

Oracle Database Private Cloud Implementation Architecture

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Journey so far...

- 10+ yr experience in Oracle Database & Little bit in Development...
- Worked on various Oracle Database version from Oracle 7 to Oracle 12c...
- Worked on forms/reports 3, 6i, 9i...
- Worked on Oracle Application Server 10g, Weblogic server...
- Passionate for Oracle Technologies...
- Frequent Blogger & Speaker in various events...
- Frequent Contributor in OTN database forum...
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Agenda

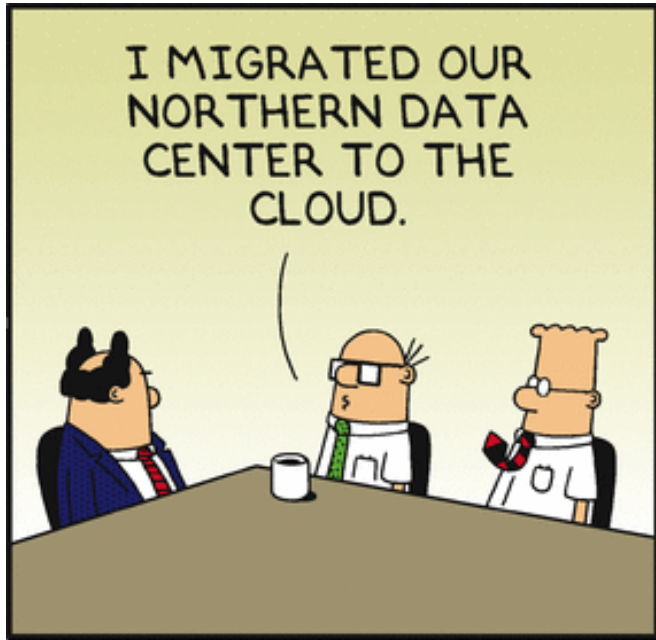
- Challenges for DBA and Organization
- DBaaS, Most Effective Solution
- Private Cloud Database Architecture
- Implementation Tools & Technologies
- Planning and Set up for Different Workloads
- Simplifies DBA Activities
- Q&A



Challenges for DBA and Organization

Challenges for DBA and Organizations

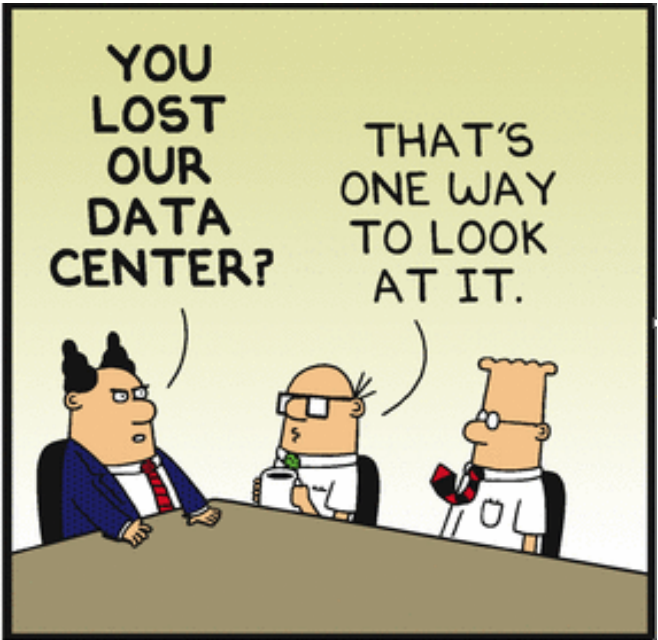
- IT is continually asked to do more with less.
- Increase agility while reducing cost and risk.
- Reduce operational expenditure on hardware, software and services.
- Each Project have multiple databases i.e. dev, test, qa, pre prod.
- Each database will be on separate VM or Machine.
- DBAs, spending time in provisioning, installation, set up env. etc.
- Cost of maintenance for each environment.
- Fear, to adopt Cloud.



Dilbert.com DilbertCartoonist@gmail.com



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This is just a funny side...

DBaaS, most effective solution...

DBaaS, most effective solution...

- Database-as-a-service (DbaaS) is a cloud computing service model that provides users with some form of access to a database without the need for setting up physical hardware, installing software or configuring for performance.
- Database as a Service primarily started as a consolidation exercise for reducing capital expenditures, but as it evolved, organizations started looking into other key drivers like self-service, capacity planning, resource management etc

DBaaS, most effective solution...

Key Benefits,

- ✓ Database clouds are agility and faster deployment of database services.
- ✓ It simplifies IT infrastructure.
- ✓ Databases are provisioned and de-provisioned; the associated computing resources are consumed and then released.
- ✓ Database resources can be consumed for the duration of a project, and then be automatically de-provisioned and returned to the resource pool.
- ✓ Computing costs can be tracked and charged back to the consumer.

Private Cloud Database Architecture

Private Cloud Database Architecture...

Cloud Database consideration factors.

- ❖ Business Objective

- ✓ Benefit and Cost consideration

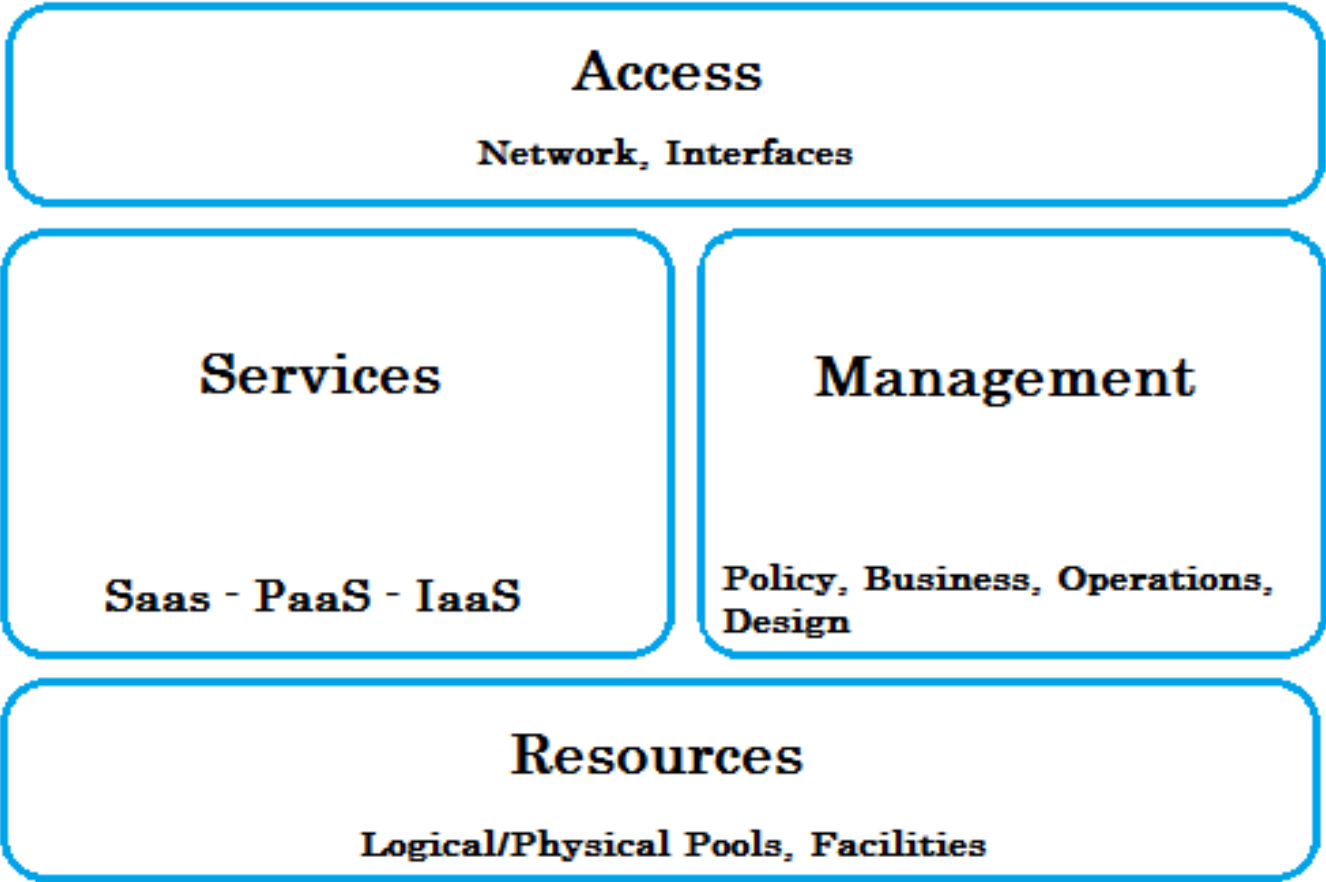
- ❖ IT Objective

- ✓ Technology and Process consideration

Private Cloud Database Architecture...

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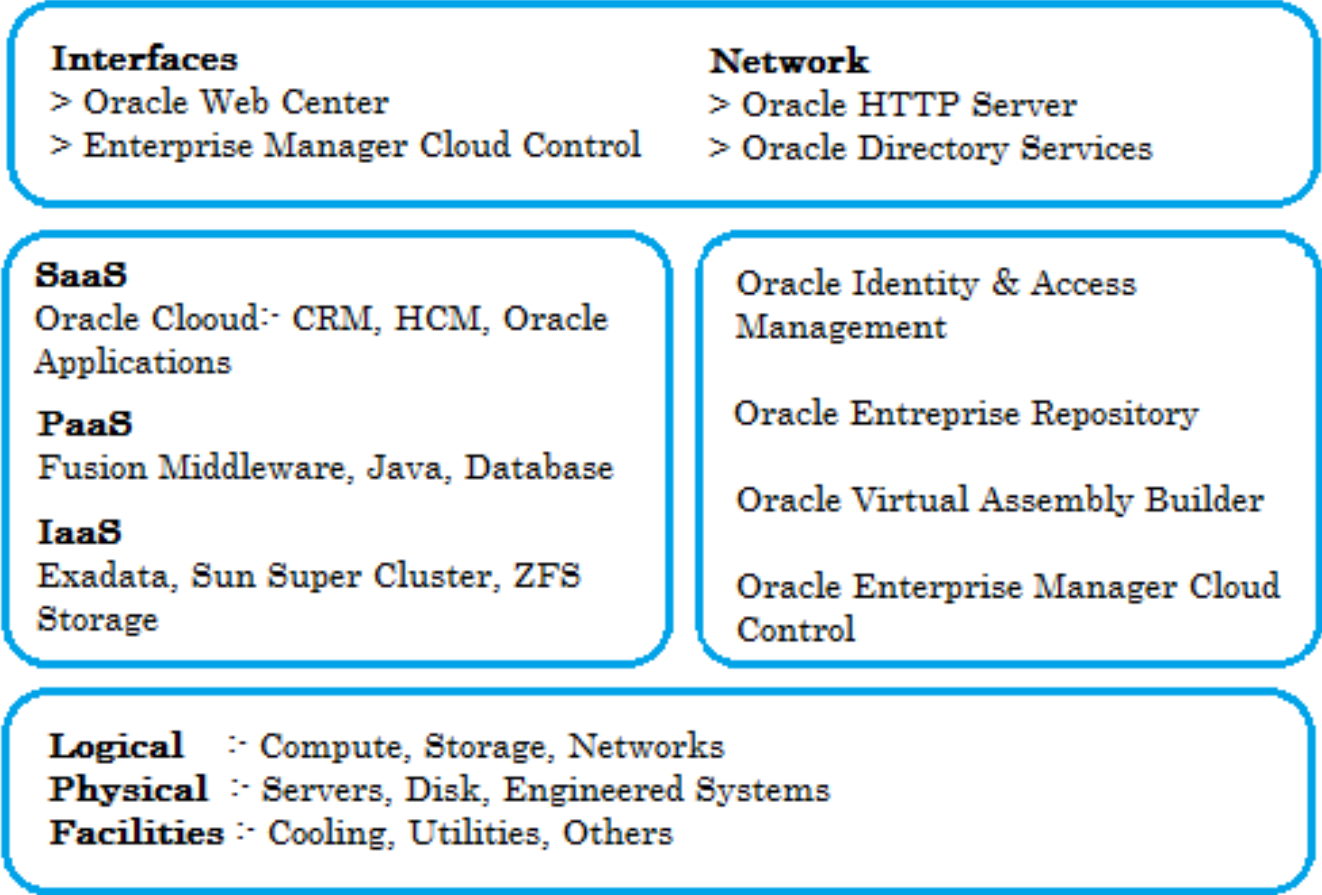
Cloud Architecture : Logical View



Private Cloud Database Architecture...

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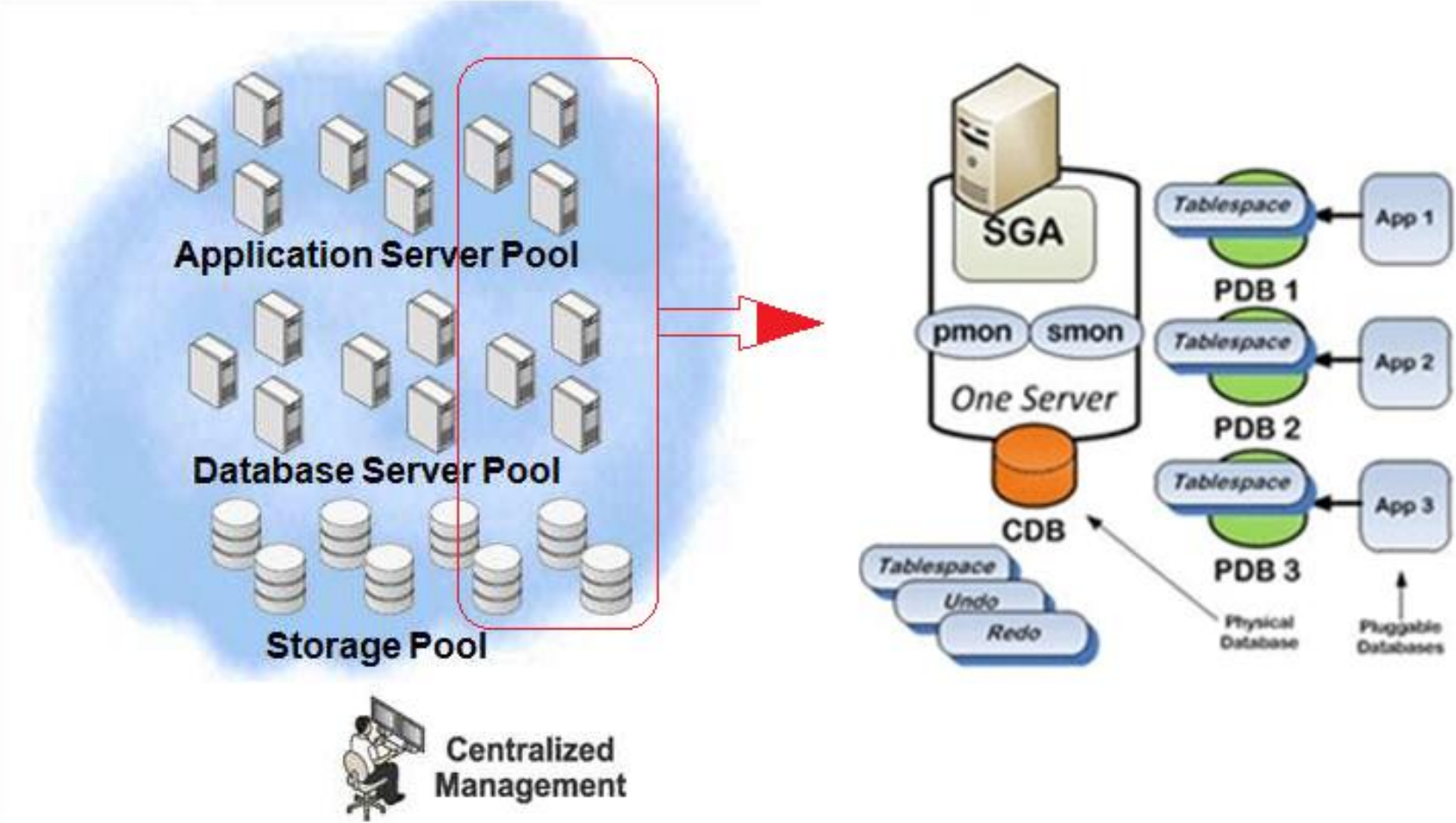
Product Mapping with Logical View



Private Cloud Database Architecture...

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DBAs Perspective Cloud Database Architecture



Tools and Technologies to Deploy Private Cloud

...Choose Wisely...

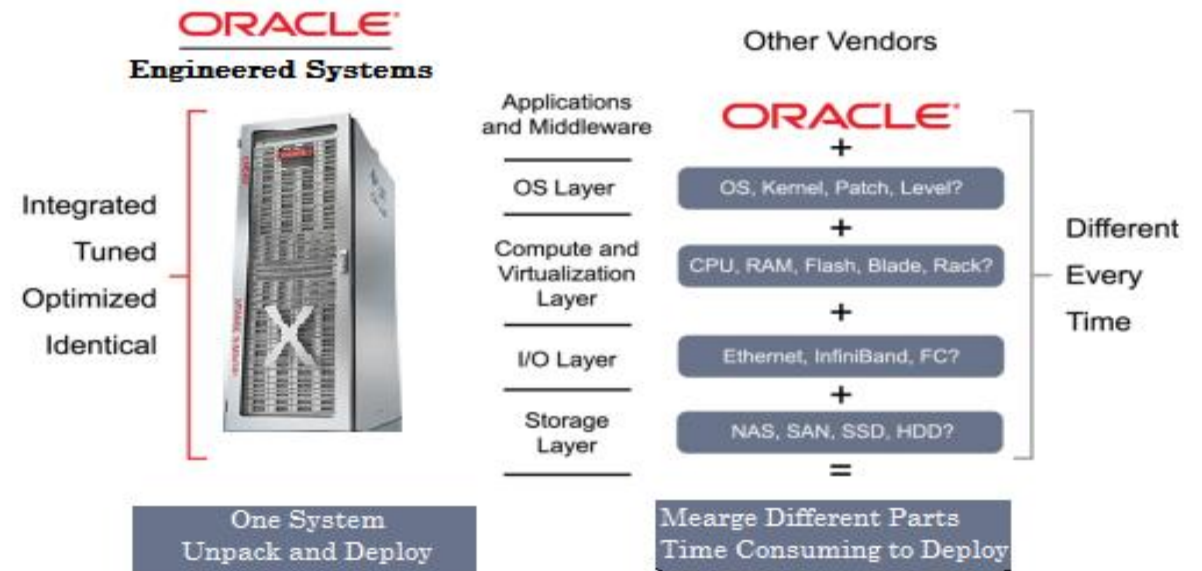
Oracle Product Family for Cloud Deployment

- ✓ Oracle Database 12c
- ✓ Oracle Enterprise Manager 12c/13c

- ❖ Oracle Private Cloud Appliance
- ❖ Oracle Fusion Middleware
- ❖ Oracle Linux / Solaris

- ☐ Engineered Systems
- Oracle Exadata/Exalogic
- Oracle SuperCluster

Oracle Engineered Systems	Custom Configuration
Run Oracle Software	Run Oracle Software
Oracle integrated Hardware and Software	Customer integrated Hardware and Software
Risk free and quick to deploy	Error and time consuming to deploy
Support from one vendor	Support from multiple vendor
‘- Hardware	‘- Hardware
‘- Software	‘- Software
‘- Operating system	‘- Operating system



Planning and Set up for Different Workloads

Sample Workload Solution

Work Load Type	Solution
Business Critical	Dedicated Pool of Database
Data warehouse Application	Shared Pool of Database. CDB/PDB
Mix Workload (Multiple project env)	Shared Pool of Database. CDB/PDB With Resource Management
Packaged Application (Project Specific)	Shared Pool of Database. PDB only With Resource Management
Instant Provisioning (Priority cloning for Test/Dev)	Shared Pool of Database. PDB only With Resource Management

Example:- To share server pool

16 CPU Box with 48 GB RAM			
DB Instance	CPUs	RAM	Objective
Instance 1	2	8	Dev
Instance 2	2	8	Test
Instance 3	6	16	Critical
Instance 4	6	16	Performance
Total	16	48	

Example:- To share DB instance

16 CPU Box with 48 GB RAM			
DB Instance	CPUs	RAM	Objective
Instance 1	16	48	App1, App2, App3
✓ Ideal for Mix workload, Packaged Application, Schema consolidation for Dev, Test and QA environment.			
✓ Multiple PDBs will share same DB instance and hardware resource.			

How It Simplifies DBA Activities

- ✓ This high-density architecture enables servers, operating systems, and databases to be shared and lets system administrators manage many databases as one database.
- ✓ Reduce the number of virtual and physical environments by consolidating databases into a shared database infrastructure.
- ✓ Combining database assets into one consolidated platform makes the overall IT environment easier to manage and lowers IT operational costs.
- ✓ Higher utilization of systems based on peak hours at different time and shift.
- ✓ Any server in the pool can host one or multiple database instances.
- ✓ One can configure, multiple application schemas in one single database, hosting multiple databases on a single platform, or a hybrid of the two configurations.
- ✓ Administrator can integrate OS, Networking & Storage at single point in Cloud environment. No need of engagement with different department for provisioning the same.

