Oracle Reference Architecture and Oracle Cloud

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Program Agenda

- IT Strategies from Oracle (ITSO) and Oracle Reference Architecture
- ORA Cloud Reference Architecture
- Case Study: Oracle Cloud Architecture
- Hybrid Cloud Use Cases
- Summary
IT Strategies from Oracle (ITSO) and Oracle Reference Architecture
Oracle Reference Architecture (ORA)

- Single, unified reference architecture across the (Oracle) technology space
- Supports architecture entry point
- Built on sound architecture principles
- Product agnostic, yet complementary to Oracle
- Modular & extensible
  - Content builds out over multiple iterations
  - New technologies and strategies incorporated over time, extending the core material
  - Accommodates future strategies

Oracle Reference Architecture

- Interaction
- Business Processes
- Business Services
- Application Infrastructure
- Information Assets
- Information Management
- Shared Infrastructure

- Enterprise Development
- Enterprise Security

- Architecture Concepts
- Principles & Guidelines
- Architecture Views
- Component Drilldowns
- Product Mappings
Enterprise Technology Strategy (ETS)
ORA - Cloud Reference Architecture
Cloud Architecture - Logical View

Access

Services

Management

Resources
# Cloud Architecture - Logical View

## Access
- Interfaces: Native Protocols, Portals, Custom UIs, Self-Service APIs
- Network: Proxy, Perimeter Security, Naming, Balancing

## Services
- **SaaS**:
  - Business Process
  - Business Service
  - Application
- **PaaS**:
  - Container
  - Queue
  - Data
- **IaaS**:
  - Server
  - Network
  - Storage

## Deployable Entities

## Resources
- **Logical Pools**:
  - Compute
  - Networks
  - Storage
  - Other
- **Physical Pools**:
  - Servers
  - Disks
  - Engineered
  - Other
- **Facilities**:
  - Real Estate
  - Cooling
  - Utilities
  - Other

## Cloud Management
- **Business Mgmt**:
  - Customer, Contracts, Revenue Mgmt
- **Operations**:
  - Service, Lifecycle, Configuration, Performance, Monitoring
- **Orchestration**:
  - Orchestration, Mediation
- **Design-time**:
  - Model Mgmt, Tools

## External
- Clouds
- Legacy
- Partners
Cloud Management Capabilities Overview

Cloud Business Management

**Customer Management**
- Opportunity Management
- Account Management
- Customer Provisioning
- Relationship Management

**Contracts Management**
- Definition
- Discovery
- Pricing
- SLA
- Metrics
- Discounts

**Revenue Management**
- Rating
- Billing
- Payment
- Reporting
- Chargeback
- Collection

**Cloud Operations**

**Service Management**
- Service Definition
- Service Discovery
- Forecasting
- Metering
- SL Authoring

**Lifecycle Management**
- Provision Management
- Capacity Management
- Abstraction
- Patch Mgmt
- Resource Mgmt

**Performance Management**
- SL Management
- User Experience
- Biz Transaction
- Diagnostics
- Biz Service
- Problem/Incident

**Configuration Management**
- Asset Discovery
- Asset Mgmt
- Knowledge Mgmt
- Release Mgmt
- Compliance
- Change Control

User Interaction
- Customer Mgmt Portal
- Contracts Portal
- IVR Interface
- B2B Interface

Repositories
- Customer DB
- Contracts Repository
- Finance DB
- Security Store
- Policy Store
- Management Repository

Security & Policy Management

**Security Management**
- Identity
- Entitlements
- Risk Analysis
- Certificates
- Delegated Admin

**Security Services**
- Authentication
- Auditing
- Federation
- Authorization
- Role Mapping
- Encryption
- Federation
- Role Mapping
- Encryption

**Policy Management**
- Attachment
- Assessment
- Enforcement
- Authoring
- Deployment
- Compliance

Orchestration
- Workflow
- Mediation
- Event Processing

Design-time
- Model Management
- Introspection
- Model Design
- Validation
- Federation
- Package
- Deploy

Cloud Management
Product Mapping to Logical View

**Interfaces**
- Oracle Web Center Suite, Enterprise Manager Cloud Control

**Network**
- Oracle HTTP Server, Oracle Directory Services Plus

**SaaS**
- Oracle Cloud: CRM, HCM/Talent, OSN, RightNow, Taleo
- Oracle Applications

**PaaS**
- Oracle Cloud: Java, Database
- Fusion Middleware, Oracle Database, Exadata, Exalogic

**IaaS**
- SuperCluster, Sun Servers, ZFS Storage, Sun Blade Ethernet
- Oracle Solaris, Oracle Linux

**Business Management**
- Oracle Billing and Revenue Management, Enterprise Manager Cloud Control, Enterprise Repository

**Operations**
- Oracle Enterprise Manager Cloud Control, Oracle VM

**Security and Policy Management**
- Oracle Identity and Access Management

**Orchestration**
- Oracle Service Bus, Oracle BPEL Process Manager, Enterprise Manager Cloud Control

**Design-time**
- Oracle Virtual Assembly Builder, Enterprise Manager Cloud Control

**Resources**
- Exalogic, Exadata, Super Cluster
- Sun Servers, ZFS Storage, Sun Blade Ethernet

**Pool Management**
- Oracle VM
- Oracle Virtual Assembly Builder
Engineered Systems Deployment
Oracle Cloud: Mission

Bring Oracle’s leading Enterprise Technology and Business Applications Software to any customer or partner, anywhere in the world, through the Internet
Oracle Cloud

Platform Services
Application Services
Social Services
Common Infrastructure Services
Platform Services
Complete, Standards-Based, Enterprise-Grade

Common Infrastructure Services
Application Services
Complete Suite, Best-of-Breed, Enterprise Grade

- Human Capital Management
- Talent Management
- Sales & Marketing
- Customer Service and Support
- Financial Management
- Procurement, Sourcing, Inventory
- Project Management
- Governance, Risk, Compliance

Common Infrastructure Services
Social Relationship Management
Complete, Integrated, Enterprise Grade

Social Data and Insight
Social Monitoring and Engagement
Social Network
Social Sites
Social Marketing

Common Infrastructure Services
Common Infrastructure Services

- Storage
  - Object Storage

- Compute
  - Elastic Compute

- Secure Identity
  - Identity Administration

- Cache
  - In-Memory Cache

- Queues
  - Lightweight Queues

- Messaging
  - Mail, Push
Oracle Cloud: **Logical Architecture**

Designed like Enterprise Private Clouds

- Self-service Sign Up
- Lifecycle Management

**Oracle Cloud Application, Platform and Social Services**

- **Application Services**
  - Fusion CRM, HCM

- **Platform Services**
  - Database, Java

- **Social Network**

**Shared Infrastructure Services**

- **Virtual Service Assemblies**
- **Provisioning**
- **Tenant Management**
- **Integration**
- **Security & Identity**

**Shared Systems Infrastructure**

- **Oracle Exadata**
- **Oracle ExaLogic**

Key Features:

- Self-service Lifecycle Management
- Standardization
- Integration
- Automation
- Consolidation
- Performance

cloud.oracle.com
Hybrid Cloud Use Cases
Integrating with Oracle Cloud
A Public Cloud Service and a Cloud Architecture

- A Public Cloud you may choose to use

- A model for building your own Private Cloud

- A part of your future Hybrid Cloud
  - Consider building a similar architecture to the same standards
Different Types of Hybrid Clouds

Alternative architectures for integrating public and private clouds

- **Functional Distribution**
  - Different components in separate clouds (e.g., CRM, HR)
  - Leverage best of breed services with private cloud needs

- **Lifecycle Distribution**
  - Separate development and test
  - Perhaps the easiest

- **Workload Distribution**
  - “Cloudbursting”
  - More challenging for complex enterprise transactions
Functional Distribution

Hybrid Interoperability of Business Processes

- Business process coordinated through multiple applications distributed across multiple clouds.
- Standards are essential

Standards
SOA, BPM, JMS
Functional Distribution
Products for Business Processes Integration

• Business process coordinated through multiple applications distributed across multiple clouds.
• Standards are essential
Functional Distribution Hybrid (Design)

Hybrid Interoperability of Business Processes

Key Strategy: **Standardization**

- Business process coordinated through multiple applications distributed across multiple clouds.
- Standards are essential
- **Mechanisms include:**
  - Open Standards,
  - Common Repositories

*Open Standards*
*Common Repositories*
Lifecycle Distribution

Hybrid Interoperability of Application Lifecycle

- Stages of SDLC are distributed across runtime environments
- Requires Packaging

Portability
Templates, Assemblies, OER
Lifecycle Distribution

Hybrid Interoperability of Application Lifecycle

• Stages of SDLC are distributed across runtime environments
• Requires Packaging

Oracle Enterprise Manager
- Oracle Virtual Assemblies
- Oracle VM Templates
- Oracle Fusion Middleware
- Oracle Enterprise Repository

Dev | Test | Management
Access
Resources

Production
Management
Access
Resources
Lifecycle Distribution Hybrid (Developer)

Hybrid Interoperability of Application Lifecycle

Key Strategy: Portability

- Stages of SDLC are distributed across runtime environments
- Requires Packaging
- Mechanisms include: Workflow, Deployable entities
Workload Distribution

Hybrid Interoperability of Replicated Workloads

- Identical processing spread over multiple clouds. More difficult for complex enterprise apps
- Relies on data consistency

Consistency
Replication, Messaging
Workload Distribution

Hybrid Interoperability of Replicated Workloads

- Identical processing spread over multiple clouds. More difficult for complex enterprise apps.
- Relies on data consistency.

Oracle Database
- Oracle Dataguard

Oracle Fusion Middleware
- Oracle Data Integration
- Oracle Golden Gate
- Oracle Coherence
Workload Distribution Hybrid (Operations)
Hybrid Interoperability of Replicated Workloads

Key Strategy: **Consistency & Synchronization**

- Identical processing spread over multiple clouds. More difficult for complex enterprise apps
- Relies on data consistency
- **Mechanisms include:**
  - for Stateless: Caching
  - for Stateful: Synchronization, Recovery
Summary
Summary

- IT Strategies from Oracle (ITSO) and Oracle Reference Architecture (ORA) provide guidance for your Cloud implementation

- Oracle Cloud – Business applications and platform Cloud services built on engineered systems

- Hybrid Cloud –
  - Understand what hybrid use case you want
  - Build to standards
  - Standardize deployment and management