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A Closer Look at the Oracle Cloud

Sushil Motwani – Oracle Solution Architect

AGENDA

1. Mission Statements – About Rolta AdvizeX
2. What is IAAS, PAAS and SAAS?
3. Oracle IAAS Offerings
4. Oracle Database and Cloud PAAS Offerings
5. Cloud Options for ERP Customers
6. Question and Answer

Speaker Profile

Sushil Motwani – Oracle Pre-Sales Solution Architect – Rolta AdvizeX

- 24 years of experience as an Oracle Professional, especially on the Database Administration, Apps DBA technologies, Oracle Fusion Middleware Technologies and Business Intelligence Applications.
- Astute thought leader in Oracle; has published training material for Oracle University, and presented on multiple occasions at events such as Collaborate (Oracle Applications User Group), Oracle Open World, Oracle Health Sciences Conference. Sushil is actively involved with the OAUG and IOUG groups and presented at a number of SIGs (Special Interest Groups) at regional and national levels.
- Has worked at Oracle's Advanced Customer Services for 6+ years leading some of Oracle's largest premier customers as a Technical Account Manager, Senior Director at Data Intensity as part of their Application Engineering Team, and at Harvard University as their Oracle and Microsoft SME.
- Won several awards in the different roles at the organizations that he worked for, both as an Individual Contributor as well as Management positions

We enable our clients to achieve their business objectives through our committed professionals utilizing AdvizeX proven technology solutions and methodologies.

Our passion for technology is guided by our vision of "Customers for Life".

We believe that technology is at the heart of maintaining relevance and creating value for our clients, partners, and people.

What does AdvizeX do?

- Define an IT strategy and Cloud Strategy that aligns customers short-term needs with their long-term goals.
- Drive greater agility and achieve increased profitability.
- IT Modernization and Dramatic Improvements
- Data Center Strategies for IT Efficiency
- On Premise and/or Cloud Infrastructure

TRUSTED ADVISORS

41+ years, 96% customer loyalty

EXPONENTIAL SOLUTIONS

Hybrid Cloud, Security, and Data

LEADING TECH EXPERTS

264+ Technologists
Over 800 certifications

LOCAL/GLOBAL OPERATIONS

Global company — local support, sales and technology resources

INTEGRATED SERVICES

Advisory, Consulting and Cloud Managed Services

BROAD CUSTOMER BASE

Over 2,700 customers covering, automotive, healthcare, education, utility, financial, government, and retail markets.

Advisory

We work together to create a unique plan based on your business needs, spell out the costs and the benefits, and map out the best way for you to get there.

Consulting

We bring the right people and partners together to solve your business challenges, drawing from our team of 2,500+ IT specialists.

Cloud Managed Services

Once the solution is built, we keep it running 24/7/365 with our global managed services, so you can stay focused on innovation rather than operations.

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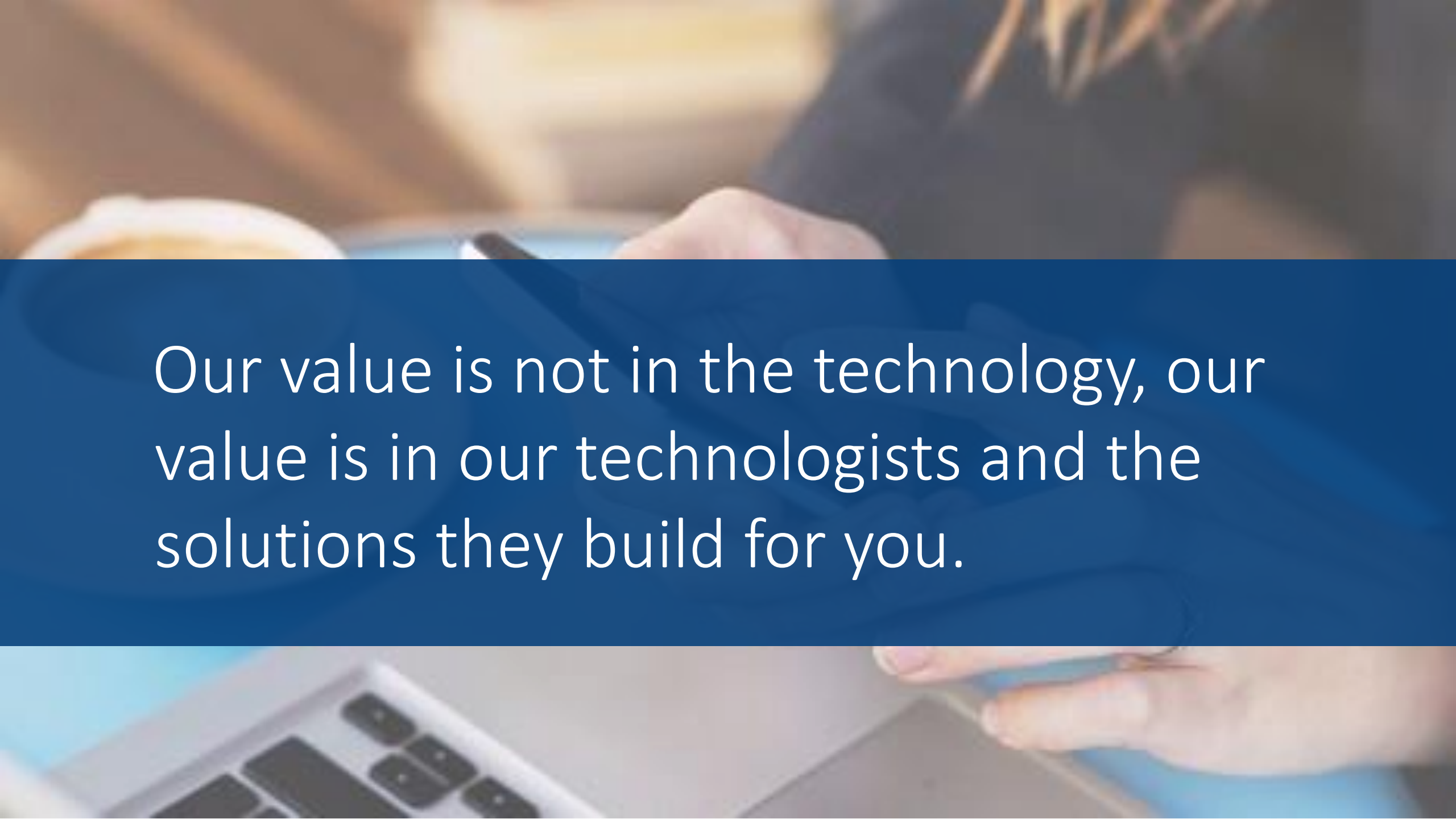
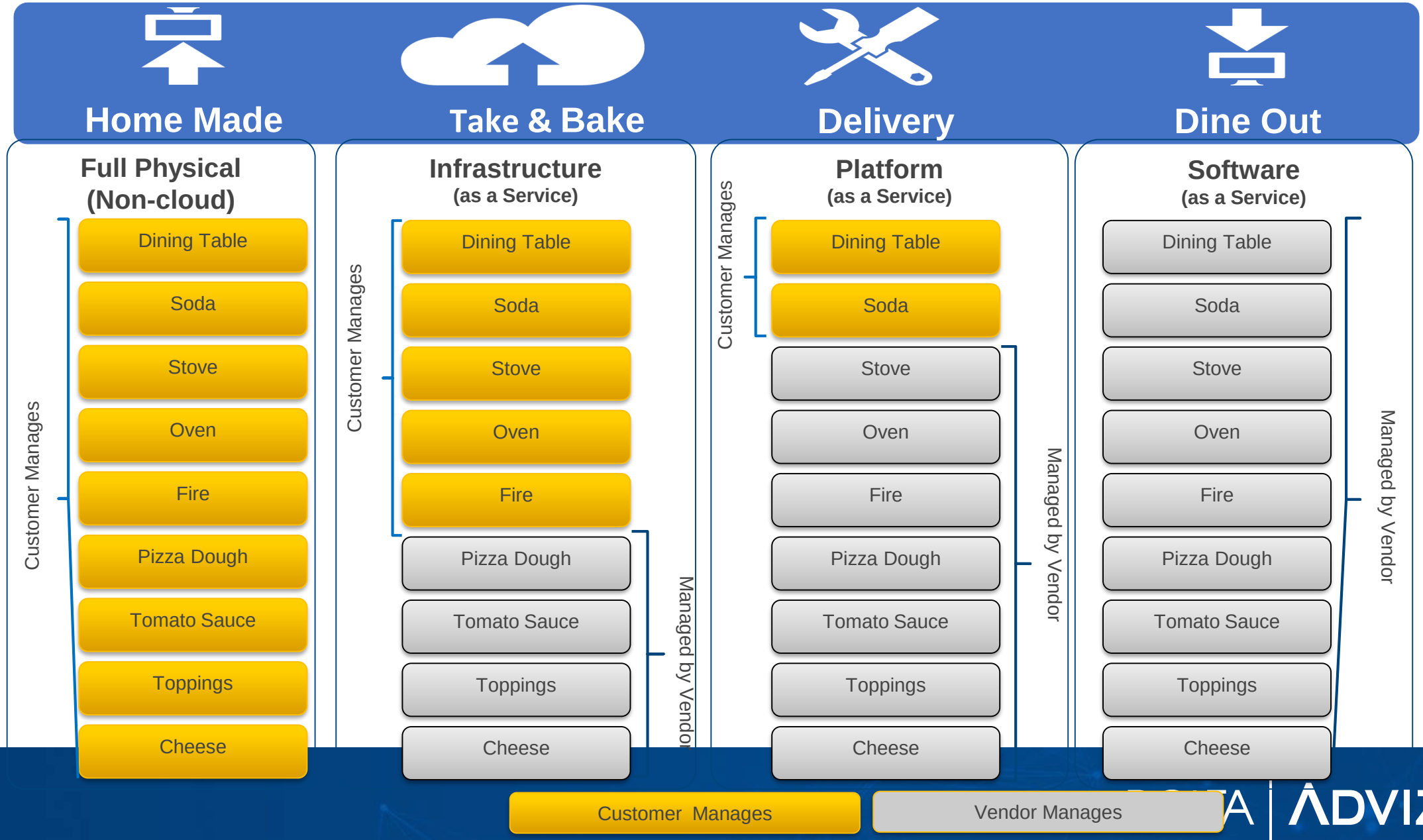


Our value is not in the technology, our value is in our technologists and the solutions they build for you.

What is IAAS, PAAS and SAAS?

Pizza As A Service



Oracle Cloud Services

host

build

consume

Full Physical (Non-cloud)

Customer Manages

- Applications
- Data
- Runtime
- Middleware
- O/S
- Virtualization
- Servers
- Storage
- Networking

Infrastructure (as a Service)

Customer Manages

- Applications
- Data
- Runtime
- Middleware
- O/S

Managed by Oracle

- Virtualization
- Servers
- Storage
- Networking

Platform (as a Service)

Customer Manages

- Applications
- Data

Managed by Oracle

- Runtime
- Middleware
- O/S
- Virtualization
- Servers
- Storage
- Networking

Software (as a Service)

Managed by Oracle

- Applications
- Data
- Runtime
- Middleware
- O/S
- Virtualization
- Servers
- Storage
- Networking

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Top Corporate Priorities and Expectations

- Always-on Availability
- Faster Innovation Cycles
- Security and Regulatory Compliance
- Total Cost of Ownership Reduction
- Rapid, Flexible Deployment Options
- Ease of Migrating, Integrating and Creating Applications

Top Corporate Priorities and Expectations

Business Priorities

- Innovation
- Agility
- Lower Cost
- Reduce Risk

Grow and Transform the Business

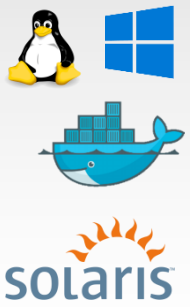
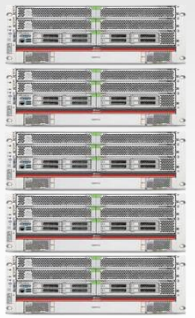
IT Priorities

- On-demand self-service
- Rapid elasticity
- Measured service
- Broad network access

Enable Business Growth and Transformation

Oracle IAAS

Oracle IaaS Compute Offerings
Full Suite of Services – for All Enterprise Needs

Bare Metal	Elastic Compute	Container Service	Ravello	Dedicated Compute	Cloud @ Customer
					

Storage – Block, Object, Archive, Local nVME, storage S/W appliance

Network – VPN, FastConnect, Network Bonding

Data Center Regions & Availability Domains – Low latency, High Bandwidth

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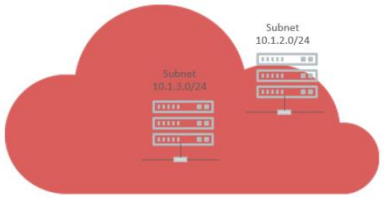
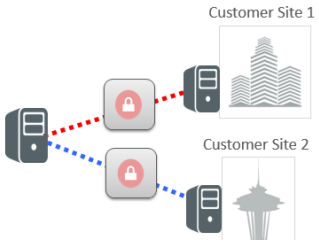
Oracle IAAS Network Options - Virtual Cloud Network with IPSEC VPN, MPLS and Load Balancer capabilities

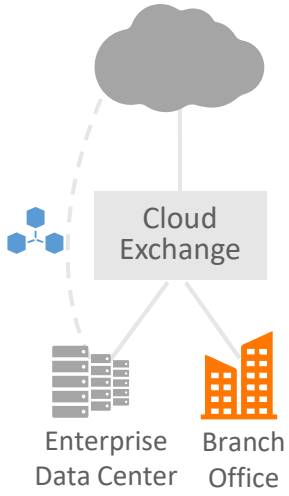
Virtual Cloud Network



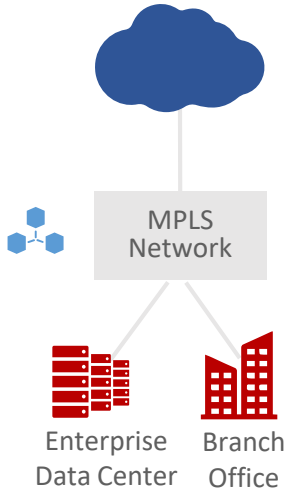
IPSEC VPN



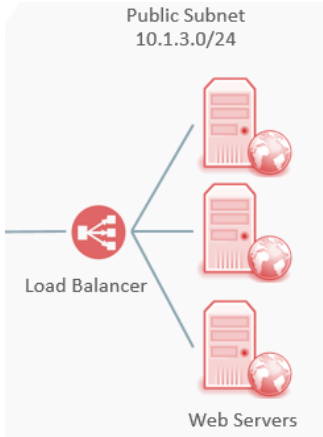
Oracle Cloud Fast Connect SE



Oracle Cloud Fast Connect PE



Load Balancer



Hardware – Physical Servers & Storage

Core Data Center & Access Network

Data Center Regions & Availability Domains

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Oracle IAAS Storage Options

Local NVMe	Block	Object	Archive	File & Database Backup	Storage Cloud Software Appliance
			COMMVAULT	Symantec. COMMVAULT	POSIX NFS SMB, NAS WebDav

Hardware – Physical Servers & Storage

Core Data Center & Access Network

Data Center Regions & Availability Domains

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Oracle IAAS Cloud

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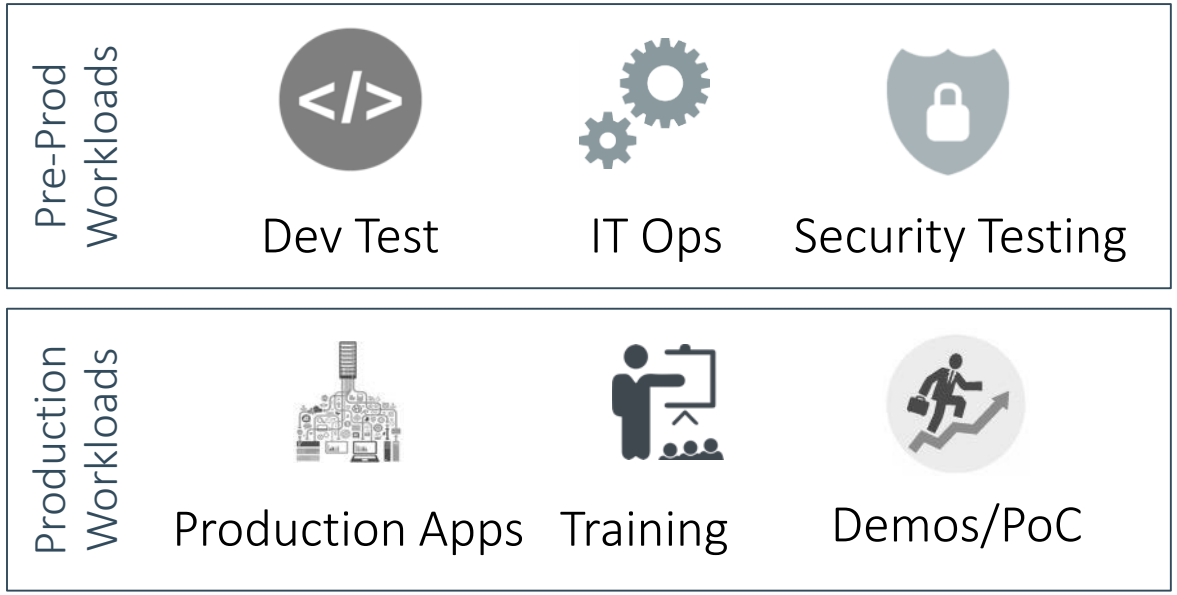
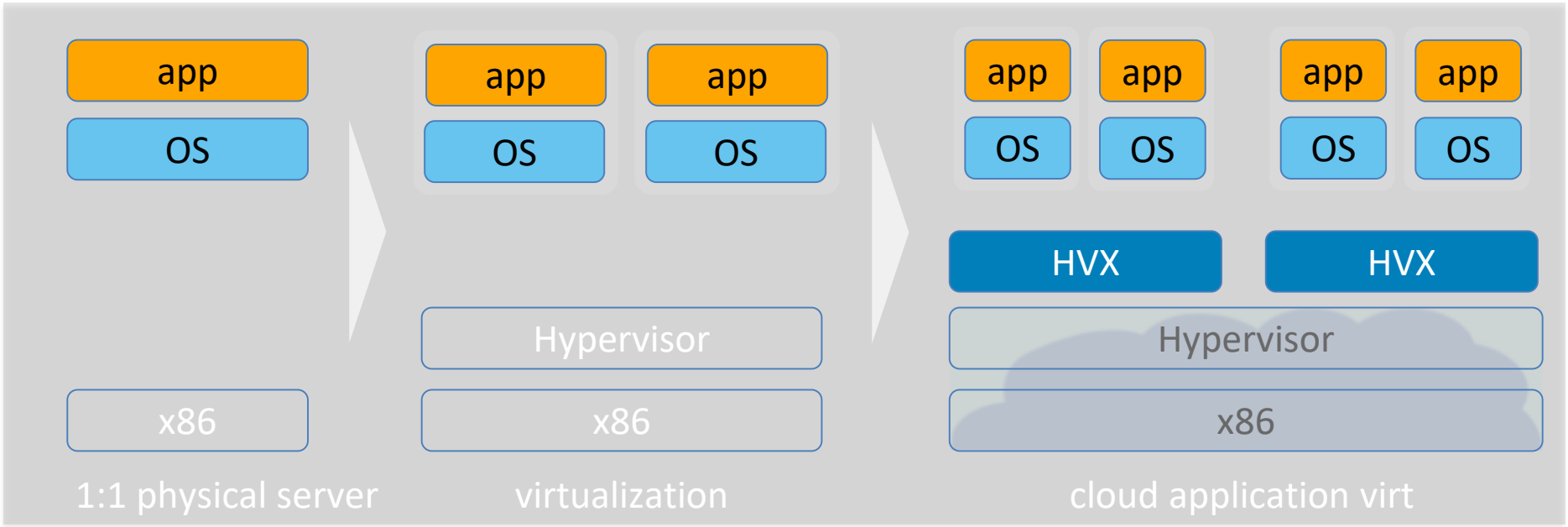
Oracle Ravello Cloud Service

- Run VMware & KVM workloads natively on cloud
  - No VM conversion required
  - Enables enterprise DC-like networking
- Layer 2 networking in public cloud
  - No networking changes required
  - Support for virtual network & security appliances
- Bring your own VPN, firewall, security solution to cloud
  - No application reconfiguration required

Ravello is well-suited for key VMware & KVM workloads



Oracle Ravello HVX – Nested Hypervisor



- Runs VMs exported from VMware / KVM private cloud setup *without any change* including network/security appliances
- Runs any VM (e.g. VMware) in any public cloud region/zone

Oracle IAAS Differentiation

Breadth and Integration

- Extensive choice of compute, storage & networking offerings
- Seamless integration with PaaS and SaaS

Next Generation IaaS

- Raises the bar: more performance and isolation, less overhead
- Easily deploy production apps with fault-independent, multi-site HA

Performance & TCO Leader

- Industry-first elastic bare metal servers: blazing fast, launch in minutes
- DB, compute, storage on same microsecond latency network
- 3.4X faster, 8X lower TCO[1]

Unmatched Security and Governance

- Total isolation of customer resources from compute to network
- Governance designed for complex organizations

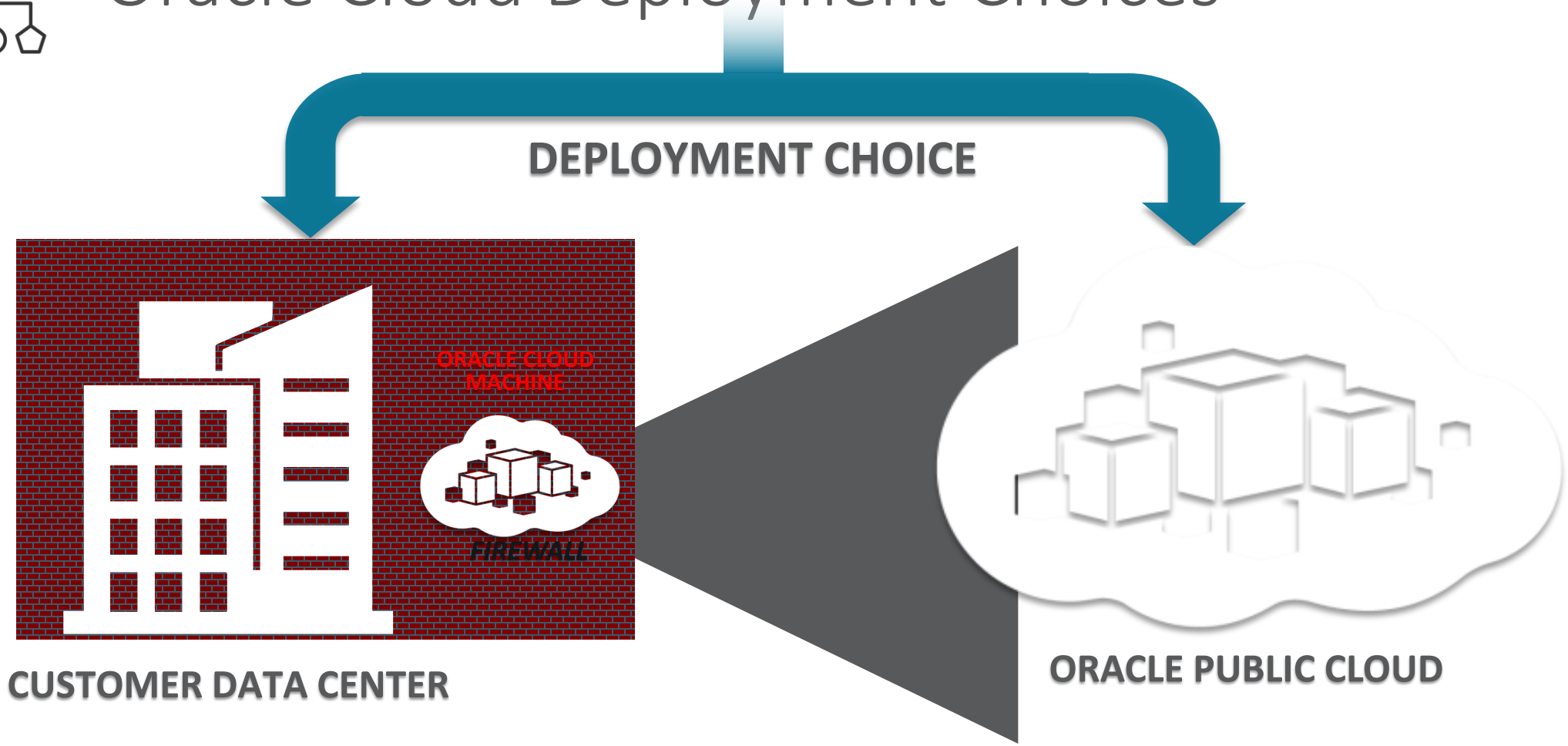
VMware workload portability with Ravello

- Remove time, resources & investment barriers re-architecting
- Run existing virtual applications as-is on public clouds

Hybrid cloud with Cloud @ Customer

- Complete deployment flexibility – customer chooses
- Same as Public Cloud, but within secure on-premises

Oracle Cloud Deployment Choices

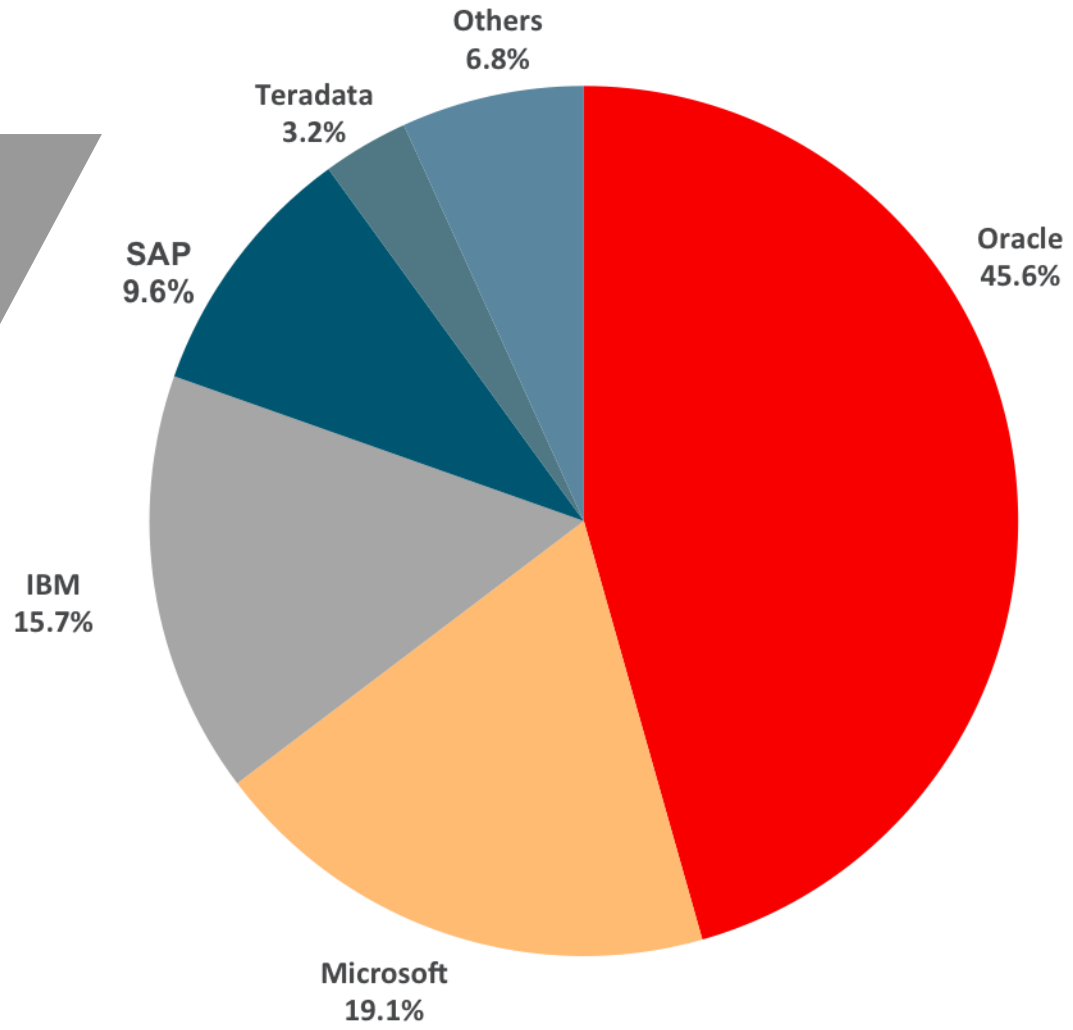


Oracle Public Cloud Services Delivered On Customers Premises

Oracle Database and Backup Cloud Services - PAAS

Oracle Database Customers

- More than **2X share** of nearest competitor
- Focusing on Oracle database customers is a **significant opportunity**
- **96%** of DB customers are evaluating cloud options
- **83%** of CIOs deem IaaS as an option
- **38.4%** growth projected for IaaS Market



Source: Gartner "Market Share: All Software Markets, Worldwide 2015", March 31, 2016

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Oracle Database Cloud – Value Proposition

- Reduced Time and Cost of Provisioning and Management
- Self Service and Ease of Access
- Standardization of Services Eases Database Management
- Elastic, Capacity on Demand
- Easier Adoption of Full Oracle Capabilities through Automation
  - Real Application Clusters (RAC), Data Guard, Active Data Guard, TDE Encryption, Multitenant PDBs, Compression, Partitioning, Spatial, Text, JSON, XML, In-Memory, Performance and Tuning Advisors, ASM, REST
- Subscription Pricing

Oracle Database Services

Oracle Database Enterprise Cloud

Full-featured dedicated single-node / RAC database

Primary Use Case: Dev, test and deployment of existing apps

Oracle Database Exadata Cloud Service

Highest-performing and most-available database platform

Primary Use Case: Mission-critical applications and high density database consolidation

Oracle Exadata Express Service

Fully managed schema as a service for app Dev with APEX, SQL Developer, Java Cloud and RESTful Web Services

Primary Use Case: Development and deployment of departmental applications

Oracle Database Backup Cloud Service

Capacity on demand eliminates storage hardware Planning Transparent management, redundancy and highly available

Primary Use Case: Enterprise data security protection and privacy

100% compatibility with on-premises	Fully automated or managed backups, patching and tooling	Simple to move locations or create a hybrid cloud	Simple provisioning in a few clicks

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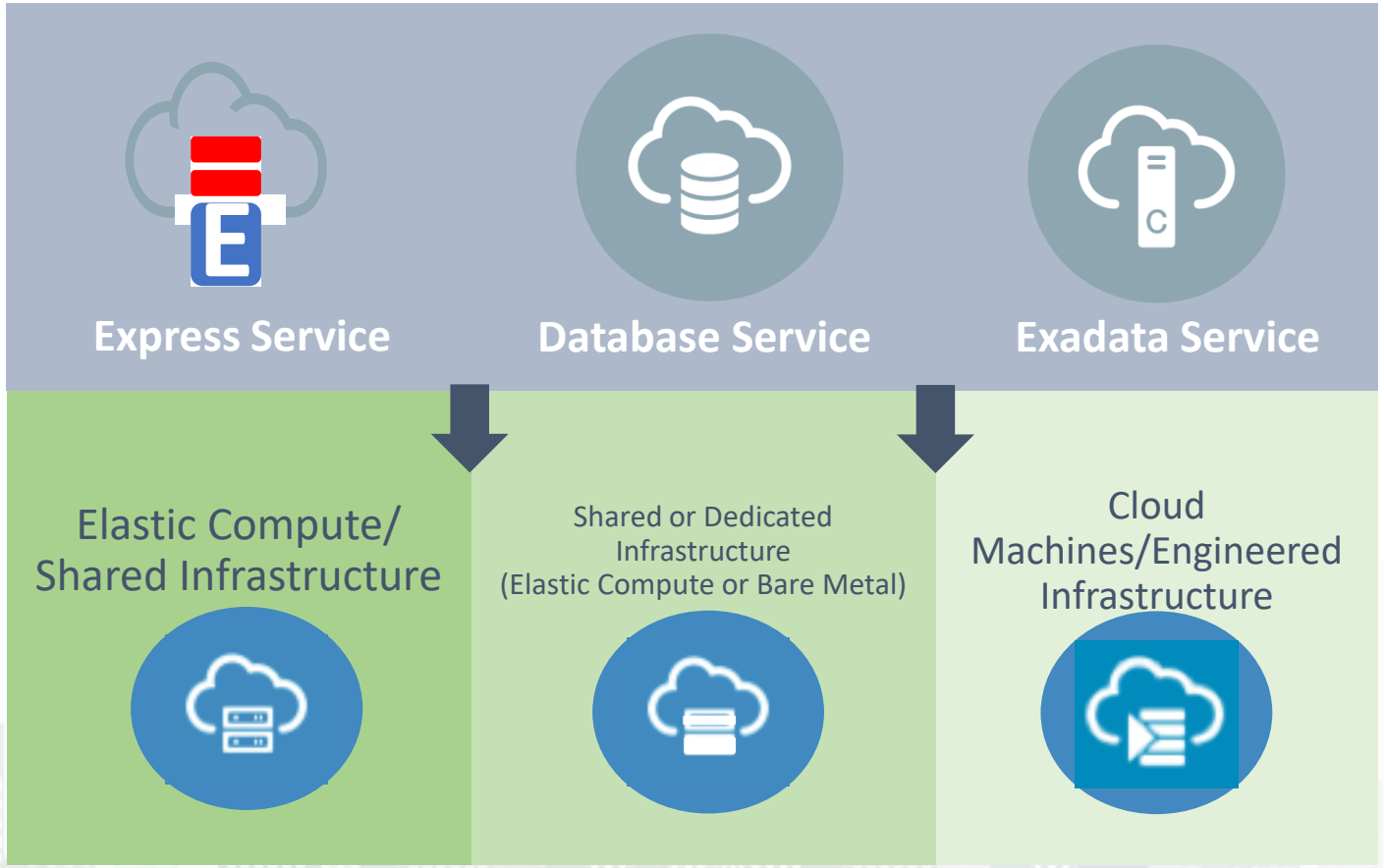
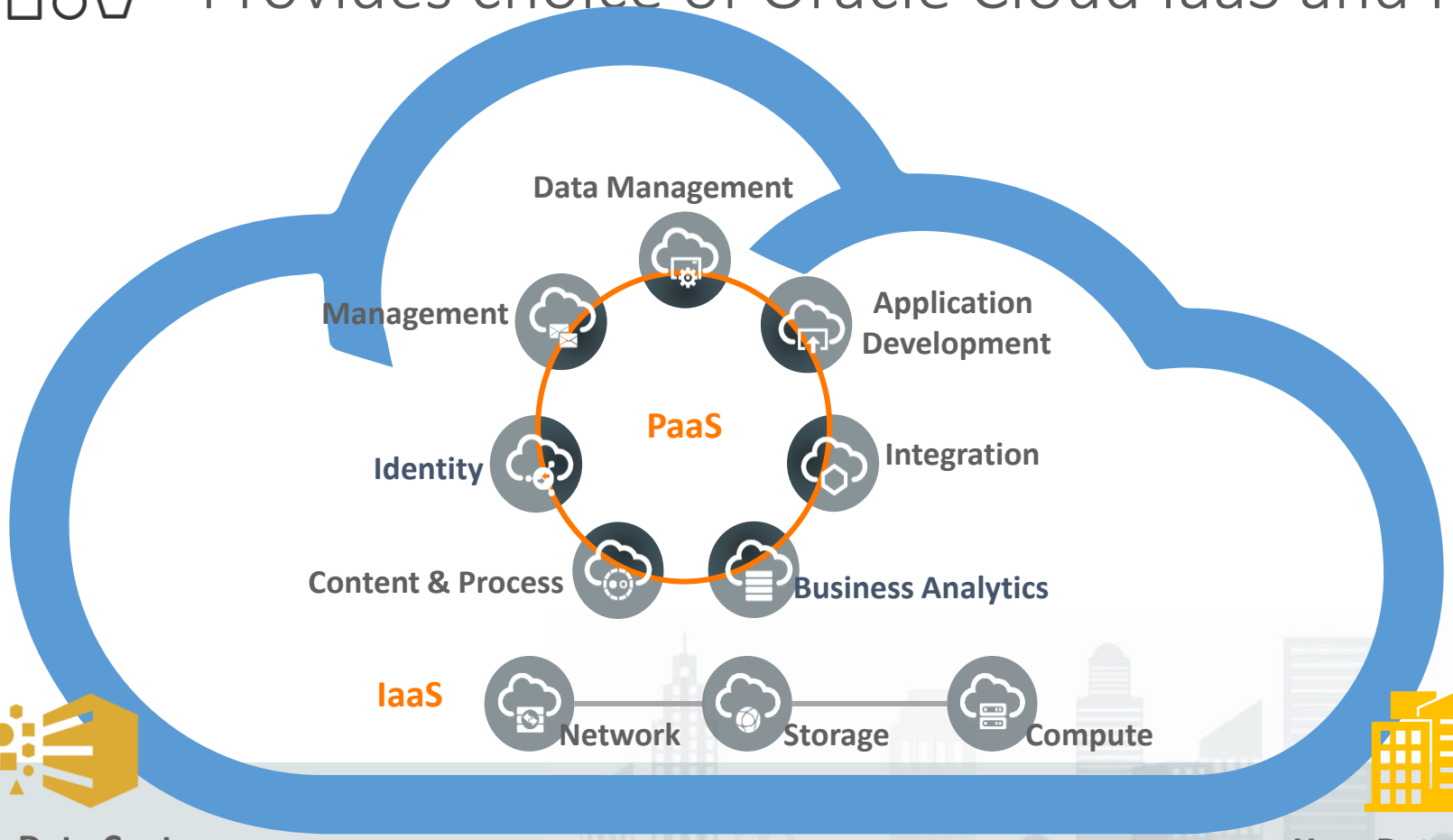
Database Cloud Services

- Database Development and Test
- SMB & Departmental Apps
- Enterprise Apps
- Highest availability, scalability and performance
- **Your choice of cloud infrastructure**



Oracle Cloud Machine – Cloud@Customer

Provides choice of Oracle Cloud IaaS and PaaS



- Same PaaS and IaaS software, same updates as Oracle Cloud
- Oracle Cloud operated and delivered as a service behind your firewall
- Same cost-effective subscription pricing model as Oracle Cloud
- Helps conform to regulatory, privacy, and business requirements

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Database Cloud Services - Packages

Standard

- Full database instance
- Transparent Database Encryption
- Limits: Up to 16 OCPUs and 240GB of memory

Enterprise

Adds all 11g or 12c Enterprise Edition features

- Flashback Database
- Data Guard
- Parallel Backup and Recovery
- Virtual Private Database

High Performance

Adds most EE options

- Multitenant
- Partitioning
- Advanced Compression
- Advanced Security, Label Security, Database Vault
- Real Application Testing
- OLAP, Analytics, Spatial and Graph
- Management Packs

Extreme Performance

Adds all EE options

- RAC
- In Memory
- Active Data Guard

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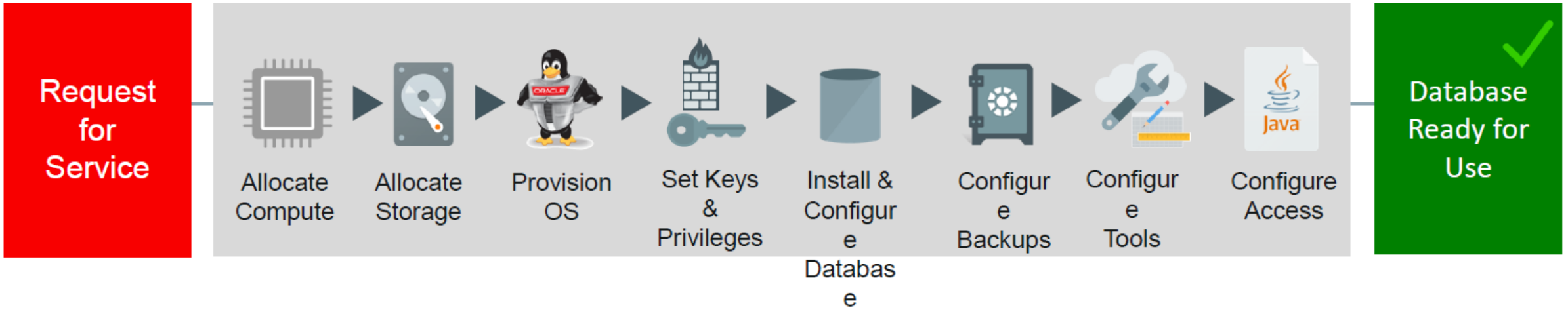
PAAS: Database Cloud Services

- **Database as a Service**
  - Full-featured dedicated 11gR2 or 12c instance(s)
  - SE1, EE, EE High Performance, EE Extreme Performance
  - Customer or Oracle backs up, patches, manages DBMS
  - Full SQL*NET, root access, Enterprise Manager, all DBMS tools
  - Full portability – on-premises & cloud
  - **Primary Use Case:** Dev/Test and “lift & shift” applications to Oracle Cloud
- **Database Schema Service**
  - Each tenant gets dedicated schema(s)
  - Fully managed service
  - Application development: APEX, SQL Developer, Java, RESTful Web Services
  - Includes 30+ productivity applications
  - **Primary Use Case:** extensions for Oracle Cloud SaaS applications

Oracle Database Cloud Service Automation (Demo if needed)



Benefits

Reduced time and complexity to provision database services

Increased standardization of the "fleet"

Also use to deploy with Data Guard or Real Application Clusters (RAC)

Compare with Oracle Database On-Premise Provisioning

On-Premise

1. Procure Data Center Floor space
2. Procure Servers
3. Procure Storage Devices
4. Procure SSL Certificates & Keys
5. Procure HSM Devices (for encryption)
6. Procure OS Licenses
7. Procure Anti-Virus Licenses
8. Procure SIEM Licenses
9. Allocate Storage Admin
10. Allocate System Admin
11. Allocate Database Admin
12. Allocate Network Admin
13. Install Server
14. Cable Server to Network
15. Install SSL Certificates & Keys
16. Acquire Public/Private IP Addresses
17. Acquire Domain Name (from internal DNS)
18. Install Storage Devices
19. Acquire IP Addresses
20. Install SSL Certificates and Keys
21. Create Physical Storage Volumes
22. Register Storage Devices with Server
23. Install Operating System
24. Create System Administrator Accounts
25. Register with Corporate LDAP Directory
26. Register with Audit Software
27. Add Users to System Administration Accounts
28. Register Servers with Redhat Administrative Console
29. Install Hypervisor
30. Create Virtual LAN Partitions
31. Allocate IP Addresses (Private)
32. Carry out Network Address Translation (NAT)
33. Register Virtual LANs with Network Switch
34. Add Users to Hypervisor Administrator Accounts
35. Register Guests with VMWare ESX Console
36. Run Clusterware Pre-requisite checks
37. Run Oracle DBMS Install Pre-requisite checks
38. Read database installation guild
39. Stage Oracle Database software
40. Configure Oracle Database
41. Log in to the system as root
42. Check HW, Memory, System, Disk, software, OS, OS Kernel, package, compiler, and additional software requirements
43. Create required OS Groups and Users, Oracle Inventory group, oracle software owner, OSDBA group, OSOPER group
44. Synchronize groups with LDAP repository
45. Configure Kernel parameters and resource limits, create required directories, configure user
46. Install oracle database; select clusterware/grid installation, specify base installation pathname
47. Specify software location, choose file system or ASM, specify file location, specify ASNSNMP password, database edition, OSDBA group, global name
48. Specify database name, database name domain, administrative password, confirm password
49. Verify database is functioning properly
50. Email developers access credentials and configuration details

Days or Weeks

Oracle Cloud

1. Upload Key
2. Choose Software Version and Release
3. Choose Edition SE, EE, EE High, EE Extreme
4. Choose Shape – storage, cores, memory
5. Choose Backup and Recovery Configuration
6. Press Go

< 45 Minutes

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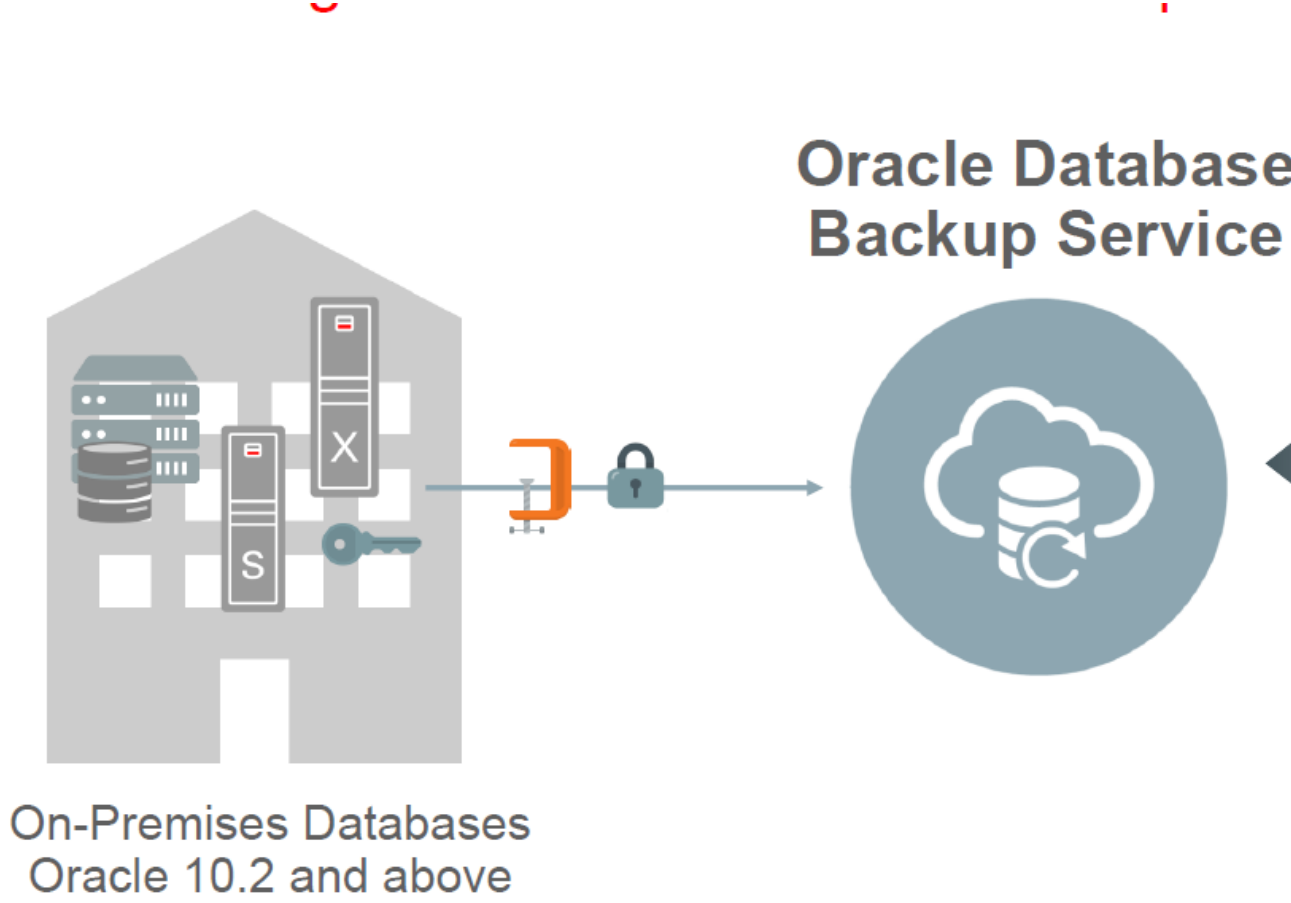
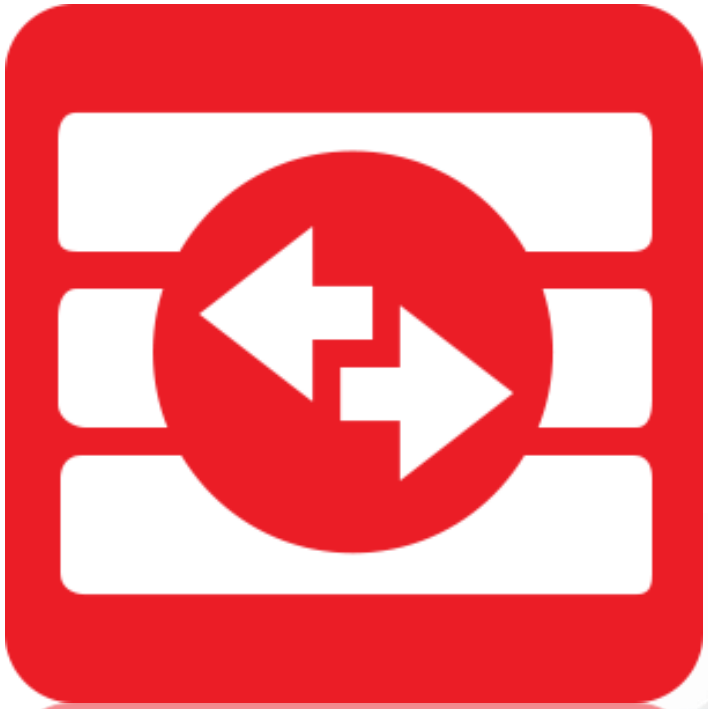
Oracle Cloud Service – Backup as a Service



- Instant Offsite Storage
- Cost Effective
- On-demand Scalability
- End-to-End Security
- Encryption
- Compression
- 3-Way Protection
- 24x7 Data Availability

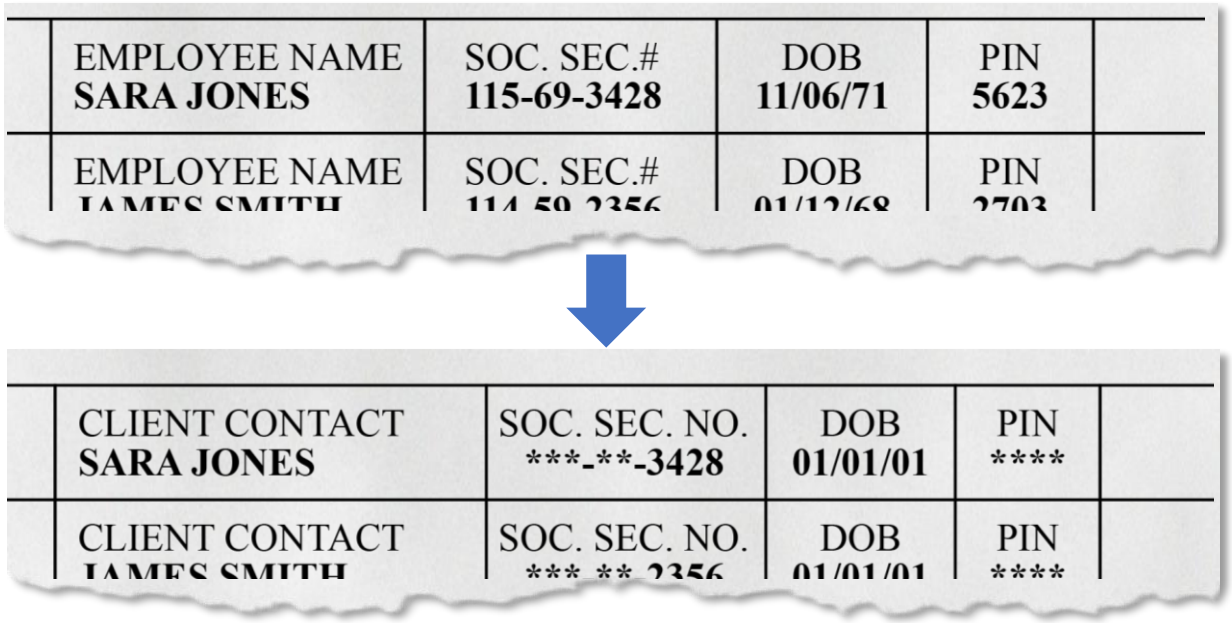
Oracle Cloud Service – Backup as a Service



- Simple, low-cost, automated solution for backing up Oracle Databases to Oracle Storage Cloud Service
- Backups compressed and encrypted by RMAN, keys kept locally
- Triple-mirroring of data for added redundancy
- Includes RMAN channel licenses at no additional cost
- Supported versions: Oracle Database 10.2, 11g, 12c
- Supported platforms: Linux, Solaris, Windows (all 64 bit)
- **Primary Use Case:** “Backup & Archive” on-premises Oracle Databases to Oracle Cloud

Security in the Oracle Cloud

- Port Security
  - Out of the box, only 22 is open
  - IP White Listing
  - Open via Cloud Console
- Tablespace Encryption
- Data Redaction
- Data Masking and Subsetting
- Encrypted SQL*Net



Oracle Database Cloud – Typical Use Cases….

- Database Backup to the Cloud
- Dev-Test Database Applications and Upgrades
- Production Database Deployments
- Disaster Recovery to the Cloud
- Data marts and reporting
- DevOps capabilities
- Extend the Data Center to the Cloud

Best Practices for moving the Oracle Database to the Cloud – Key Points to Remember

- Same Software in the cloud as on-premises
- Fast Provisioning
  - All Database Options can be used!
- Application Development Choice
- Unified management: On-premises and Cloud
- Backup and High Availability Options
- Multiple levels of Security

Other Oracle Database PAAS Offerings

Oracle Database Cloud – Typical Use Cases….

Database Backup Service

Simple, Low Cost Solutions for Backing up Oracle Database to Oracle Storage Cloud Service

Database Cloud Service

Lift and Shift Test / Dev Applications to the Oracle Cloud

File Storage

Provided as a Virtual Appliance and a Cloud Service

Archive Storage

On-Demand Capacity Scales to Petabytes

Storage Cloud: For Shared File Access and Archival

Key Features

- File-based NFS v4 network protocol access to Storage Cloud and Storage Cloud Archive services
- Scalable and highly available
- Inherits durability and security of Storage Cloud Service
- Provided as a virtual appliance and as a cloud service

Key Features

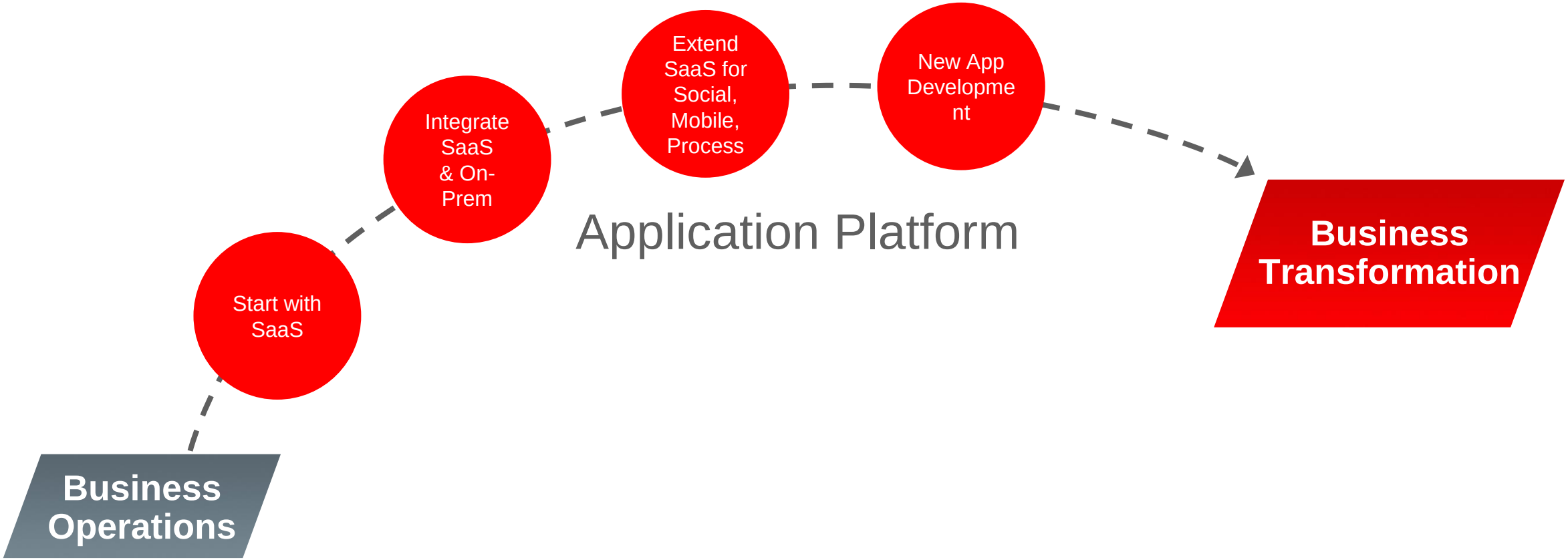
- On-demand capacity, scales to petabytes
- Multiple redundant copies of data for the highest availability
- All data encrypted for security
- Automatic data integrity checks for durability
- Industry standard APIs

Storage Cloud: Use Cases

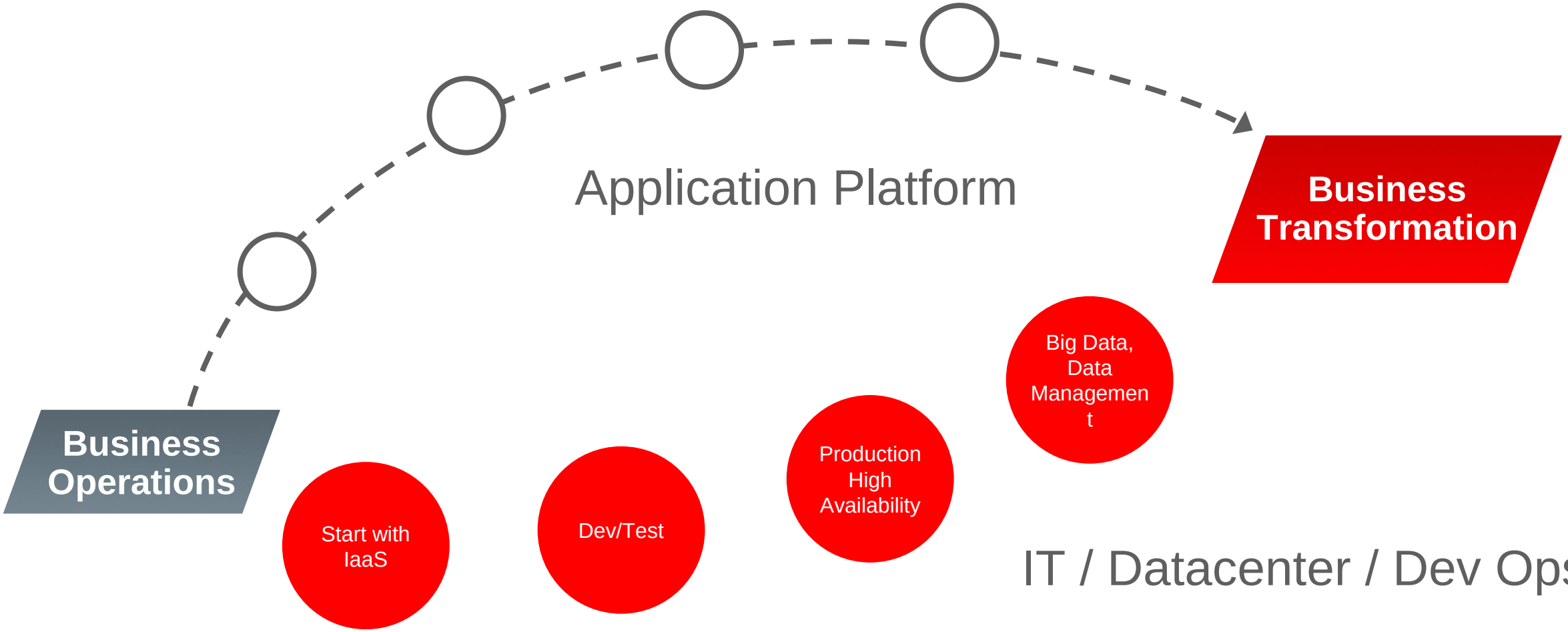
1. **Backup and Archive of Business Critical Data**
   - Save money by archiving business critical file and DBMS Data durably and securely at the lowest cost
2. **Global Content Infrastructure**
   - Store and distribute content globally by offloading storage infrastructure
   - Globally Replicate Files including multimedia files, voice, mobile, and video close to branch offices
3. **Global Disaster Recovery Infrastructure**
   - Backup Database and File Systems and instantiate DR using automatic cross-region replication
   - Avoid investment in expensive redundant Data Centers & Infrastructure
4. **Persistent Store for Analytic Processing "Big Data Lakes"**
   - Store Large Volumes of Analytic Data Cheap and stream into Elastically Scaled Clusters which can be spun up and shut down for analytic processing
5. **High Performance Storage for Cloud-native Applications**
   - Store and Backup Data for cloud Native Applications on Oracle Compute or PaaS

ERP Systems on Oracle Cloud

Points of View from Business Perspective/IT Perspective

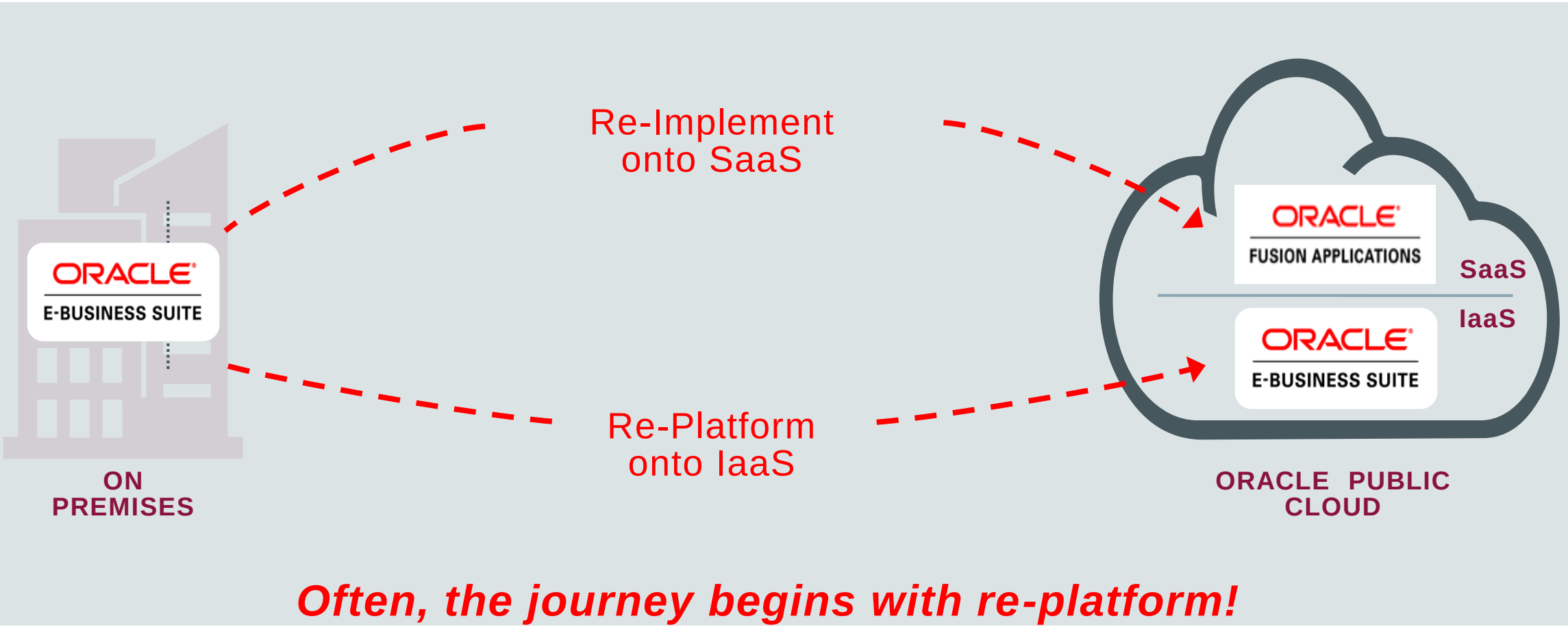


Points of View from Business Perspective/IT Perspective



Deployment Options

Re-Platform and / or Re-Implement on the Cloud



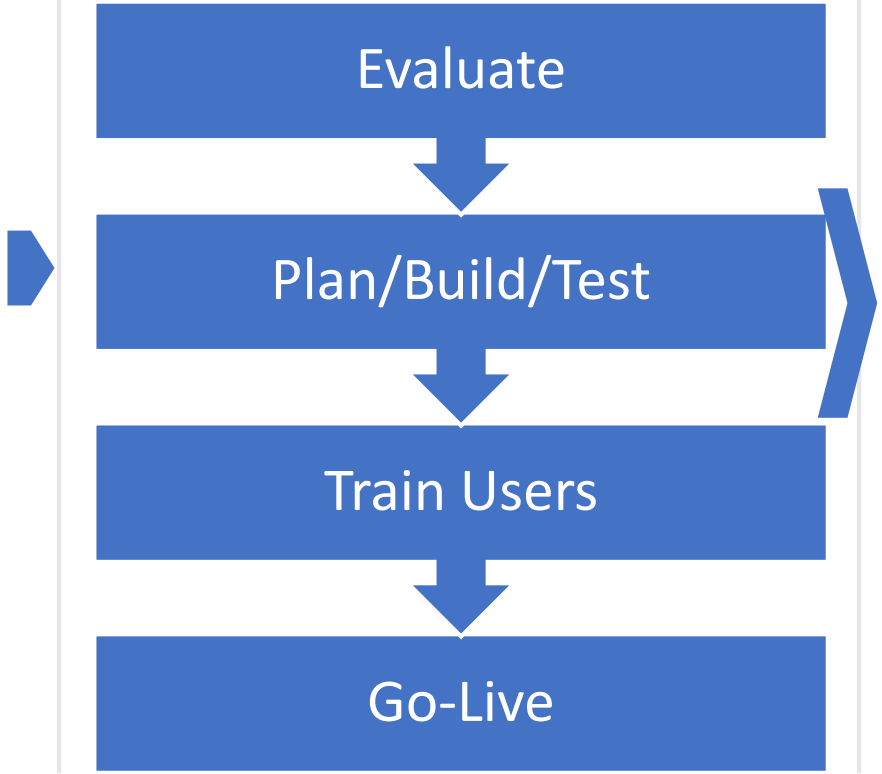
Often, the journey begins with re-platform!

Typical ERP Projects Require Additional Infrastructure

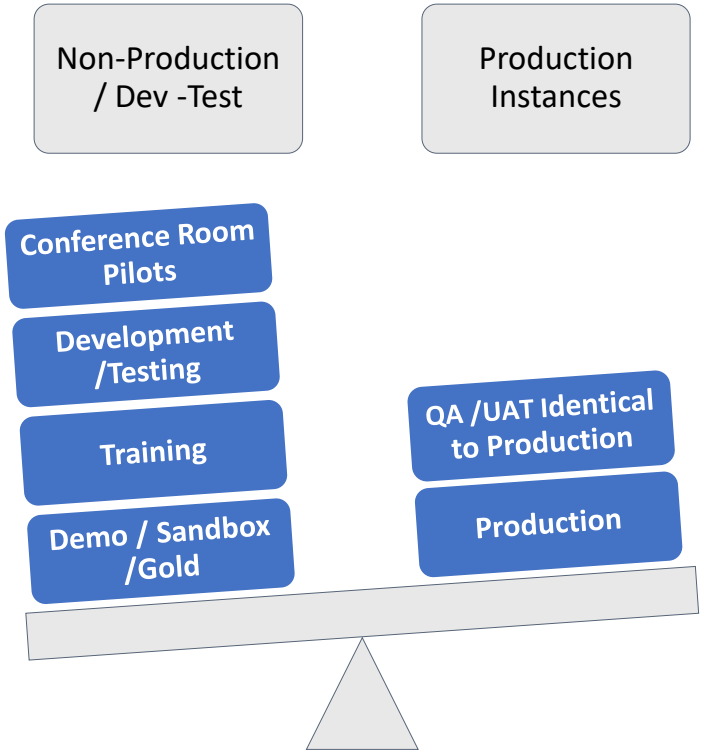
Use Cases

- New Implementations
- Global Rollouts
- Upgrades
- Evaluating EBS
- Business/Process Changes
- Routine Maintenance

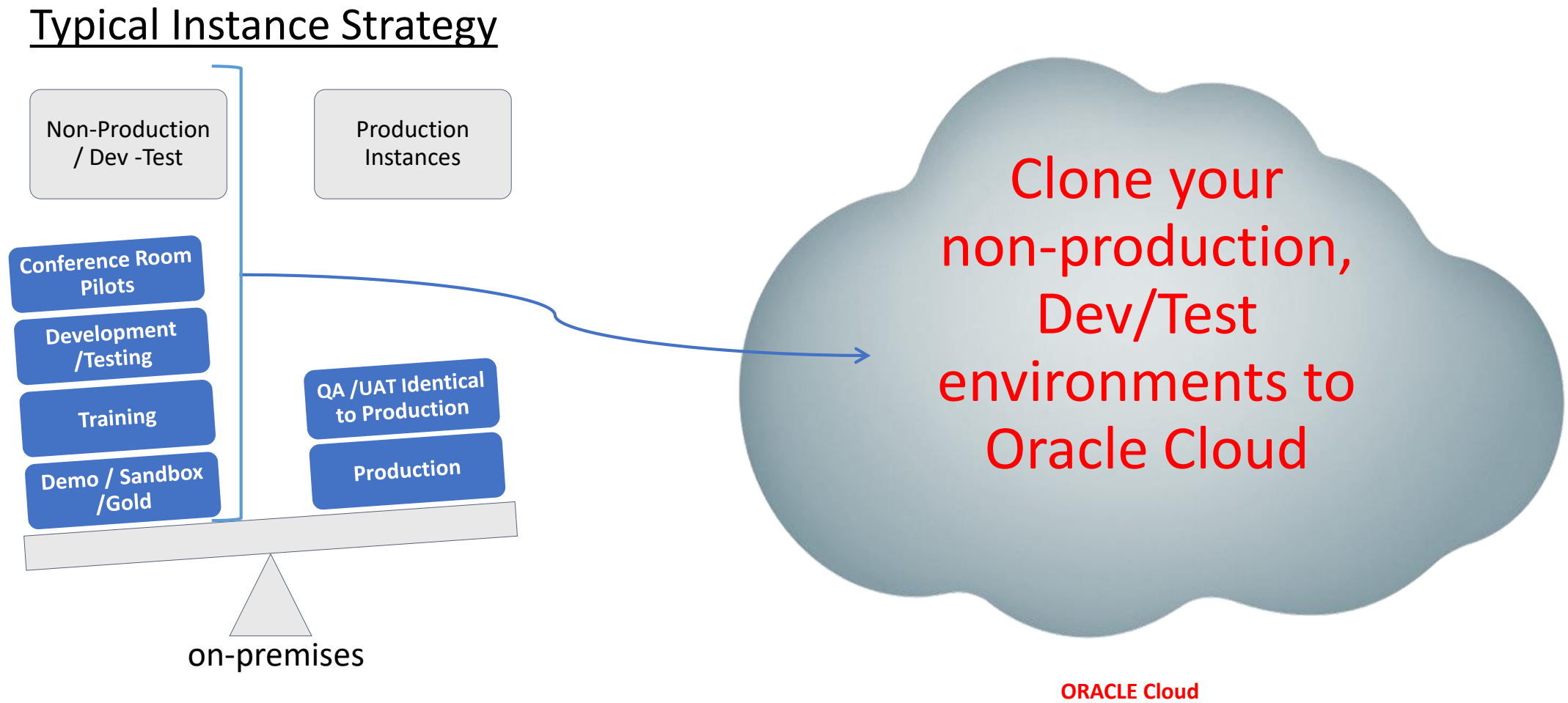
Typical Methodology



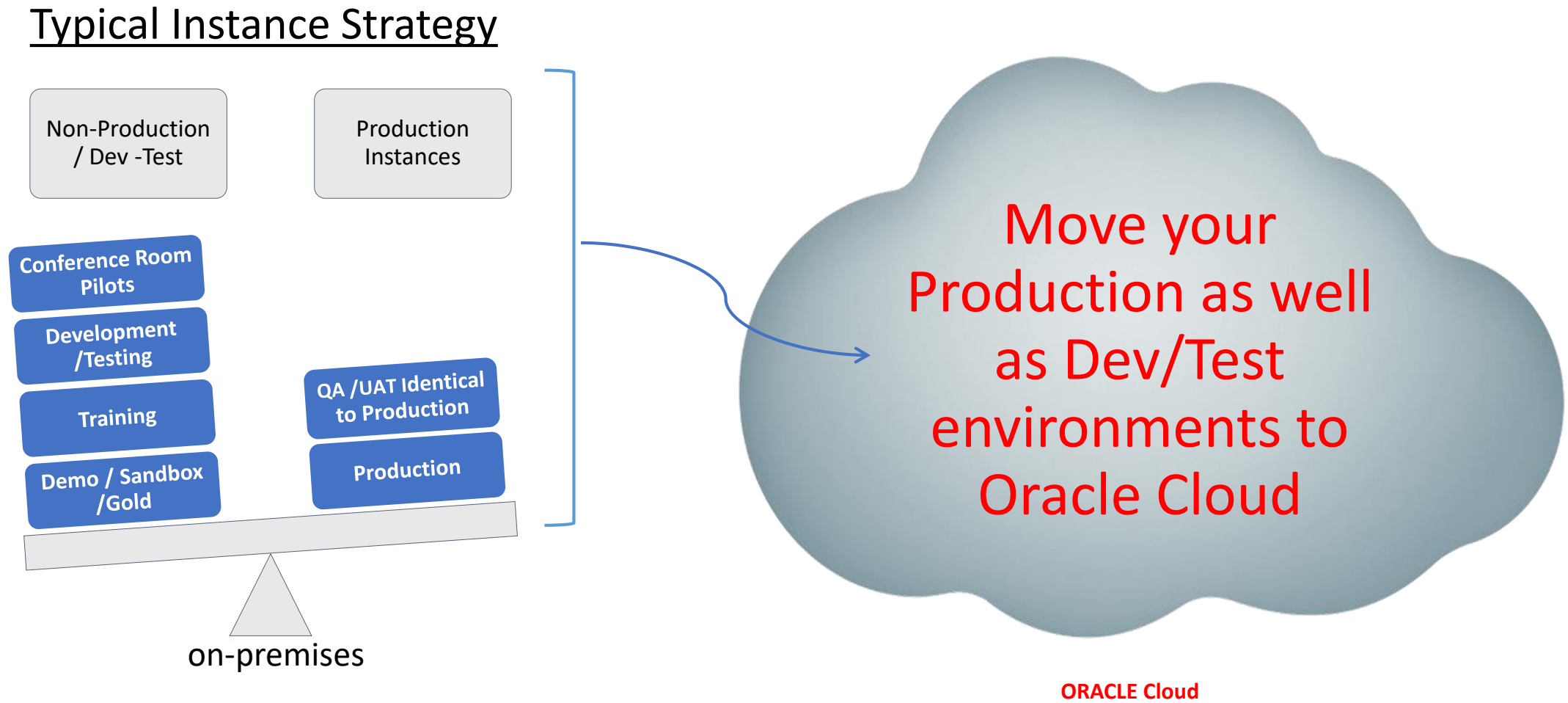
Typical EBS Instance Strategy



Start with your "Dev/Test" env to Oracle Cloud



When Ready, Move your "Production" env to Oracle Cloud



Hybrid Cloud for your ERP Systems

On Premises

- ASCP / Demantra
- E-Business Suite (OM, INV, PO, FIN, MFG, HR)
- SOA
- BI / DW
- Virtualization and OS
- Storage
- Servers
- Backup / DR
- Network

"Lift & Shift" to Oracle Cloud IaaS/PaaS

- SaaS: HCM
- ASCP / Demantra
- E-Business Suite (OM, INV, PO, FIN, MFG, HR)
- PaaS: SOA CS, BI CS
- IaaS: Virtualization and OS, Storage, Servers, Backup / DR, Network

Incremental Migration to SaaS

- SaaS: FIN, HCM
- ASCP / Demantra
- E-Business Suite (OM, INV, PO, FIN, MFG)
- *Enable New Capabilities for extending Oracle SaaS Apps*
- PaaS: BPM CS, Java CS, Developer CS, SOA CS, BI CS
- IaaS: Virtualization and OS, Servers, Storage, Backup / DR, Network

Incremental Migration to SaaS

- SaaS: ERP, SCP, FIN, HCM
- PaaS: BPM CS, Java CS, Developer CS, SOA CS, BI CS
- IaaS: Virtualization and OS, Servers, Storage, Backup / DR, Network

ROLTA | ADVIZEX

We develop comprehensive on-premise and/or cloud infrastructure strategies that specifically work for you.

ADVIZEX HYBRID CLOUD

Financial Options

BUY, CONSUMPTION BASED, LEASE, PAY PER USE

Location Flexibility

ON PREMISE, CO-LOCATION, PUBLIC CLOUD

Global Talent

TECHNOLOGISTS LOCATED IN NORTH AMERICA, EUROPE, AND INDIA

Cloud Managed Services

INFRASTRUCTURE, APPLICATION AND DATA

Consulting Services

PLANNING, IMPLEMENTATION, AND MIGRATION

Top Partnerships

ORACLE, HPE, DELL/EMC, MICROSOFT, PALO ALTO

Industry Experience

DEEP EXPOSURE TO REAL WORLD PROBLEMS

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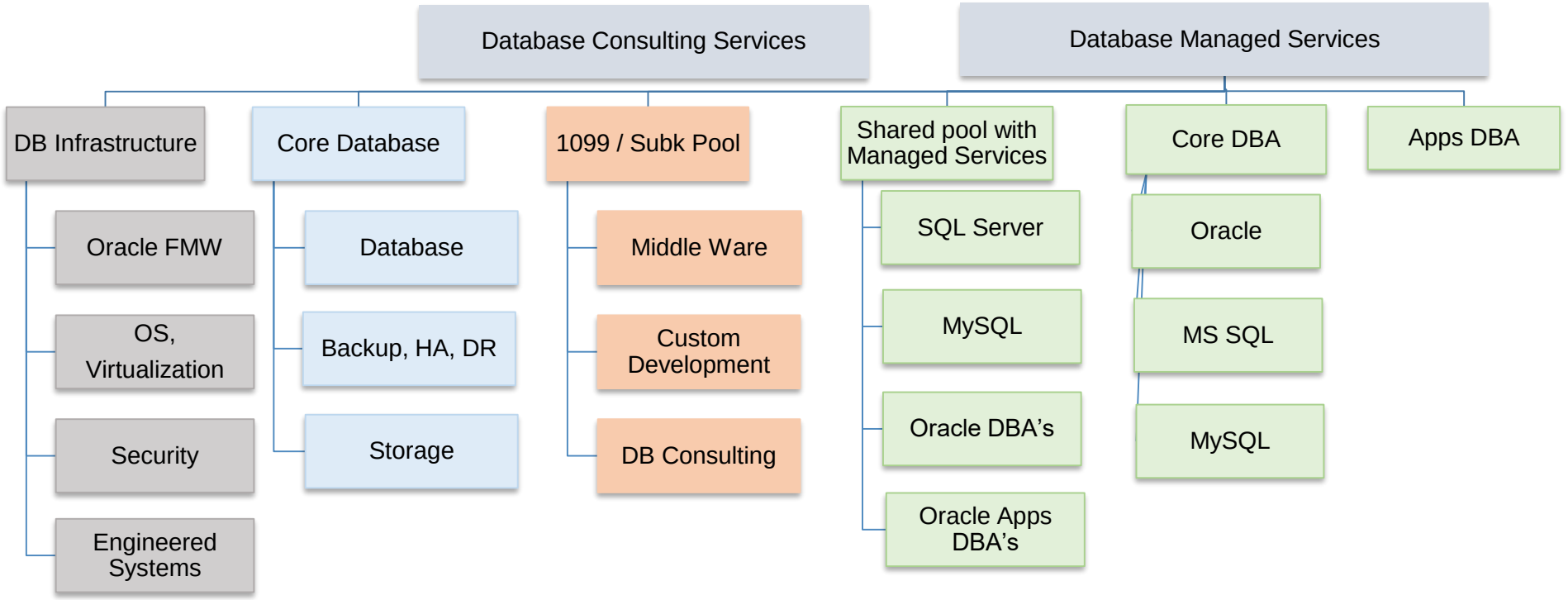
Database Practice – Organization Structure



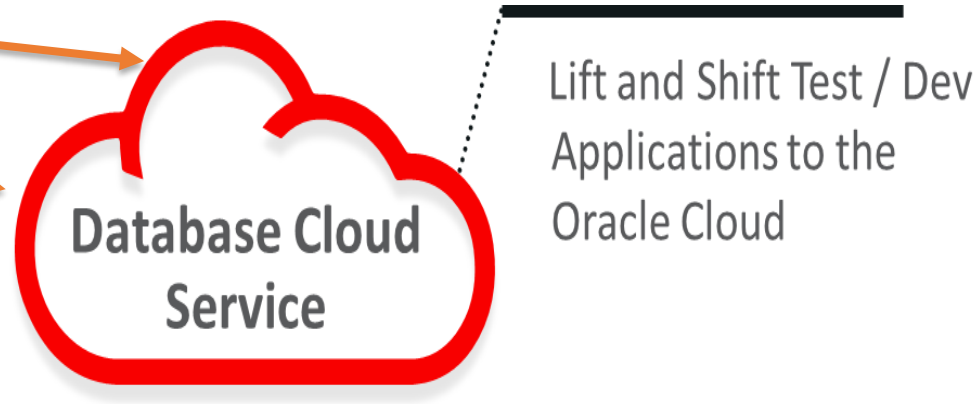
Next Generation – Oracle Cloud Offerings

Consulting Services

- Cloud migration Assessments using both IAAS and PAAS
- Data Management - Backup to the Cloud - PAAS
- Data Management – Disaster Recovery to the Cloud - PAAS
- DBaaS - Migrate to Cloud | Sandbox Oracle Database 12c - PAAS
- DBaaS - Migrate to Cloud | Production Oracle Database 12c - PAAS
- Exadata / ODA as a Service – Hybrid Cloud @Customer – On Premise IAAS

Managed Services

- Cloud Managed Support for:
  - Database on Cloud
  - Exadata Cloud Service
  - Database Backup Cloud Service
  - Storage Cloud Service
  - Elastic Compute Cloud Service



DATABASE SYSTEMS

ADVISORY

- Data Advizer
- Strategic Roadmap Services
- Technology Evaluations and Recommendations
- Architectural Design and Planning
- Backup and DR Planning
- Proof of Concepts (POCs) and Pilots
- Health Checks and Performance Reviews
- Best Practices
- Security Assessments

CONSULTING

- Installation and Configuration
- High Availability and Clustering
- Integration
- Backup and Replication Configuration
- DR
- Migrations
- Upgrades and Patching
- Performance Tuning and Optimization
- Security Implementations

MANAGED SERVICES

- Oracle
- Microsoft
- MySQL
- SAP HANA

DATA MANAGEMENT

ADVISORY

- Information Advizer
- Technology Evaluations and Roadmaps
- Data Use Cases
- Data Ownership assessment
- Proof of Concepts (POCs) and Pilots
- Business Process Analysis and Engineering
- Architectural Designs
- Health Checks
- Scalability Assessments
- Performance Benchmarking
- Financial Analysis
- Knowledge Transfer

CONSULTING

- Installation and Configuration
- Migrations
- Performance Tuning and Optimization
- Match Merge, De-duplication, Address Cleansing
- Process Optimization and Automation

MANAGED SERVICES

- ETL Operations
- Tuning and Optimization

WAREHOUSE AND MODELING

ADVISORY

- Data Advizer
- Data Strategy Roadmap
- Business Data Requirements Assessment
- Data Use Cases
- Data Model Requirements Assessment
- Data Mode Design
- Data Modeling Best Practices Review
- Connectivity and Security Assessments
- Knowledge Transfer

CONSULTING

- Platform Installation and Configuration
- Data Extraction and Insertion Automation
- Data Reconciliation Process and Automation
- Eliminating Performance Bottlenecks
- Optimizing Warehouse Operations
- Analyze Statistical Data
- Design End User Experience
- Design Schema Objects (Tables, Indexes, and Views)
- Configure Management Platforms

MANAGED SERVICES

- Job and Process Monitoring
- Monitor the Data and Activities Inside the Data Warehouse
- Administer the Data Warehousing Platform
- Oracle Engineered Systems

NEXT STEPS

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