



# Oracle IoT Cloud Service

## 16.3.3 Release Overview

August 23<sup>rd</sup>, 2016

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# Speakers



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## Safe Harbor Statement

The preceding is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, and timing of any features or functionality described for Oracle's products remains at the sole discretion of Oracle.



# Agenda

- 1 IoT Cloud Service 16.3.3 Highlights (10 mins)
- 2 Asset Monitoring Mini Application Demo (20 mins)
- 3 IoT Cloud Service 16.3.3. Platform Features (20 mins)

# IoT Deployments

## Manufacturing

Shop floor equipment monitoring

Predictive Analytics for machine failures

Integration with MES and ERP

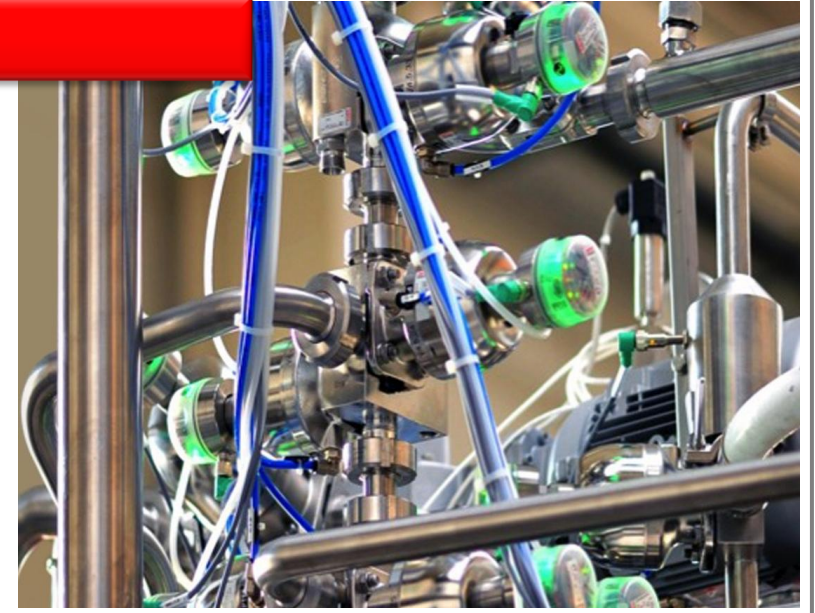


## Manufacturing

Real-time filtering and processing of Valve events

Proactive parts replacement

Integration with CRM and Service Ticketing system



## Asset Tracking

Tracking of assets in conference center and warehouses

Track utilization, dispatch/returns

Integration with EBS for orders & invoicing



## Inventory Monitoring

Monitoring humidity, temperature of smart Freezers

Monitoring load for inventory levels

Integration with Mobile App, Inventory systems

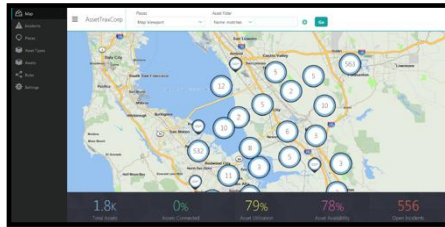




# Oracle Internet of Things Cloud Service

## 16.3.3 Release Highlights

### IoT Cloud Service Applications ("Mini-Apps")



#### **Asset Monitoring**

Ready-to-use and customizable IoT Application for  
Asset Tracking and Monitoring

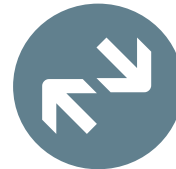
### New IoT CS platform features



MQTT  
bridge

#### **MQTT Support**

Support new protocol through MQTT  
bridge and updated Client Software



#### **Richer Stream Explorer functionality**

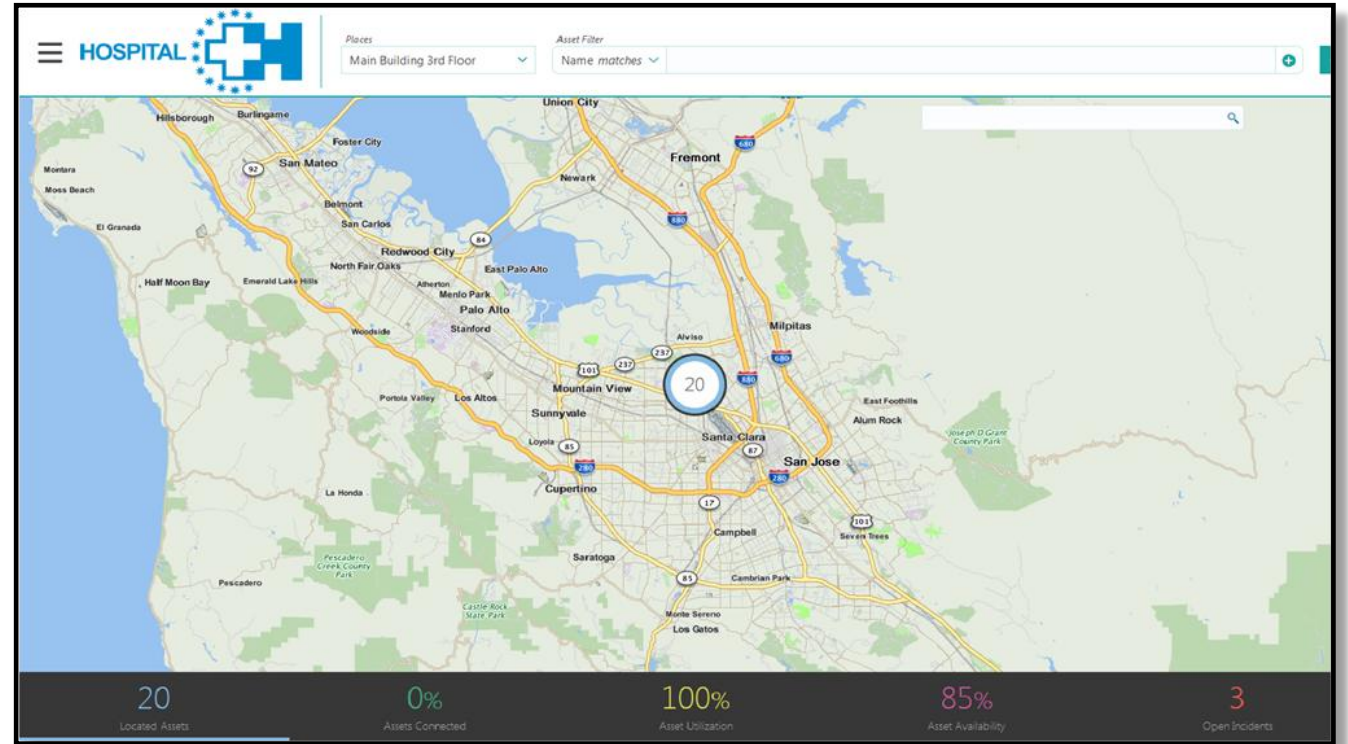
New real-time analytics options for a  
wider range of IoT Use Cases



#### **Storage Cloud Service Integration**

Out-of-Box Integration with Storage  
Cloud Service, facilitating consumption  
of IoT information by Big Data

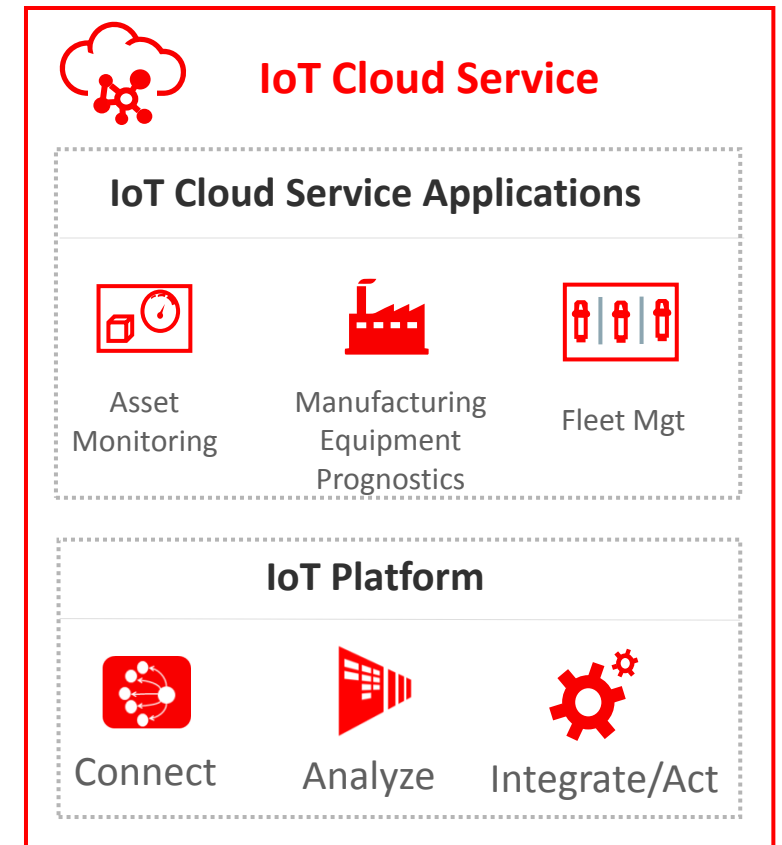
# Asset Monitoring Application



# IoT Cloud Service Applications (“Mini-Apps”)

Simplifying the addition of real-time IoT information into business processes

- SaaS-style apps usable by end customers
  - Enable critical tasks for a given application domain (eg Asset Monitoring, Equipment Prognostics)
  - For end-users seeking ease of implementation and rapid results
- Self contained and ready to run
  - Deployable within an IoT Cloud Service instance
  - Readily customizable with the specifics of your operation
  - Can be integrated with Oracle or 3<sup>rd</sup>-party SaaS/on-prem apps
- Asset Monitoring is the 1<sup>st</sup> IoT Cloud Service Application
  - Free as part of IoT Cloud Service, version 16.3.3





# IoT Cloud Service - Asset Monitoring Application

## Oracle's first "Mini-App"

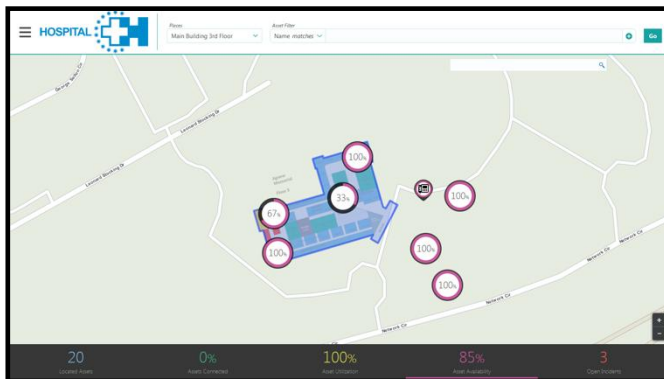
- Offer Real-time view of **asset location, condition, and utilization**
- Drive proactive maintenance through monitoring of **Real-time asset KPIs**
- Integrates IoT data into asset management applications workflows

## OT staff can generate rapid results from Asset Monitoring use cases

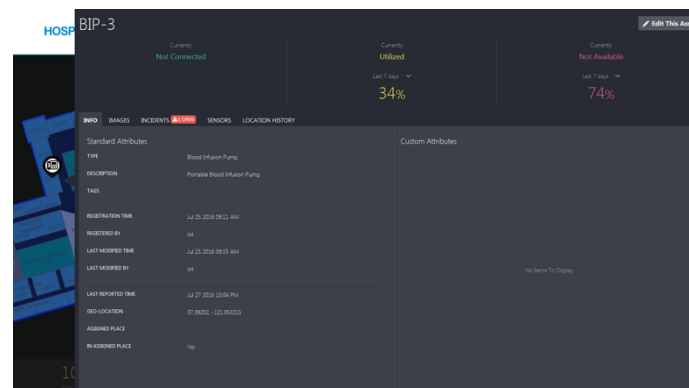
- **Rapid Deployment** of Applications
  - Configuration does not require IT expertise
- **Wide range of customers & use cases**
  - Hospitals tracking high-value equipment assets
  - Heavy equipment rental companies
  - Large conference center movable asset tracking

# Asset Monitoring Application – Key Features

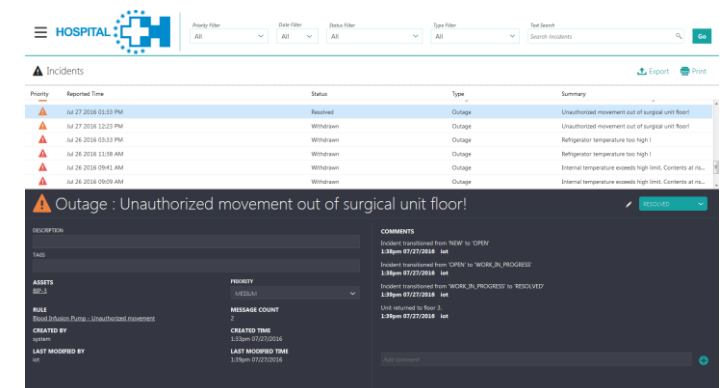
- **Personalized Dashboard View of Asset Location**
  - Filtered view of fixed and movable assets
  - Dynamic visualizations of asset information
  - KPI metrics adjust based on selected map viewport



- **Asset performance metrics**
  - Instantaneous & historical utilization and availability
  - Telemetry views for IoT devices associated w/ asset
  - Asset workplace/storage areas

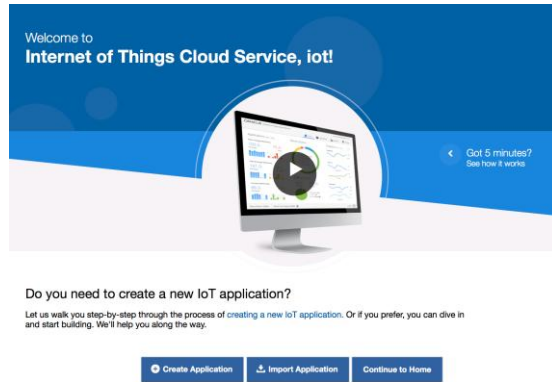


- **Asset Monitoring and Management**
  - Routine, Maintenance or Outage incidents tracking
  - Real-time utilization monitoring
    - Asset entry & exit to/from indoor/outdoor geo-boundaries
  - Configurable incident generation



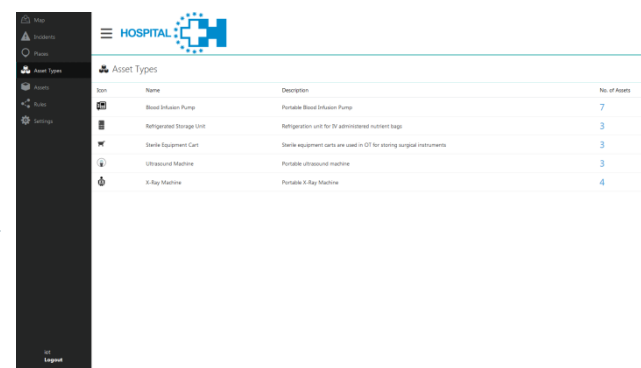
# Getting Started with Asset Monitoring

1



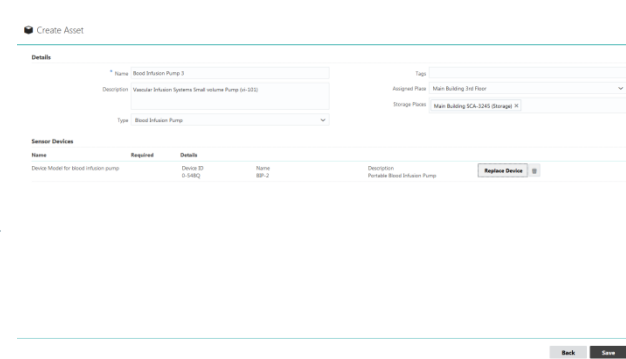
Create and launch an Asset Monitoring Application from the IoT CS Main Console

2



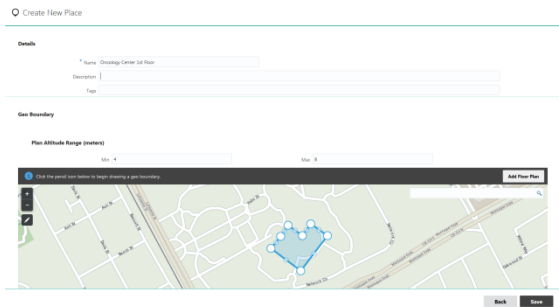
Configure your specific asset types

3



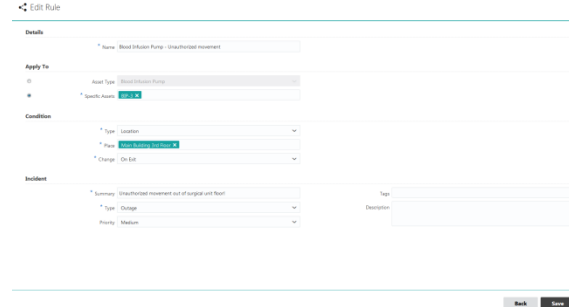
Create and associate assets with the IoT devices that monitor them

4



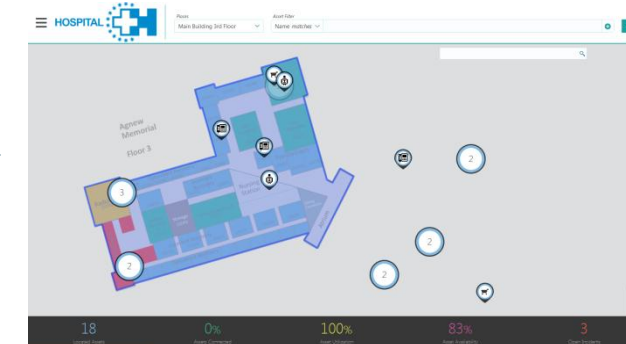
Define Storage and Assigned Places for your assets

5



Define geo-location and/or meter threshold Incident generation rules

6

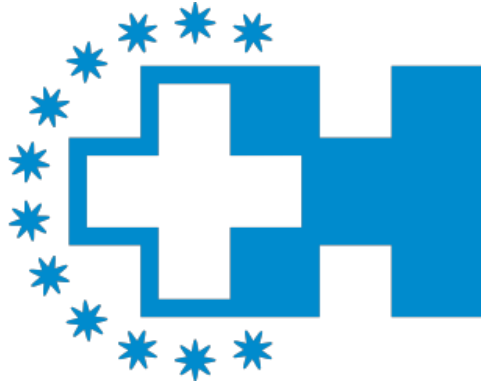


Track your assets, monitor operational performance and incident reports using the Asset Monitoring main dashboard



# Asset Monitoring Demo

# HOSPITAL



## Locate equipment

How do I reduce recovery room setup and patient throughput?

## Reduce maintenance cost

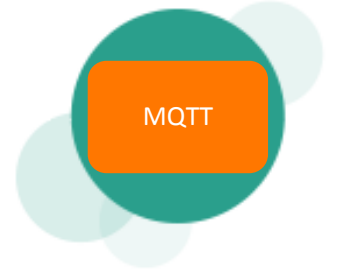
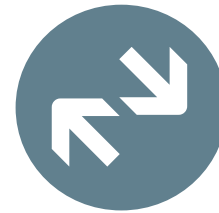
How do I get automated, immediate alarm notification of abnormal equipment condition

## Shrinkage Prevention

How do I enforce geo-fencing to prevent illegal asset movements?

# New IoT Cloud Service Platform Features

Release 16.3.3



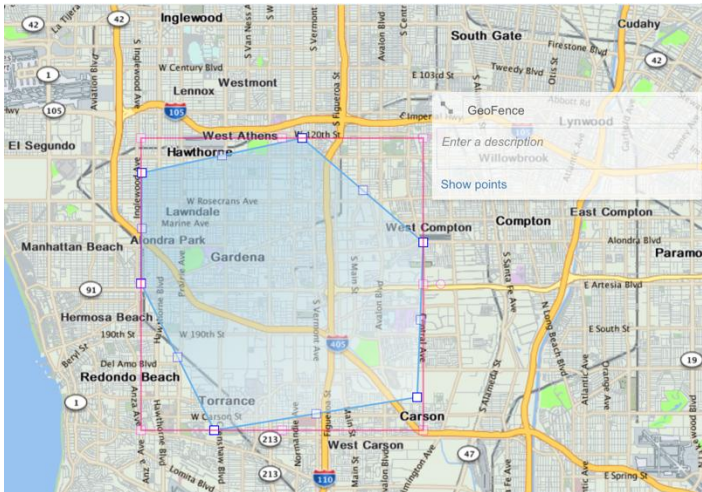




# Stream Explorer : Spatial, Maps, New Patterns

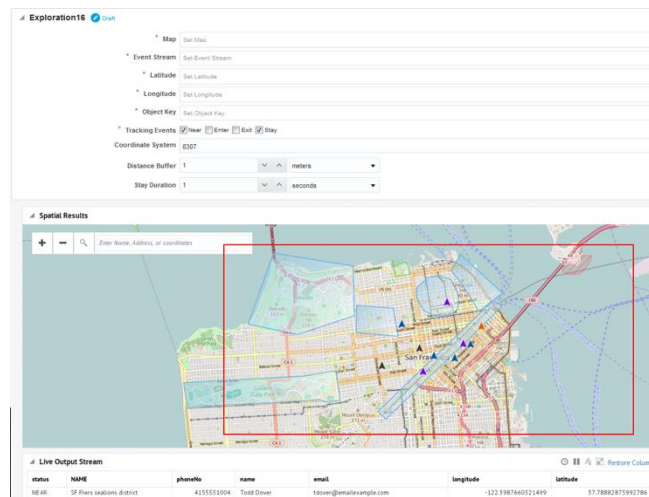
- **Maps and GeoFence**

- Maps define virtual fencing over a geographical area
- Maps will be used to define whenever a device enters or exits the boundaries



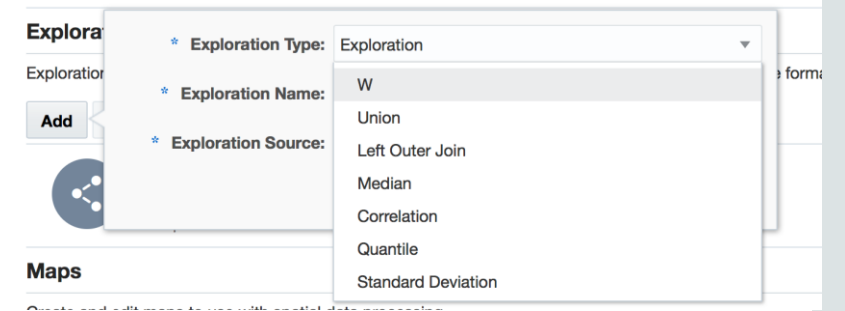
- **Spatial Analytics**

- Analyze streams containing geo-location data and determine how events relate to pre-defined geo-fences in your maps



- **New Patterns**

- New Exploration patterns
- Including : Change Detector, Anomaly Detection, 'A' followed/not followed by 'B', Missing Heartbeat, Union, Quantile, Standard Deviation...





# Stream Explorer : Business Rules, Expression, Topology

- **Business Rules**

- Business rules build conditional logic into the explorations
  - If (Boolean Condition) Then Set (Value)

**Business Rules** Rulio ×

**IF**

msg\_sender equals Oracle

**THEN**

SET msg\_priority TO 1

+ Add Action

- **Expressions**

- Pre-defined functions and operators available in the exploration

× ✓ Σ Enter an expression or a string. Expressions must begin with "="

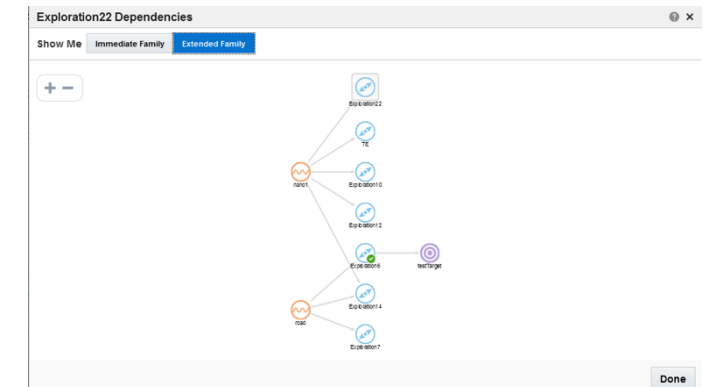
**Functions**

- Conversion >
- Date >
- Math >
- Null related >
- String >
- all >

msg\_sender msg\_destination msg\_pr

- **Topology Viewer**

- Graphical representation of dependencies between entities (streams and explorations)





# Zero-Effort Integration with Storage Cloud Service

Storage Cloud Service is available as a pre-defined integration option

Please choose



## Enterprise Application

Any system capable of receiving HTTP connections or making HTTP requests.



## Business Intelligence Cloud Service

Integration with an existing Oracle Business Intelligence Cloud Service instance. Oracle IoT data will be sent to this instance for further analysis.



## Mobile Cloud Service

Integration with an existing Oracle Mobile Cloud Service instance.



## JD Edwards IoT Orchestrator

Send data to an on-premise JD Edwards IoT Orchestrator for further analysis and automated creation of workflows



## Storage Cloud Service

Integration with an existing Oracle Storage Cloud Service instance. Oracle IoT data will be sent to this instance for further analysis.

Create Integration

## Storage Cloud Service

\* Name SCS for Big Data Discovery Use

Description SCS Instance for BDD to import

\* URL http://storage.us2.oraclecloud.com/v1/Storage-gboracleuk12312

\* Identity Domain gboracleuk12312

\* Username: sample.user@oracle.com

\* Password .....

\* Container Name SCSforBigDataDiscoveryUseContainer

Data Format CSV  
CSV  
JSON

Create

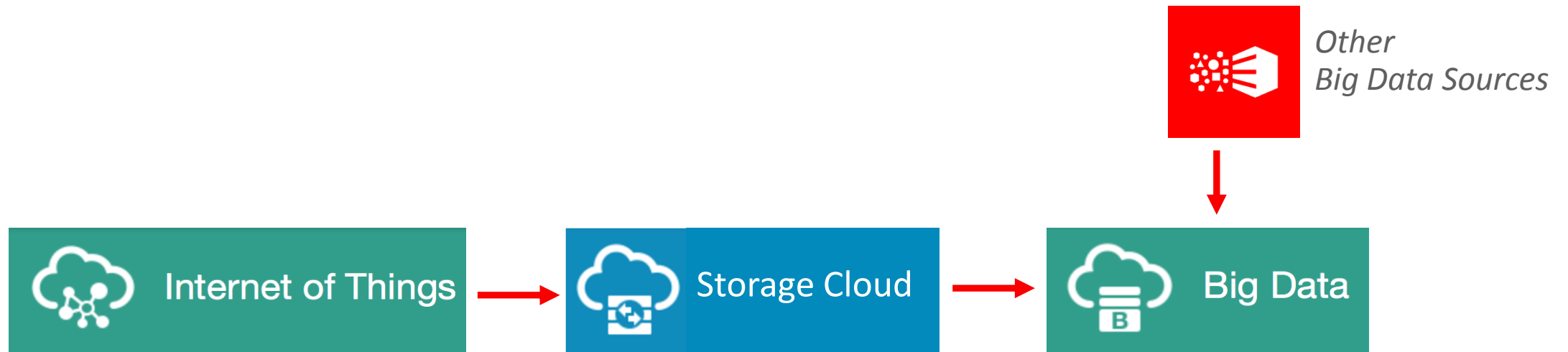
Create Integration





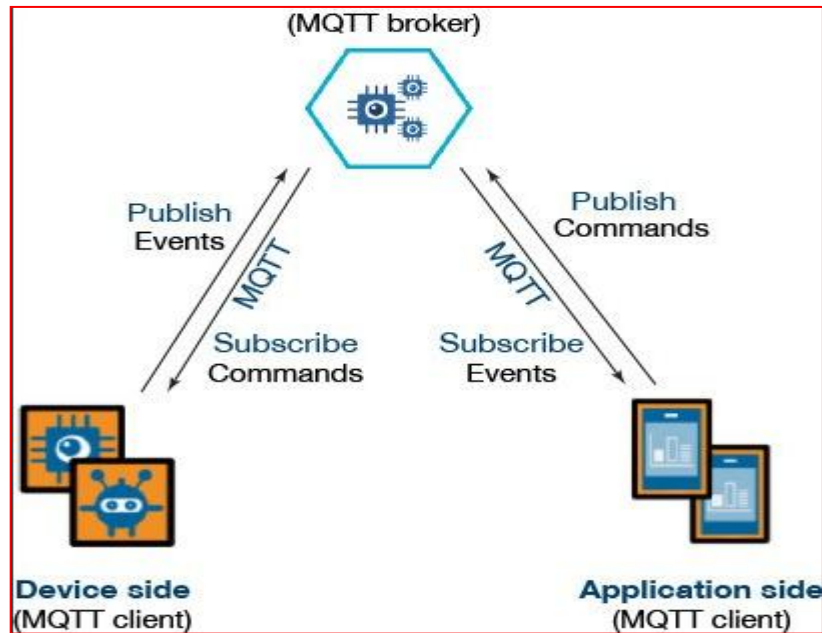
# Leverage Storage Cloud as the Data Lake for IoT

- 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



# What is MQTT?

Publish/Subscribe messaging protocol designed for limited bandwidth networks and resource constrained devices



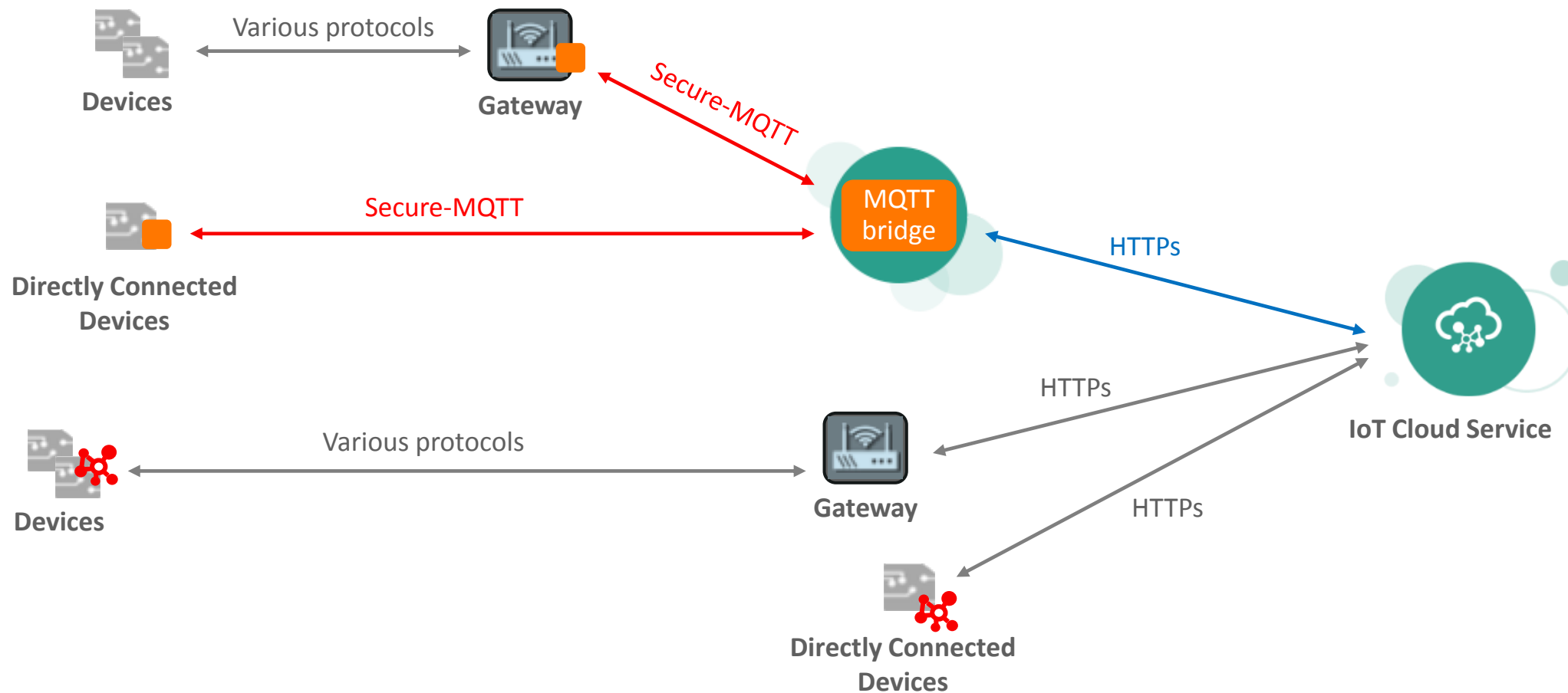
Typical MQTT Architecture

- Open – OASIS standard as of 2014
- Lightweight – Optimized bandwidth requirements (small headers)
- Reliable – Three QoS and patterns to avoid packet loss on client disconnection
- Simple
  - TCP based
  - Asynchronous
  - Publish/subscribe (topics)
  - Few verbs
  - Payload agnostic
- Flexible: built-in distribution mechanism (many-to-one)
- Secure – can be combined with SSL/TLS, OAuth for authentication, payload can be encrypted...

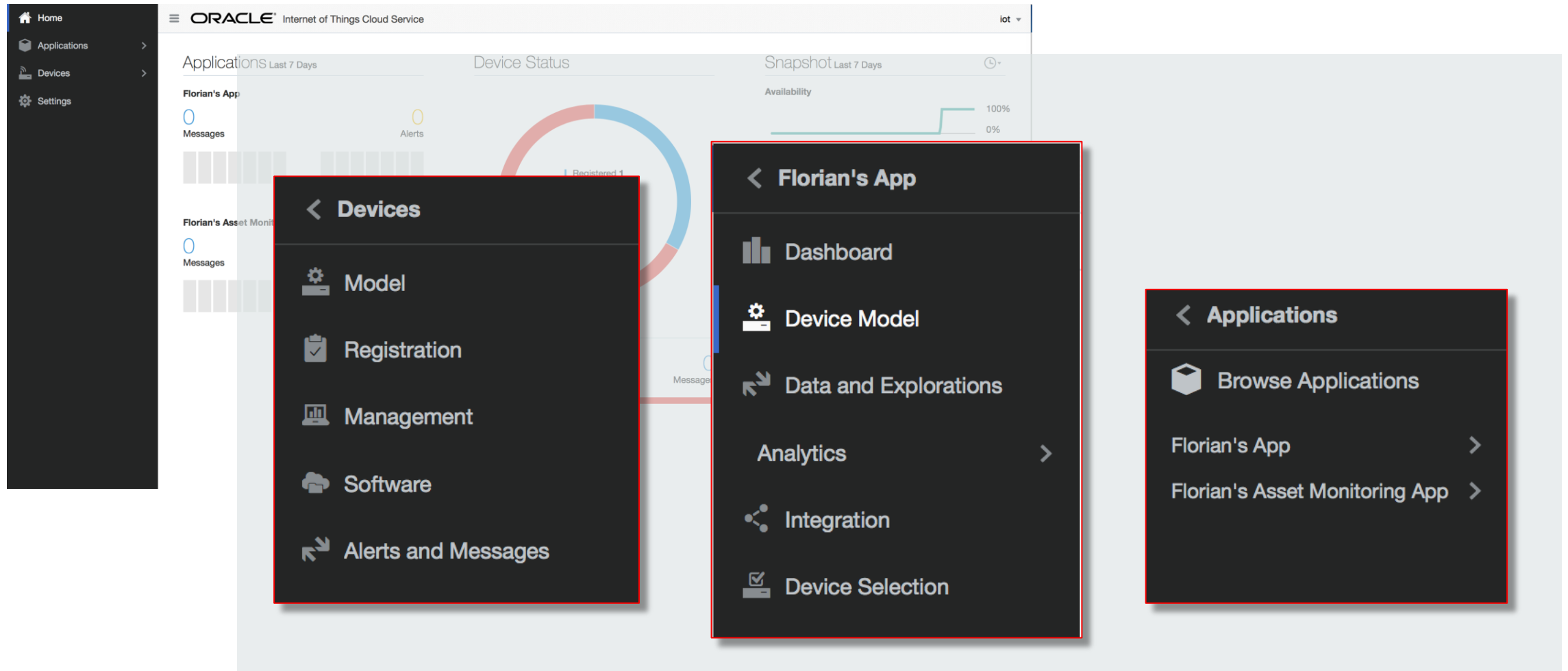
# MQTT Support in Oracle IoT Cloud Service

- Implementation based on MQTT v3.1.1
  - Uses an MQTT bridge (broker) to connect to IoT CS
- MQTT is used as transport protocol
  - Bi-directional messaging from devices to MQTT bridge
  - MQTT bridge uses HTTPs to connect to IoT CS (polling model)
  - IoT CS Enterprise Libraries always use HTTPs for bi-directional messaging
- Supported features
  - Asynchronous (real push notifications),
  - Guaranteed delivery (QoS 1: sends messages at least once)
  - Keep alive (MQTT bridge can detect client disconnection)
  - No optimized payload (no topic support)

# MQTT with Oracle IoT Cloud Service



# And finally :Redesigned UI





# Availability

- Oracle IoT Cloud Service 16.3.3 live on Oracle Public Cloud
- Client Software downloads  
<http://www.oracle.com/technetwork/topics/cloud/downloads/iot-client-software-2702454.html>
- Early Access program
  - Self-paced training materials available soon to partners and customers

# IoT @ OpenWorld 2016

- 20+ sessions & hands-on labs
- 5+ demos: Asset management, Predictive maintenance, Digital field service & Equipment monitoring
- Customer Advisory Board on 9/18 (invitation event)
- Opportunity to meet development and product management executives
- List of IoT Sessions:  
<http://tinyurl.com/iotoow2016>
- Book your CVC meetings:  
<https://oracle.jifflenow.com/oowcvc2016/>



The banner features a red square logo with the text "ORACLE OPEN WORLD" in white. To the right of the logo, the event details "Sept. 18-22, 2016" and "San Francisco" are displayed in white text. Below this, the hashtag "#oow16" is shown. A red button with the text "Register Now" and a white right-pointing arrow is positioned to the right of the hashtag. The background of the banner is a photograph of the San Francisco skyline, including the Golden Gate Bridge and the city's skyscrapers, with the Oracle logo in the bottom right corner.

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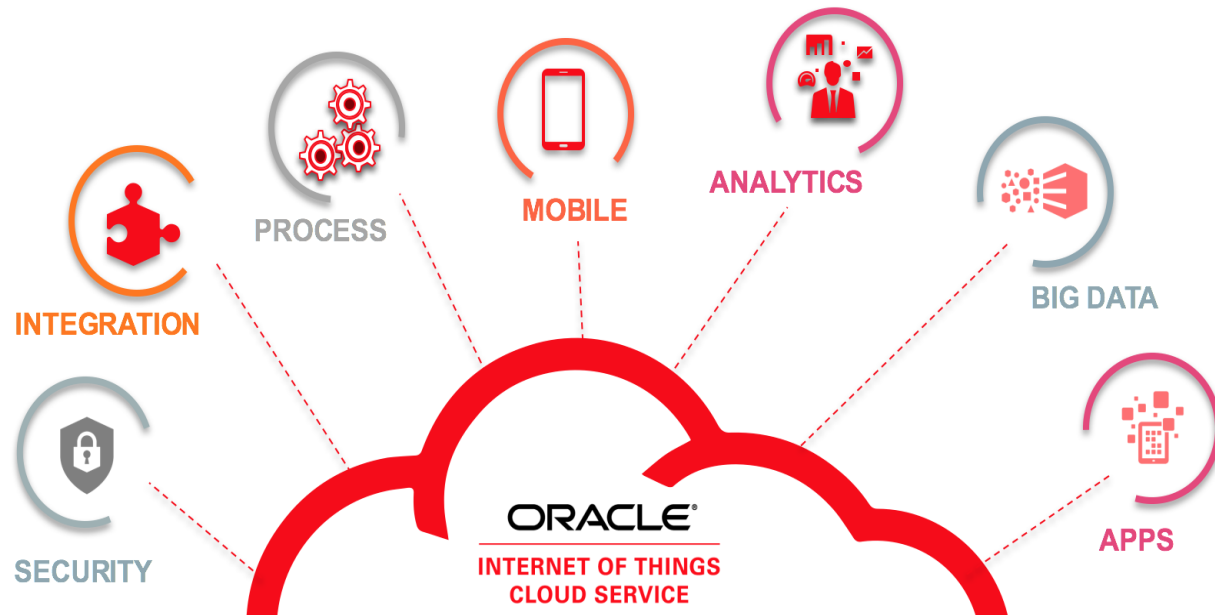
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# OpenWorld 2016

## Partners Dedicated Sessions

**OPN CENTRAL  
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September 18–22, 2016  
San Francisco

- **OPN Central General Session**  
Moscone West—3008  
Sun 1:00 p.m.–2:30 p.m.
- **OPN Lounge**
- **OPN Central Regional Breakout Sessions**
- **OPN In Focus Sessions**
- **OPN Test Fest**
- **Oracle PartnerNetwork AfterDark Reception**
- **Oracle Appreciation Event**
- **OPN Specialist Reception**  
Mon 5:30-7:30 PM



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Digital Transformation  
in the Cloud

# OPN Test Fest – Courtyard San Francisco Downtown, SOMA 3 Room

- Partners can take the latest OPN certification exams for FREE during Oracle OpenWorld
- More than 70 exams available to choose from, across all pillars with a focus on Cloud Solutions!
- Ten testing session available
- Seats are limited, encourage partners to register now!

## Test Fest Schedule

Day 1 - Monday, 19 <sup>th</sup> September	Day 3 - Wednesday, 21 <sup>st</sup> September
Session 1: 10:30 - 12:30	Session 6: 10:30 - 12:30
Session 2: 13:00 - 15:00	Session 7: 13:00 - 15:00
Session 3: 15:30 - 18:00	Session 8: 15:30 - 17:30
Day 2 - Tuesday, 20 <sup>th</sup> September	Day 4 - Thursday, 22 <sup>nd</sup> September
Session 4: 10:30 – 13:00	Session 9: 10:30 - 13:00
Session 5: 15:45 - 17:45	Session 10: 13:30 - 15:30



# SOA & Internet of Things Partner Community including free IoT trial service! register [www.oracle.com/goto/emea/soa](http://www.oracle.com/goto/emea/soa)



## Community

Focused & regular  
communication &  
networking



## Marketing

Campaign Kits  
and marketing  
service



## Sales

Sales kits and  
sales alignment &  
OMM



## Pre-Sales

Demo Service  
and workshop kits



## Enablement & Specialization

Trainings and  
Certification

# Questions



# Integrated Cloud

## Applications & Platform Services

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