Integration in the Cloud:

Leveraging the Power of Platform as a Service

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Platform as a Service: (PaaS) a category of cloud computing services that provides a platform allowing customers to develop, run, and manage applications without the complexity of building and maintaining the infrastructure typically associated with developing and launching an app.
PaaS: categories and services

DATA MANAGEMENT
- Database
- NoSQL Database
- Big Data
- Big Data SQL
- Database Backup
- Oracle Database Exadata

APPLICATION DEVELOPMENT
- Java
- Application Container
- Mobile
- Application Builder
- Developer

MANAGEMENT
- IT Analytics
- Log Analytics
- Application Performance Monitoring

ENTERPRISE INTEGRATION
- Integration
- SOA
- Managed File Transfer
- Internet of Things
- Process
- API Platform

SECURITY
- Identity

DATA INTEGRATION
- GoldenGate
- Big Data Preparation

CONTENT
- Documents
- Social
- Sites

BUSINESS ANALYTICS
- Data Visualization
- Business Intelligence
- Big Data Discovery
Enterprise Integration in the Cloud: Challenges

- Integrating application silos
- Integrating ‘smart’ devices

Support app

Sales app
Service Integration Landscape

SaaS applications are available for the enterprise today. 23 on average for each enterprise.

Number of connected digital endpoints including MOBILE is estimated in 2020.

90% of the world’s data has been created in the last two years. Having the right data at the right time is more crucial.

Source: Constellation Research: “Businesses Must Answer the Call for Cloud Based Integration”
Example Integration Scenario: Case to Incident

Business Case:

- Case to Incident integration across two cloud applications
- SaaS to SaaS integration with Oracle ICS
- All cases created in Salesforce are being Synchronized with ServiceNow as incidents

Solution:

- Automate real-time integration
- Streamline Business process by integrating across multiple business systems

Benefits:

- Rapid delivery of Integration
- Increased visibility to field and real-time updates
- Eliminate manual re-entry & duplication
Example Integration Scenario: Opportunity to Order

Business Case:
- **Opportunity-to-Order** system distributed across E-Business Suite and Salesforce.com
- Used Hybrid Integration leveraging ICS and SOA Suite on-premises
- Update of opportunities in Salesforce propagated to on-premise Order Management

Solution:
- Automate real-time integration
- Streamline Business process by integrating across multiple business systems

Benefits:
- Increased visibility to field and real time updates
- Eliminate manual re-entry & duplication
Integration Cloud Service

Integrate Cloud & On-Premises Applications

Visual orchestration design in minutes

Marketplace of pre-built integrations
- 50+ adapters for Oracle & 3rd party applications (Oracle Sales Cloud, NetSuite, Salesforce.com, Ariba, Concur, SAP… etc.)

Self Service Recipe style Integration
- Business user self service
Oracle Integration Cloud Service

• What it does:
  – Designed for SaaS
  – Integrates applications across clouds and on-premises

• Key Features
  – Easy to use for LOB/Apps IT & IT developed integration
  – Prebuilt integrations for common scenarios
  – Recommendations to guide mapping
  – Automated provisioning, back-up, patch updates, and upgrades
  – Rich Library of adapters/APIs for Oracle and 3rd party applications
  – Secure On-premise integration using lightweight Agent

• Benefits
  – Faster integration of applications
  – Increased business agility
  – Lower cost of ownership
When Cloud-based Integration?

Best When

- Most integrations are between cloud-based applications
- Low to no need for integration to on-premises, or between on-premises applications
- Integrations are less complex (ICS)
- In-house integration skills are limited
- Focus is on rapid integration
When On-premises Based Integration?

Best When

- Most applications, business processes and data are on-premises
- Low to no requirements for integration to cloud services and APIs
- Privacy/security needs prevent move to cloud deployments
- Strict quality of service/SLA requirements require close control
- Complexity of on-premises IT requires a full-featured, flexible integration platform on the ground
When Hybrid Integration?

**Best When**

- **Need a strategic and comprehensive platform**
- Want to balance quick delivery projects with a systematic approach to integration
- Need to handle combinations of:
  - Cloud to cloud to on-premises
  - On-premises to on-premises
  - Mobile, IoT, B2B, API Management
- Want to extend an established on-premises integration platform
  - Quickly attach to existing on-premises integration flows whilst leveraging the ease of use of the Cloud
  - Want to move existing integration flows to the public cloud (e.g. Mobile, B2B)
Cloud Adapters
Comprehensive Connectivity

- Simplified Integration with Applications
- Rich and Intuitive Designer Wizard
- Business-centric view of the API Interface
- Bidirectional Integration
- Automatic Discovery of Application Assets
- Business Objects, Services, Events
- Support for Standard and Custom Objects
- Plug and Play
  - Runs on-premise and in the Cloud
  - Point and click to start using new adapters
- Build your own or Buy at the Marketplace
  - Easily Rollout Adapters on your own using a simple SDK
  - Buy and sell adapters at the Cloud Marketplace
Faster Time to Integrate

- **Oracle Recommends** – Guidance on recommended integrations between applications
- **No Installation, No Configuration** – Leave the installation, configuration and patch-set updates to Oracle
- **Robust Error Management** – Detect errors early and follow with intuitive corrective action
Simplify Integration to Oracle SaaS

- **Auto-Associate** – Pre-loaded with your existing Oracle SaaS subscriptions.
- **Version Aware** – No need to continually update for new versions of Oracle applications.
- **Built-in Security** – Leverage existing built-in Oracle security.
- **Monitor Dashboards** – Intuitive visibility into your business out-of-the-box.
Oracle Integration Platform Cloud Service: **Summary**

- Oracle Integration Platform Cloud Service offers
  - Depth and Breadth of functionality for APIs, Data, Services and Events integration
  - Designed for SaaS, IT & Data
  - Purpose built for Hybrid Integration

- A solution for all enterprise personas and requirements
  - For Developers
  - For Departmental Users

- A flexible deployment option for on-premise deployments
  - Similar operational experience as the Public Cloud
Internet of Things in Action

50 Billion Devices by 2020

8 Zeta bytes of data Today
IoT is enabling new business models..
IoT Deployment Phases

Connected Assets

Phase 1
- Remote Monitoring
- Asset Tracking

Phase 2
- Proactive Decisions
- Predictive Algorithms
- Improved Products

Phase 3
- Business Transformations
- IoT Blended Into Enterprise Applications

Predictive Analytics

Service Excellence

Apps
- ERP
- SCM
- MES

Customer Support
- CRM
- HCM

Custom Enterprise Applications

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Customers need domain specific solutions

 IoT Applications

 IoT Platform

 Devices / Sensors

Break / Fix or Scheduled

 Maintenance

 Predictive Prescriptive

 Business Analytics

 Static Analytics

 Real-Time Big-Data Analytics

 Consumption Model

 As a Service

 Ownership

 Service

 Central Service

 Self-Serve / Self-Guided Service

 This is what customers are asking for.

 Lots of activity and time spent here.

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Announcing: Oracle IoT Applications

- Break / Fix or Scheduled
- Predictive Prescriptive
- Ownership
- As a Service
- Static Analytics
- Real-Time Big-Data Analytics
- Service
- Central Service
- Self-Serve / Self-Guided
- Asset Monitoring
- Production Monitoring
- Fleet Management
- Connected Worker
New Oracle IoT Applications

Asset Monitoring

For monitoring assets, their utilization, availability, and data from connected sensors

Production Monitoring

Manufacturing factory floor equipment monitoring and prognostics

Fleet Management

For medium sized business who have fleets of vehicles (trucks, buses, maintenance vehicles,)

Connected Worker

For tracking employees in Mining industry, Engineering and Construction industry
IoT App – Asset Monitoring
For monitoring assets, their utilization, availability, and data from connected sensors

Location Tracking
Asset Health
Asset Performance
Utilization
IoT App – Asset Monitoring

For monitoring assets, their utilization, availability, and data from connected sensors

- **Location Tracking**
  - Tracking of indoor and outdoor location using BLE beacons, RFID readers
  - Where is the nearest available asset?

- **Asset Health**
  - Are my assets working?
  - Are any alerts and incidents open against my assets?

- **Asset Performance**
  - Are my assets connected and online?
  - Geo-fence based business rules
  - Are my assets being misused?

- **Utilization**
  - Are my assets available?
  - Are my assets utilized?

95% Asset Availability
1 Open Incidents
Leverage Storage Cloud as the Data Lake for IoT

- IoT Data becomes “just another data source” for existing Big Data Services
  - Oracle Big Data Services are designed to pull data from Storage Cloud
  - Storage Cloud is an object store and provides a natural home for IoT time-series data in an unstructured format
  - Unstructured, IoT data sources are not bound to a schema and may evolve over time
Connectivity: Oracle IoT Cloud Service

- Devices → Gateway → Directly Connected Devices
  - Various protocols
  - Secure-MQTT

- Devices → Gateway → MQTT bridge → IoT Cloud Service
  - Various protocols
  - Secure-MQTT
  - HTTPs

- Directly Connected Devices → MQTT bridge → IoT Cloud Service
  - HTTPs

- Directly Connected Devices
  - HTTPs
Accelerate IoT Deployments with Smart IoT Applications

Building an IoT Solution with platform components requires...

- Devices & Gateways
- Connectivity & Device Virtualization
- User Interfaces, Mobile Apps
- Application Data Model
- Application Business Logic
- Development of Predictive Algorithms
- Domain Specific Dashboards
- Integration With Enterprise Apps

Have to manage, optimize, scale, upgrade multiple components used in the solution

Packaged IoT Apps leveraging Oracle’s domain expertise

- LOB Focused User Interfaces
- Business Logic & Predictive Metrics
- Certified Devices & Gateways

Managed Applications

Accelerate IoT Deployments

- Faster Time-to-Value
- Lower Ongoing Maintenance Cost
- Shorter Implementation Time

Faster Time-to-Value
Lower Ongoing Maintenance Cost
Shorter Implementation Time
Oracle IoT – A Complete Solution

Oracle IoT SaaS Applications

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<th>Voice of Factory</th>
<th>Reliability Centered Maintenance</th>
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IoT Cloud Service

Engage
- Dashboards, Business Insights
- Configuration, Customizations

Execute
- Business Rules
- Core Data Model, Business Analytics

Extend
- Integration with Apps
- Business Events

IoT Apps

Connect
- Device Virtualization, Security
- Reliable, Bi-Directional Communication

Analyze
- Stream Processing, Business Intelligence
- Analytics on IOT + Contextual Data

Integrate
- Zero-Effort Integrations
- With Integration Cloud Service
- REST APIs

Business Applications

- Manufacturing, Supply Chain, Asset Mgmt
- Customer Relationship Mgmt, Sales, Service
- Vertical Apps – Utilities, Healthcare, Retail

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Cloud Integration: 2017 and Beyond

• Expanded rollouts of Software-as-a-Service via:
  – New cloud deployments
  – “lift-and-shift” of existing onprem solutions

• Will generate increased need for SaaS integration
  – Cloud <-> Cloud
  – Hybrid: Cloud <-> OnPrem

• Exponential growth of IoT capable devices
  – Requires intelligent data collection and analysis

• Integration!!!
Broad, Deep, Integrated PaaS

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