

Migration Mission: How Avaloq Conquered Exadata Cloud@Customer

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Agenda

1. Mission
2. Target Architecture
3. Key Challenges
4. Cloning Concept
5. Performance Insights
6. Outcomes & Lessons Learned
7. Q&A

01 Mission

Mission

Consolidating ALL Oracle workloads from the legacy data center to Exadata Cloud@Customer.

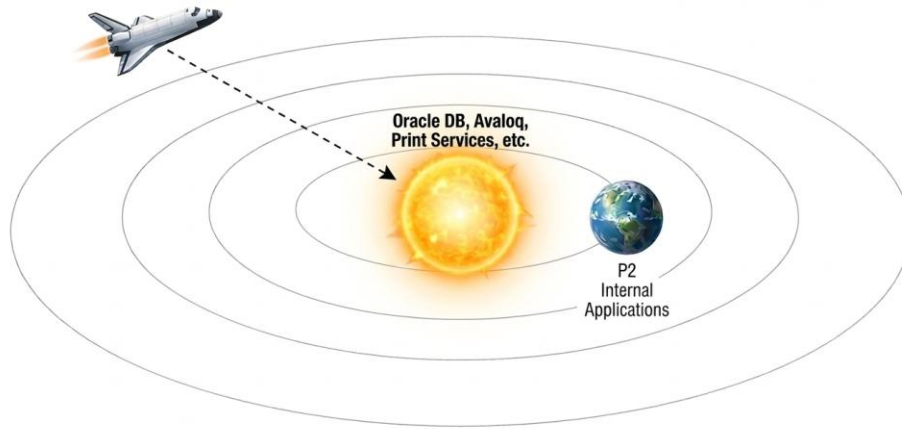
Final Chapter

Migrating the Avaloq Workload (Avaloq Core Banking System) to Exadata Cloud@Customer

02 Target Architecture

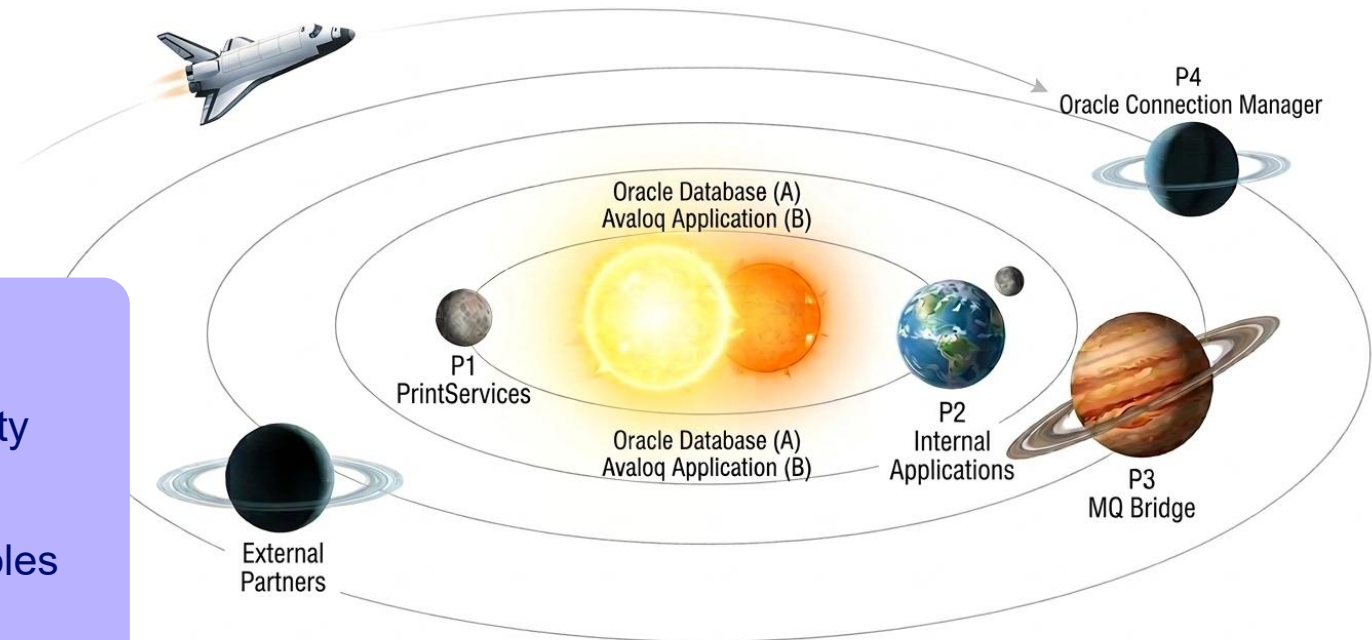
Target Architecture

Database / Application separation, access control



Key Points

- **Separation of database and application** for stability and maintainability.
- **Access control and authentication** with defined roles and permissions.
- **External services via OCM** (Swisscom MQ, TwintSafe).



03 Key Challenges

Oracle Architecture Decision on Key Challenge (MAA, RAC vs. single node)

Final Decision: Single Node RAC for Avaloq

- **Certification compliance**
- **Stability** (RAC-aware conflicts, TAC)
- **Cost efficiency** (no uneven node utilization, dynamic scaling)
- **Simplified operations**

Single Node RAC provides the optimal balance of compliance, stability, and operational simplicity for Avaloq on Exadata Cloud@Customer.

Maintenance, Downtime & Failover Strategy

Balancing Act: Downtime vs. DR Switchover

- A DR switchover or failover impacts **not only the database**, but also the **Avaloq application layer**.
- Due to this **cross-layer dependency**, the process has **not yet been automated**.
- **Automation is planned** as a next step once end-to-end orchestration is validated.

Automation is the goal, but cross-layer dependencies require careful validation first.

04 Cloning Concept

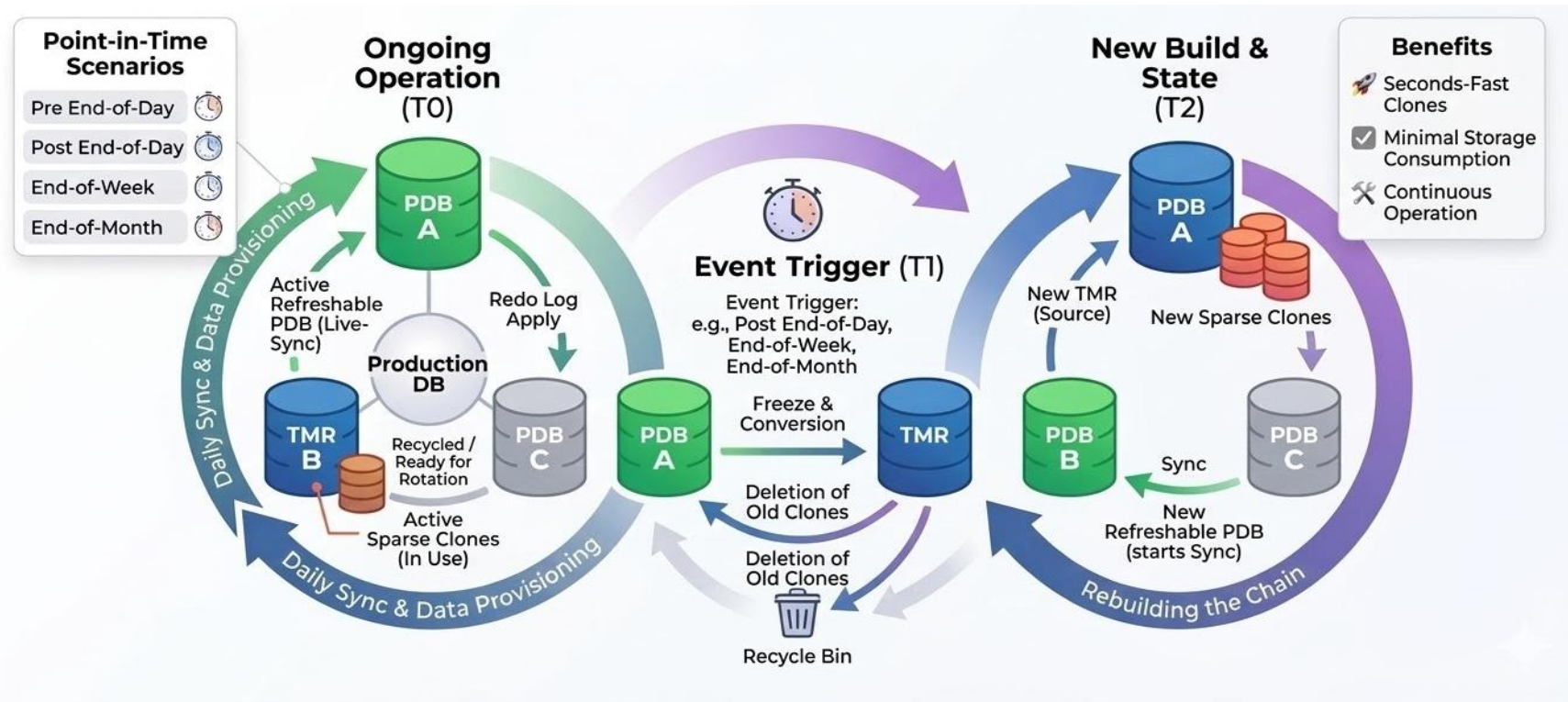
simplified

technical

Cloning Concept

Dynamic PDB-Cloning Carousel.

Efficient Lifecycle Provisioning of Point-in-Time Test Data



Core Messages

- **Sparse clones** for efficiency (pre-EOD, post-EOD, weekly, monthly, ad-hoc).
- **Time-critical cycles:** Pre- and post-EOD clones created within tight time windows.

Solution:

- **TMR carousel setup:** at least 3 TMR environments, with at least one **refreshable clone** for up-to-date testing.

05 Performance Insights

Performance Insights

Key Observations

- **Improved application responsiveness** post go-live.
- **Operational Policy Conflicts:** Avaloq listener vs. cloud security policies.
- **RUP performance bottleneck** due to NFS storage latency.
 - Storage location trade-offs: local disk vs. disaster recovery principles.



Further Improvement Thoughts

Next-Level Optimization: Where Do We Go from Here?

1. Clone Strategy Refinement

- Reduce number of clones (evaluate business-critical needs).
- Leverage **Flashback Database** to replace low-value clones.
- **Goal:** Lower operational overhead & NFS storage churn.

2. Performance Tuning

- Explore hybrid local/NFS caching for compiled files.
- Balance performance gains vs. DR requirements.

3. Automation Opportunities

- Streamline clone/refresh workflows.
- Reduce manual bottlenecks (e.g., TMR carousel management).

4. Patch & CPU Management

- Optimize rolling/quarterly patching coordination.
- Assess flexible CPU allocation to improve cost efficiency.

From lessons learned to actionable improvements – focusing on efficiency, automation, and Exadata’s full potential.

06 Outcomes & Lessons Learned

Outcomes & Lessons Learned

Summary

- **Successful migration:** Avaloq runs on Exadata Cloud@Customer.
- **Critical application components** must be offloaded from ExaCC.
- **Fixed minimum CPU allocation** limits elasticity and cost optimization.
- **Patching coordination** (e.g., dom0) requires additional effort.
- **NFS-heavy processes** do not fully leverage Exadata strengths (low-latency I/O).





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07 Questions? Let's discuss!

