EXADATA TO THE CLOUD
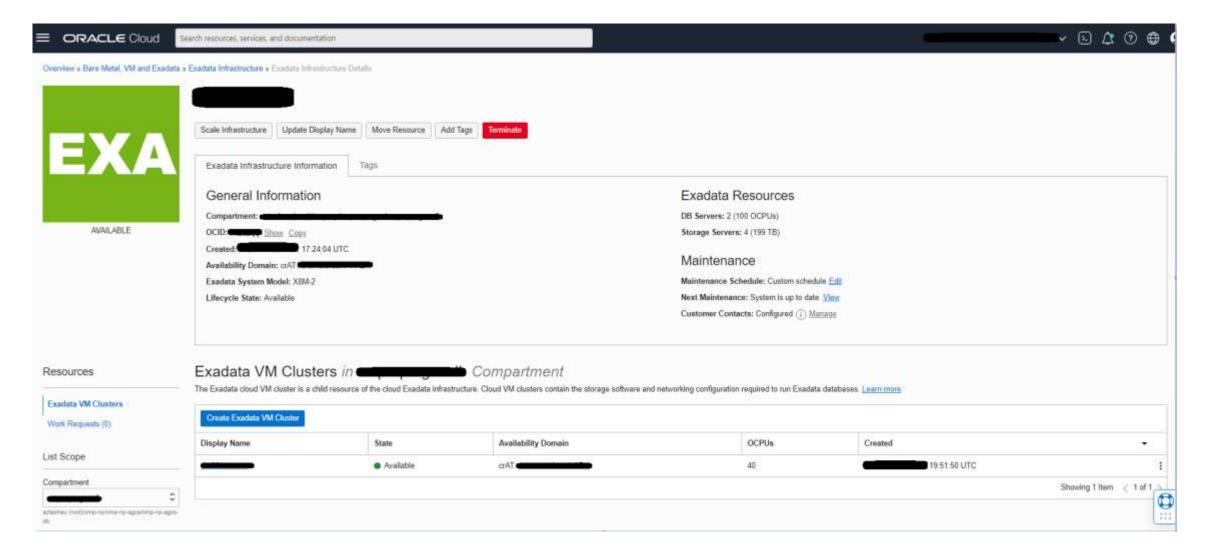
Zsolt Szaloki /
Siófok - 5/18/2022

Allianz ⦿

ON-PREMISE UAT ENVIRONMENT

Exadata X6-2

- 2 Compute nodes: 2 x 22 core / 2 x 750 GB memory

- 7 High Capacity Storage servers 7 x 96 TB / 12.8 TB Flash

- 2 IB switch 40 Gbit/sec

- 5 Database (12.1)

- 40 TB data

OCI ENVIRONMENT

OCI BACKUP ON OBJECT STORAGE

Backup performance dropped due to encryption

- Number of channels

- Multi node backup

- Section size

- Compression algorithm → BASIC

- Increased CPU usage

MIGRATION CONCEPT

- Backup on-premise Exadata to on-premise ZFS

- Replicate on-premise ZFS to OCI ZFS

- Restore from OCI ZFS to OCI Exadata

- Setup Data Guard between on-pemise Exadata to OCI Exadata

- Encrypt Standby databases

- Data Guard switchover

- MEK management

ON-PREMISE ZFS → VIRTUAL ZFS IN OCI → RESTORE TO OCI

On-permise 2 x 10 Gb connection to Exadata

2 x 1 Gb connection between DC and OCI

CONFIGURE DATA GUARD

- Set parameter _tablespace_encryption_default_algorithm to AES256 on primary (patch 30398099)

- Create MEK on primary in local wallet

- Restore databases from virtual ZFS to EXACS

- Copy local wallet from primary to standby

- Configure Data Guard broker

- Increase recovery size

ENCRYPTION ON OCI

Oracle white paper:

Converting to Transparent Data Encryption with Oracle Data Guard using Fast Offline Conversion

Verify that the Data Guard configuration is healthy and contains no gaps.

Create the encryption wallet, and set the master key.

Copy the wallet files to the standby database environment.

Place the standby in a mounted state with recovery stopped.

On the standby: Encrypt data files in-place and in parallel.

On the standby: Restart redo apply and catch up.

Execute a Data Guard switchover making the encrypted standby the new primary and the unencrypted primary the new standby.

On the NEW standby: Place the new standby database in a mounted state with recovery stopped.
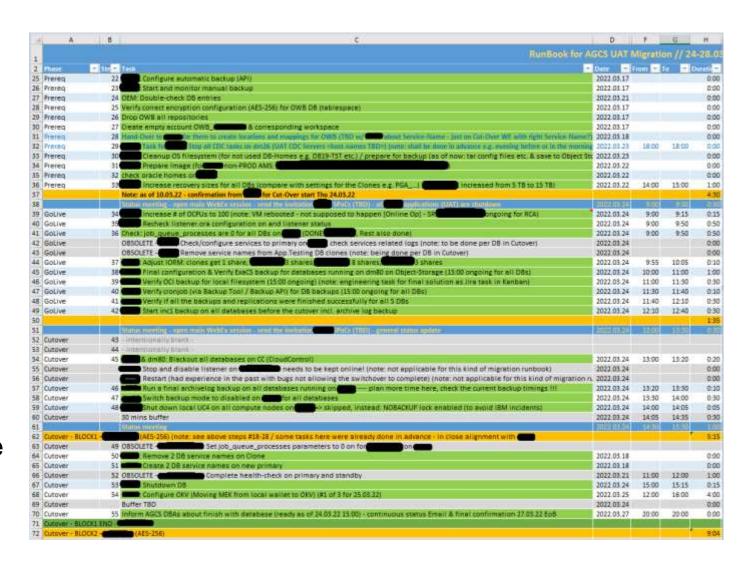
On the NEW standby: Encrypt data files in-place and in parallel.

On the NEW standby: Restart redo apply and catch up.

Optionally execute a Data Guard switchover to reestablish the original configuration.

CUTOVER DATE

- Increase CPU during cutover

- IORM configuration

- Switchover

- Backup new primary

- CDC configuration

- Object move to new tablespace

FURTHER STEPS

- Filesystem backup

- OWB → Oracle Data Integrator, ODI migration

- Database migration to 19c

- Further 5 Exadata migrations in this year

- Deployment with Terraform

QUESTIONS?

THANK YOU FOR YOUR ATTENTION!