



Oracle Cloud World 2022
LIT3175: Apps DBA/Architect

ExaCS X9M Migration
Database Upgrade to 19c

Lightning Session Agenda

- ✓ A Little About Us
- ✓ BMcD Applications Footprint
- ✓ Our Engineered Systems Journey
- ✓ X9M Project Justification
- ✓ X9M Migration Project Timeline & Execution
- ✓ Benefits: Current & Future
- ✓ Q&A

A Little About Us

- ✓ Burns & McDonnell: global AEC firm, HQ in Kansas City
- ✓ Jeff Kirk: DBA Manager
 - ✓ 20+ years experience supporting Oracle EBS
- ✓ Laks Mettapalli: DBA/Architect, Candid Source LLC
 - ✓ 20+ years experience as Oracle DBA
 - ✓ Supporting BMcD since 2015

BMcD Applications Footprint

- ✓ Oracle Applications / E-Business Suite since 2000
- ✓ Single global production instance serving 10k employees & CWKs
- ✓ Financials, HRMS, Payroll, Procurement, OBN, Projects
- ✓ Custom APEX applications
- ✓ 3rd Party Timekeeping, Payables Automation, Benefits
- ✓ Interfaces to Microsoft analytics & CRM systems
- ✓ IDCS integration with Azure Active Directory (SSO)
- ✓ 1 Data Guard standby DB, 8 non-production EBS instances
 - ✓ 4 Exadata RAC DBs, 4 DB VMs
- ✓ Running EBS Release 12.2.9 since 2020

Oracle Engineered Systems Journey

- ✓ Migrated EBS and Connected Apps to Exadata X5 on premises – 2016
- ✓ Migrated EBS and Connected Apps to OCI ExaCS X7 – 2020
- ✓ Migrated from OCI ExaCS X7 to OCI ExaCS X9M - 2022

X9M Project Justification

- ✓ Faster
 - ✓ New hardware, faster CPUs
- ✓ Cheaper
 - ✓ 35% less expensive per OCPU hour than X7
- ✓ More flexible
 - ✓ Add storage cells without purchasing more hardware
 - ✓ Auto-scaling CPU to meet increased workloads (19c DB)
- ✓ Quick & Simple Provisioning
 - ✓ New X9 servers provisioned in less than a day
 - ✓ Used existing network and security setup

X9M Migration & Database Upgrade Strategy

- ✓ Clone 12c DB from X7 to X9M (RMAN duplicate)
- ✓ Create 19c home, upgrade 12c DB to 19c (DBUA)
- ✓ Convert 19c DB to CDB/PDB configuration
- ✓ Repeat for remaining environments

X9M Project Timeline

- ✓ May – Project planning and kickoff
- ✓ June – Non-prod ExaCS server provisioned
- ✓ July – Development EBS DB upgrade and testing
- ✓ August – Production ExaCS server provisioned
 - ✓ Multiple practice upgrades, application system testing
- ✓ Sep – Production server cutover / database upgrade
 - ✓ Weekend 1: 19c pre-upgrade patches (ADOP)
 - ✓ Weekend 2: 19c upgrade (36 hours downtime)

Benefits Realized

- ✓ Database performance gains (25% faster for parallel processing benchmarks)
- ✓ Simplified DB backups and restores – via OCI console
- ✓ Simplified DB patching – via OCI console
- ✓ Storage cell additions – no downtime needed
- ✓ Exadata CPU scaling – on demand, in minutes
- ✓ Instance monitoring & alerts – via OCI console

Benefits on the Horizon

- ✓ Consolidate all Oracle databases to Exadata, decommission DB VMs
- ✓ EBS Cloud Manager – provisioning and cloning automation
- ✓ OCI Observability & Management – Application Performance Management

Q&A

Questions? Ask away . . .

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