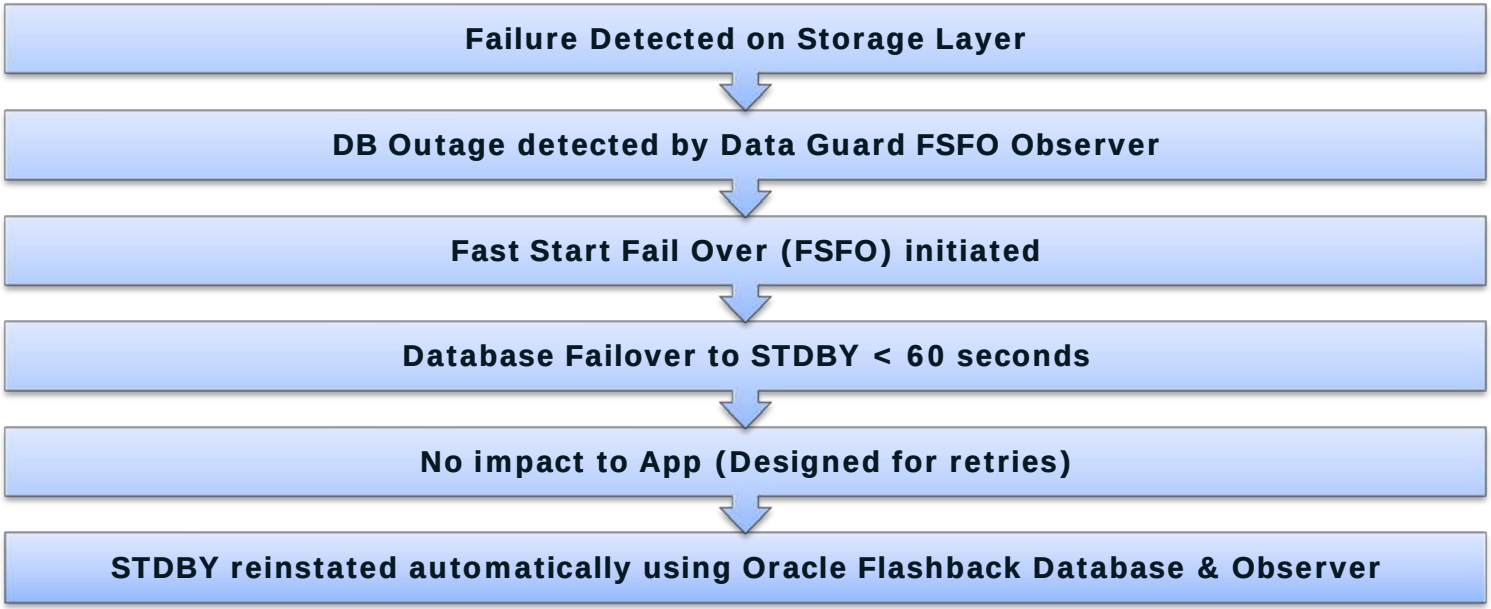
f. • D2T (FRA to VTL)

g. • EM Grid Control Sends Success/Failure Email

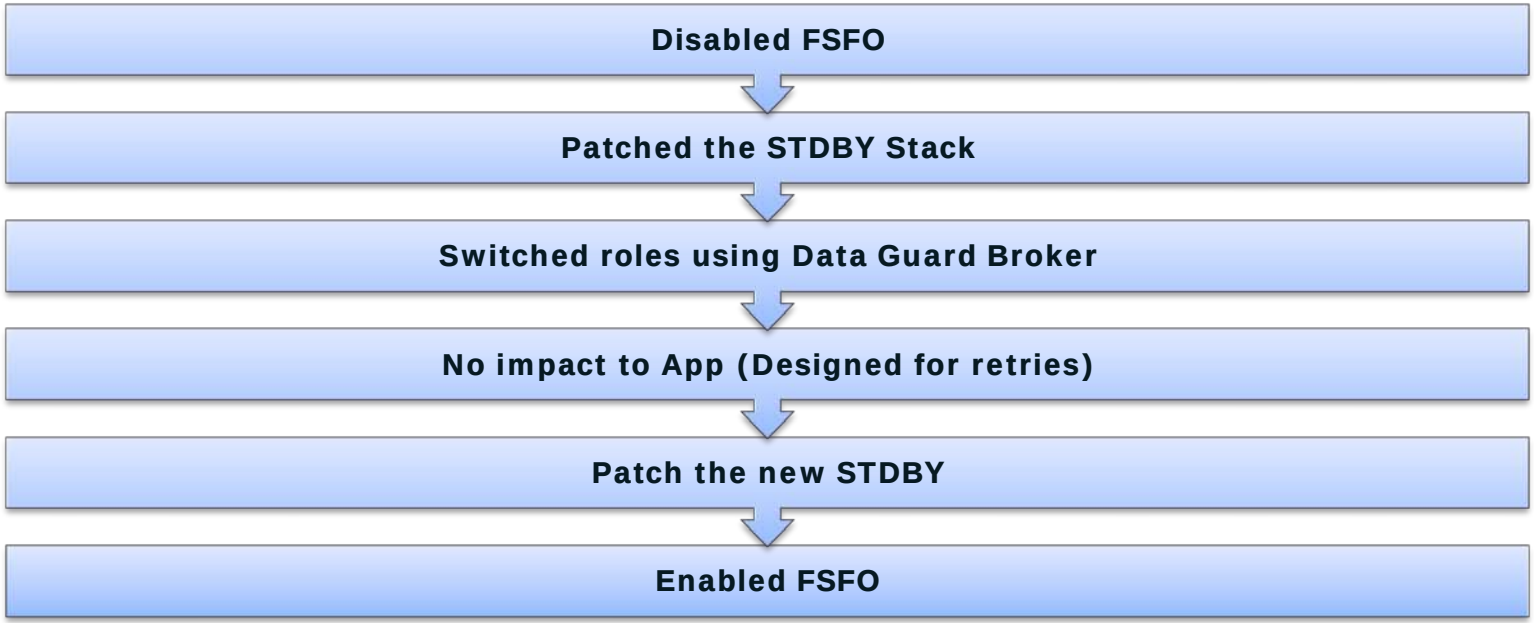
eBaR Eco-System and Highlights



Production Scenarios – Unplanned Outage



Planned Outage



Key Takeaways

Summary:

- No downtime to factory operations during planned outage compared to ~40min in the past
- Zero Impact on Role Changes (Planned/Unplanned)
- Auto Reinstatement via Flashback Database saves hours of STDBY rebuild time

Learning's

Intel created in-house scripts to

- Automate Backup job swaps in Grid Control upon role change
- Automatic relocation of Observer on role changes based on DG guidelines
- Force Level 0 backups on role change
- Pre-checks to identify issues that prevent switchover need to be integrated

Thanks to the Intel TMG(ATTD) Engineering Team

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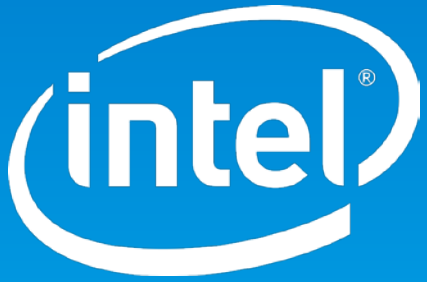
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Reference

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