

# Mobile Application Development

Using Oracle Mobile Cloud Service

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# Safe Harbor Statement

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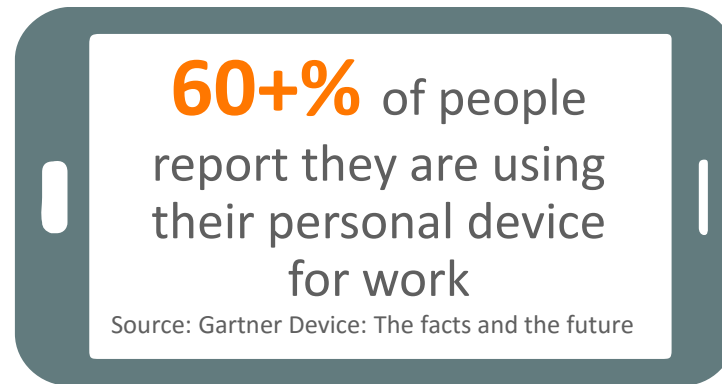
# A Changing World



# Growth Of Mobile In The Enterprise

**30–35%** of large enterprises will leverage mobile application development platforms to develop and deploy mobile apps across their organizations in 2016.

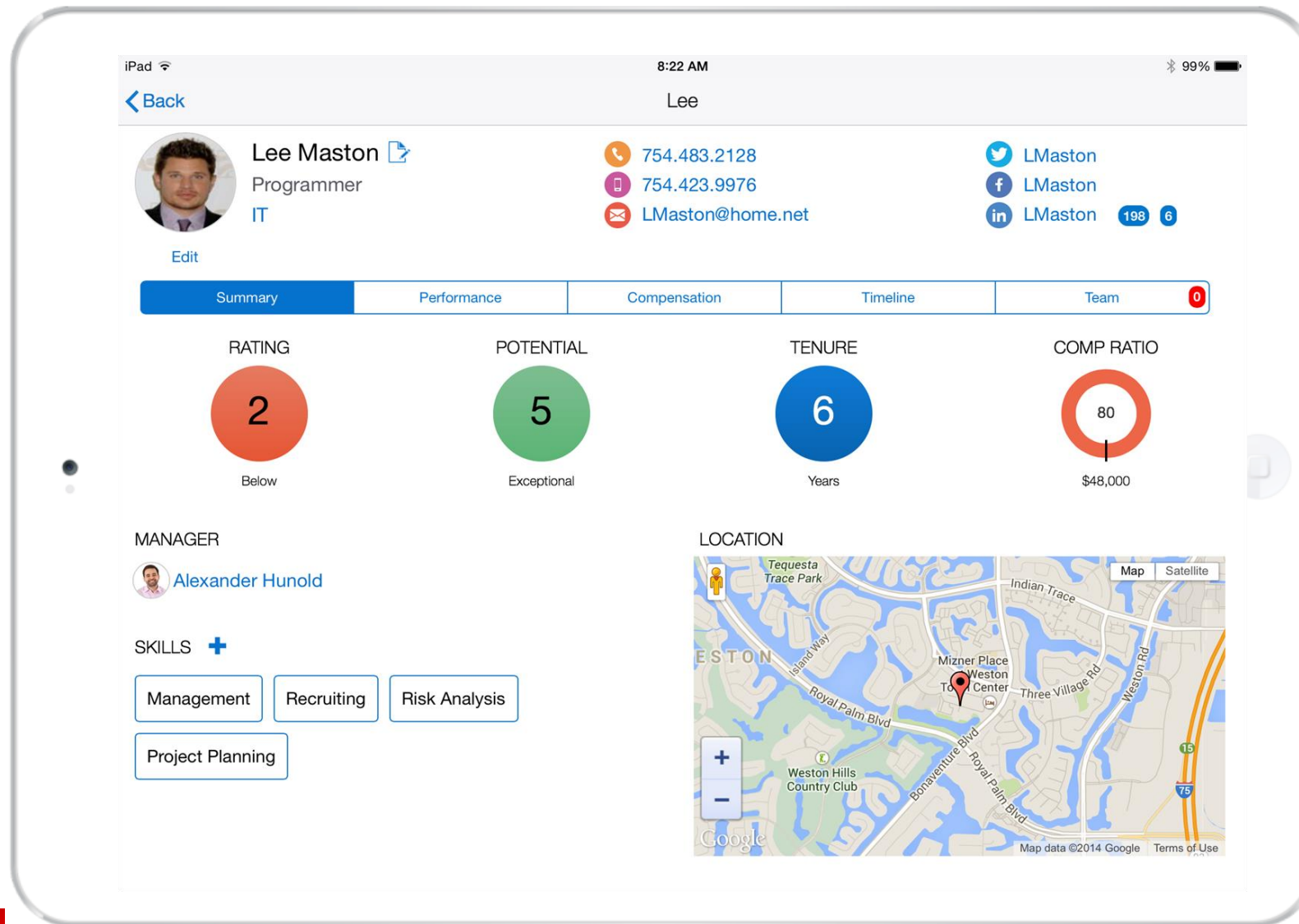
By 2018, **100%** of the LOB apps in customer-facing roles and **75%** of LOB apps in internally facing roles will be built for mobile-first consumption.



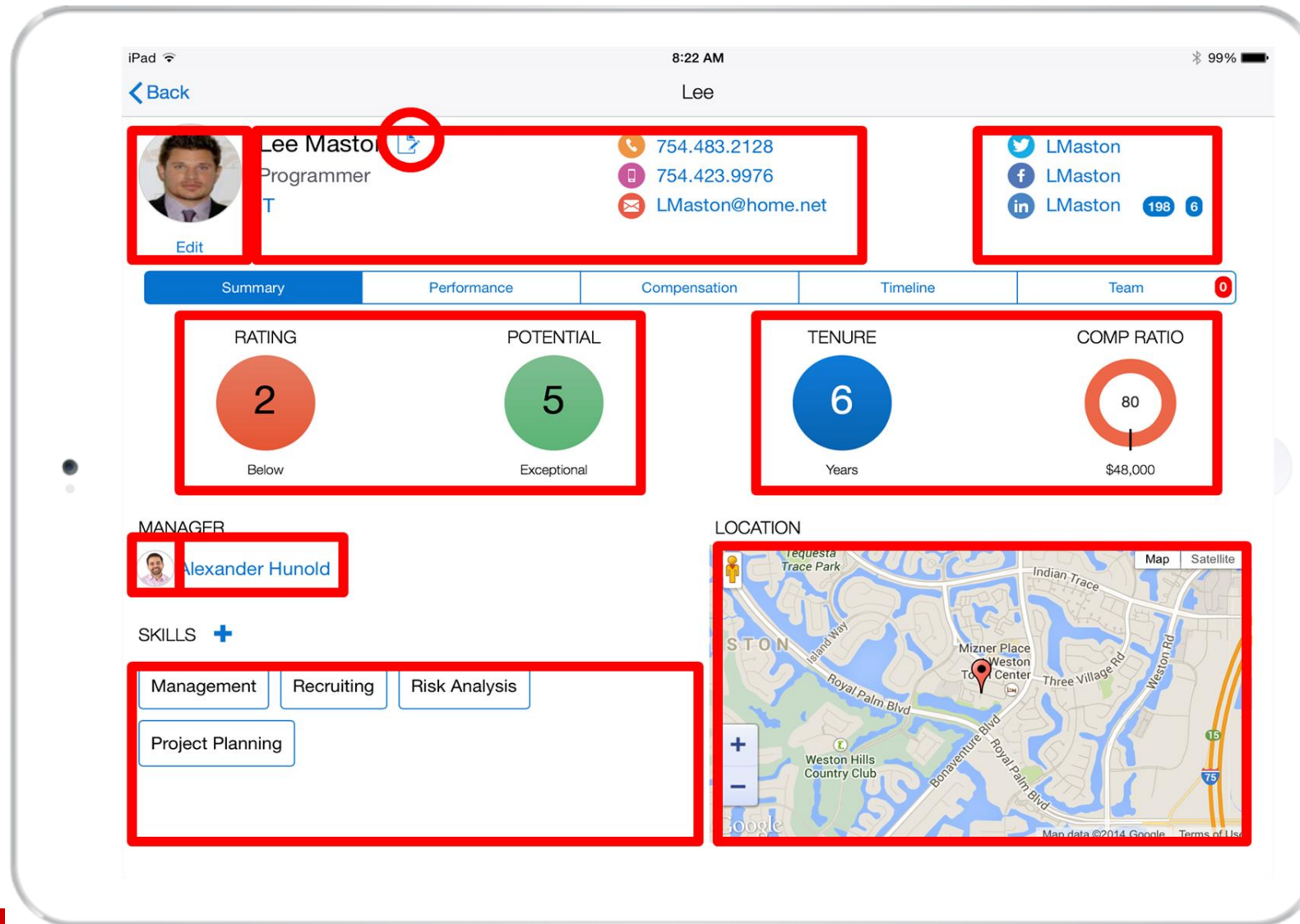
Mobile worker population reached **1.3 Billion** in **2015**

Source: IDC Worldwide Mobile Worker Population 2011-2015 Forecast

# Let's start with a simple HR Mobile App



# Let's decompose this app



# And map it to the systems of record

The screenshot shows an iPad interface for a user named Lee Maston. The top status bar displays 'iPad', '8:22 AM', and '99%' battery. The app header includes a 'Back' button and the name 'Lee'. The main content area is divided into several sections:

- Contact Information:** A red-bordered box contains 'MCS Storage' (with an 'Edit' link), 'Lee Maston' (with a profile picture and 'MCS' tag), 'Programmer', '754.483.2128', '754.423.9976', 'LMaston@home.net', and 'Core HR PeopleSoft, SAP On Premise'.
- Social Networks:** A red-bordered box lists 'LMaston' on 'Twitter, Facebook, LinkedIn' with 'Web' links.
- Summary Tab:** A blue-bordered box with tabs for 'Summary', 'Performance', 'Compensation', 'Timeline', and 'Team' (with a '0' notification).
- Talent Management:** A red-bordered box shows 'RATING 2 Below' and 'POTENTIAL 5 Exceptional' for 'Taleo Cloud'.
- Core HR:** A red-bordered box shows 'TENURE 6 Years' and 'COMP RATIO 80' for 'Core HR PeopleSoft, SAP On Premise'.
- MANAGER:** A red-bordered box shows 'Alex... Hold' for 'Core HR'.
- SKILLS +:** A red-bordered box lists 'Management', 'Recruiting', 'Risk Analysis', and 'Project Planning' for 'Taleo Cloud'.
- LOCATION:** A red-bordered box shows a 'Map Service Google Web' with a map of a residential area.

# Simple app soon became complicated to develop...

**Monitor & Analyze**



**Client Dev Tools**



**Mobile Services**



**Integration**



**Multiple Environments**



**Security**



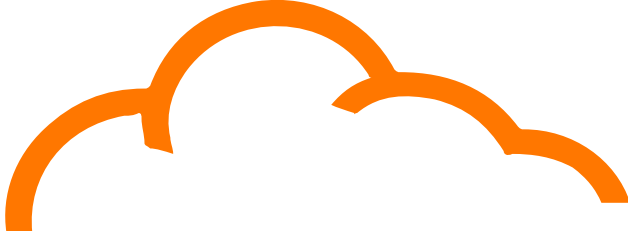
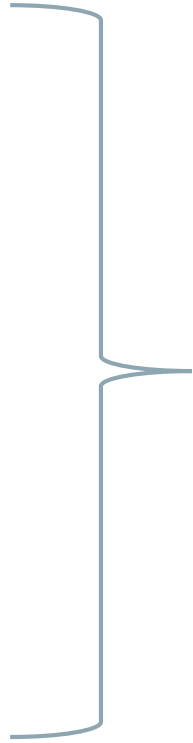


# Mobile Platform

Normalisation, Blending, Data Shaping, Analytics



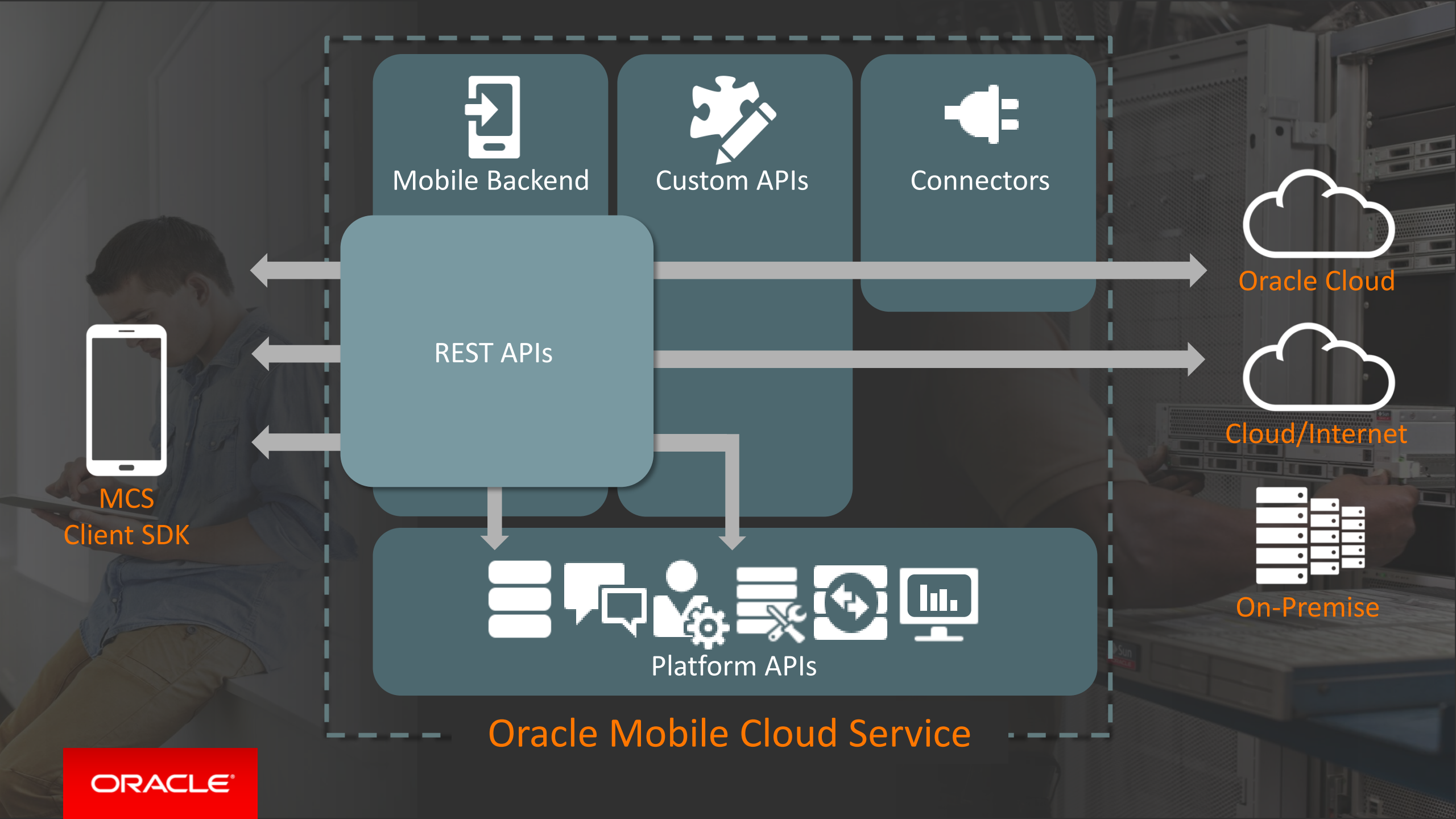
On-Premise



**MOBILE CLOUD SERVICE**

Connect mobile apps to backend services easily and securely.





Mobile Backend

Custom APIs

Connectors

REST APIs



Oracle Cloud



Cloud/Internet

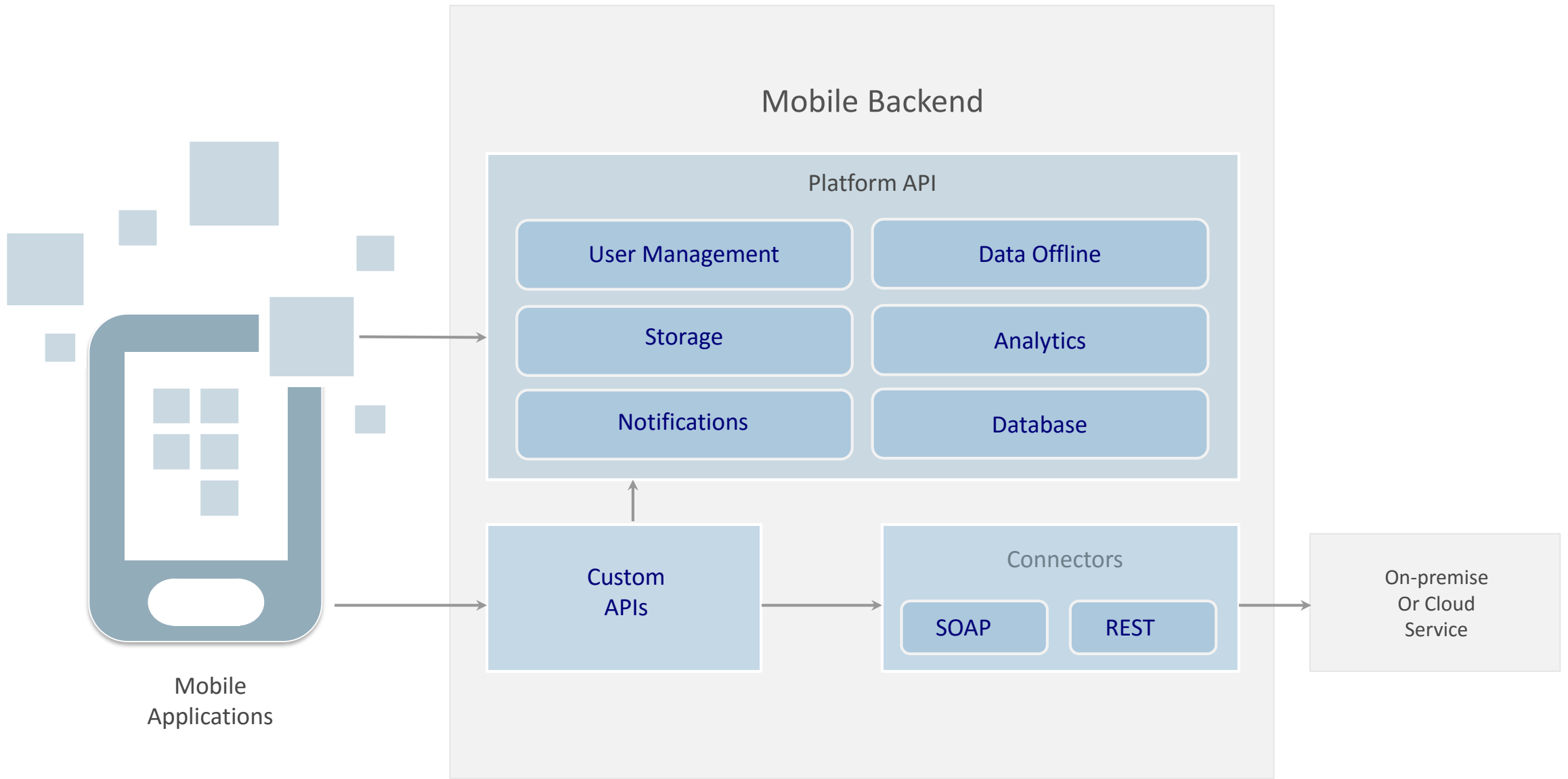


On-Premise

Platform APIs

Oracle Mobile Cloud Service





# User Management

## Login

- Login API has no operation associated with it
  - Candidate for removal
  - Can be used by mobile client application to do an "un-expensive" check if user authorization in HTTP request header parameter is valid

### REST Call Example

Header Parameter	Oracle-Mobile-Backend-ID, Authorization					
REST Methods	GET	PUT	POST	DELETE	HEAD	
REST URI	/mobile/platform/users/login					

# User Management REST API

## User-Information

- Obtain authenticated user information from realm
  - Response contains UMS internal user id (e.g. "id": "b727490b-3b25-412c-bb56-c7f3db2a20d2")
- Authenticated users can access their own user information only
- No user information available for anonymous users

### REST Call Example

Header Parameter	Oracle-Mobile-Backend-ID, Authorization					
REST Methods	GET	PUT	POST	DELETE	HEAD	
REST URI	/mobile/platform/users/{username}					

# Storage

- CRUD operation on shared or user isolated collections of opaque objects
  - Documents, Images, Script Files etc.
  - Payload is JSON or binary streams
- Requires users to have one or more of the following permission
  - READ, READ\_WRITE, READ\_ALL, READ\_WRITE\_ALL

## REST Call Example

Header Parameter	Oracle-Mobile-Backend-ID, Authorization, Accept, If-Match, If-None-Match, Oracle-Mobile-Synch-Agent					
REST Methods	GET	PUT	POST	DELETE	HEAD	
REST URI	/mobile/platform/storage/collections/{collection}/objects/{object}					

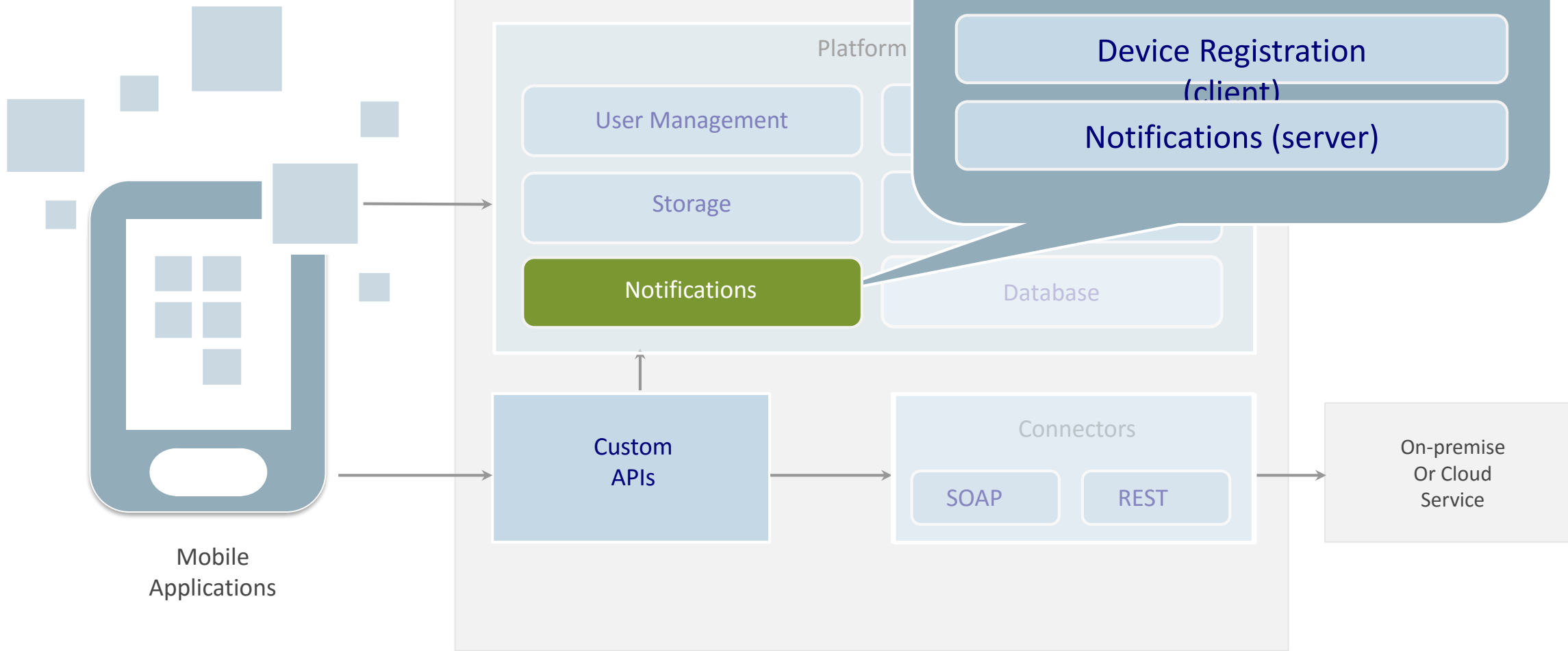
# Data Offline (Sync)

## Device Registration

- Ability of REST clients to send MCS client API requests bundled in a single batch
  - JSON array of request objects (JSON object)
- Each request
  - Has its own set of request headers
  - Defines its own HTTP method and message body

### REST Call Example

Header Parameter	Oracle-Mobile-Backend-ID, Authorization, Content-Type					
REST Methods	GET	PUT	POST	DELETE	HEAD	
REST URI	<a href="http://slc09mdi.us.oracle.com:7201/mobile/platform/sync/batch">http://slc09mdi.us.oracle.com:7201/mobile/platform/sync/batch</a>					





# Notifications

## Device Registration

- Registers iOS and Android Devices to retrieve push notifications sent from MCS and delivered from Google GCM and Apple APNS
- Mobile applications needs to be created for Android and iOS
  - Mobile client Id defined from package and Application name (Android) and Application bundle Id (iOS)
- Messages sent from Custom API

### REST Call Example

Header Parameter	Oracle-Mobile-Backend-ID, Authorization, Content-Type					
REST Methods	GET	PUT	POST	DELETE	HEAD	
REST URI	/mobile/platform/devices/register , /mobile/platform/devices/deregister					

# Notifications

## Sending and Managing Messages

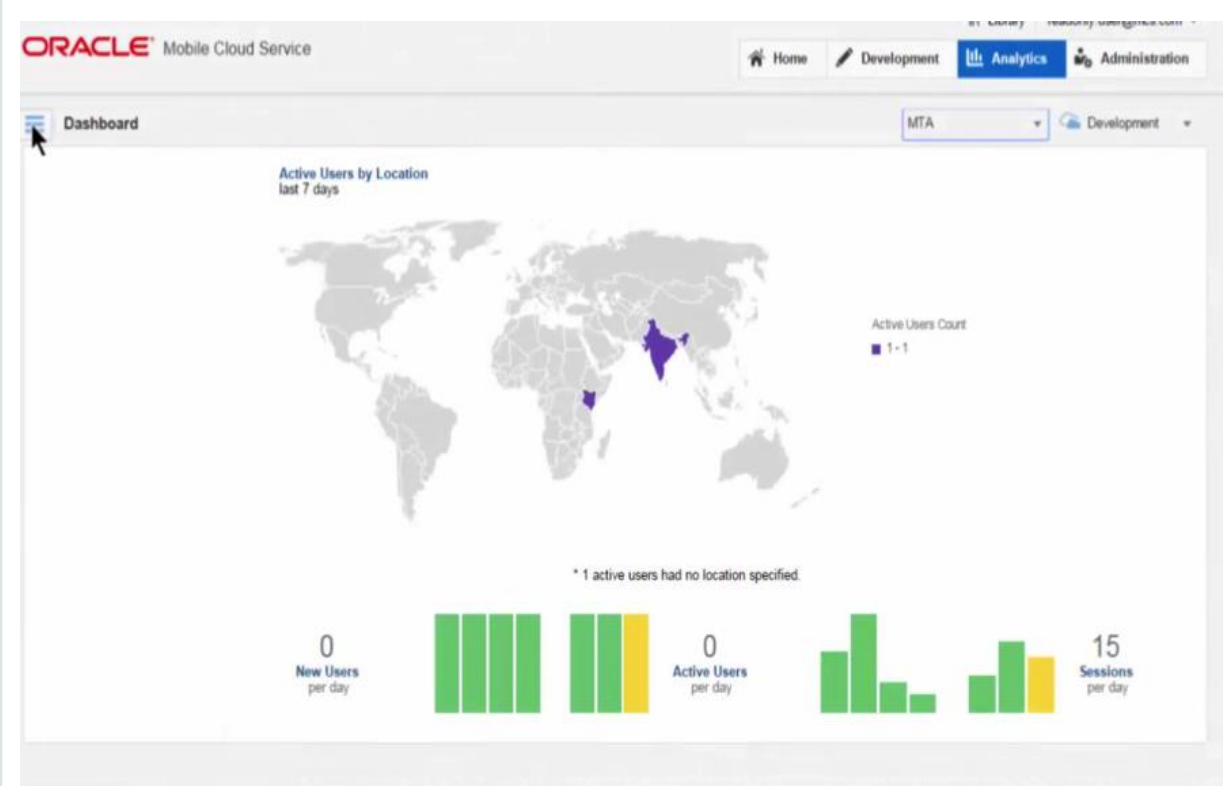
- Messages can be queued for immediate or scheduled delivery to push notification service provider (GMC, APNS)
- Notifications API can only be accessed through server-side REST calls
  - Mobile application user accounts lack required privileges
  - Custom API may be used to expose notification sending ability to mobile clients (use case matters!)

### REST Call Example

Header Parameter	Oracle-Mobile-Backend-ID, Authorization, Content-Type					
REST Methods	GET	PUT	POST	DELETE	HEAD	
REST URI	/mobile/system/notifications/notifications, /mobile/system/notifications/notifications/{id}					

# Mobile Cloud Service Analytics

- Monitoring API calls and response times
- Custom analytics events
- Identifying improvement areas



# Analytics

- JSON payload
- Session start, Session end, Context and Custom event
- Used by client applications to track the usage of a mobile application
- Recorded events can be analyzed in MCS portal UI

## REST Call Example

Header Parameter	Oracle-Mobile-Backend-ID, Authorization, Oracle-Mobile-Device-Id, Oracle-Mobile-Application-Key					
REST Methods	GET	PUT	POST	DELETE	HEAD	
REST URI	/mobile/platform/analytics/events					

# Mobile Application Accelerator (MAX)

## Mobile App Development Feature of the Oracle Mobile Cloud Service

**ANYONE** CAN BUILD MOBILE APPS

**NO CODING** REQUIRED

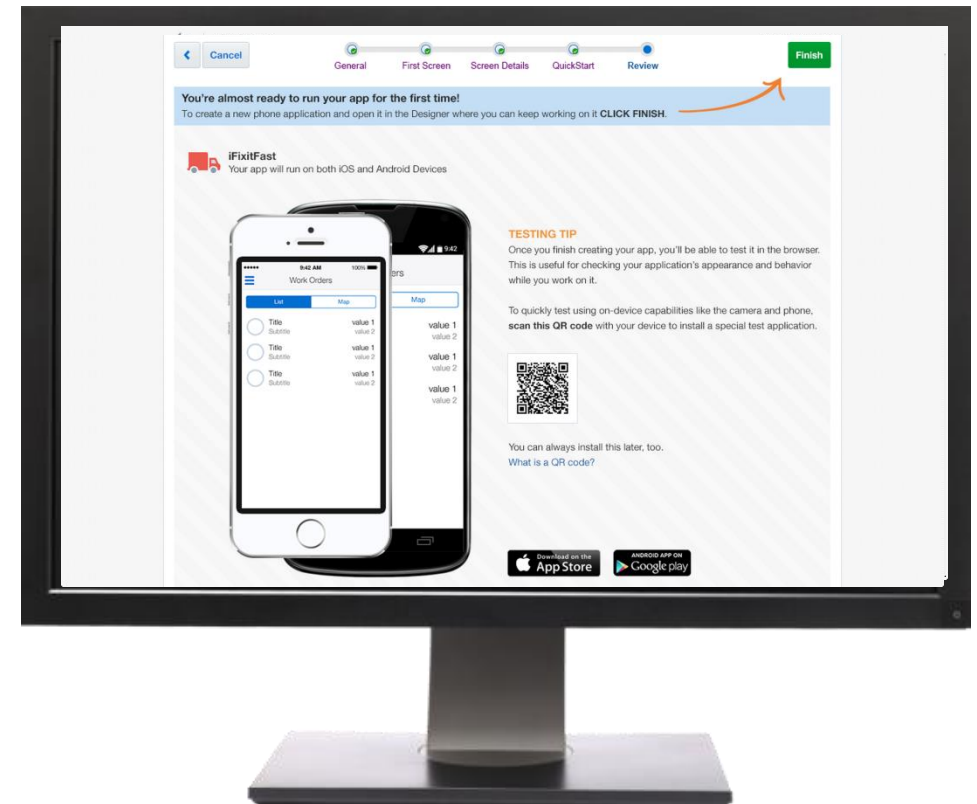
**CREATE** COMPLETE APPS OR REUSABLE MODULES

**COMPONENTS** READY TO USE OR EXTEND

**EASILY MAP** TO BUSINESS SERVICES

**PREVIEW APPS** IN LINE AS YOU DEVELOP

**EDIT, TEST, AND PUBLISH** FROM BROWSER



A woman with long brown hair and glasses is sitting at a wooden table in a cafe. She is wearing a brown leather jacket over a blue patterned scarf. She is holding a black smartphone to her ear with her left hand and looking down at a newspaper or magazine on the table with her right hand. The background is a bright, modern cafe with large windows and other people sitting at tables.

Demo

Active Users by Location last 7 days



Active Users Count  
■ 1 - 1

\* 1 active users had no location specified.

0  
New Users  
per day



0  
Active Users  
per day



15  
Sessions  
per day

- Dashboard
- API Calls
- Events
- Funnels
- Users
- Sessions

Dashboard

MTA

Active Users by Location last 7 days



Active Users Count 1-1

\* 1 active users had no location specified.

0 New Users per day



0 Active Users per day





API Calls

MTA Development

API Calls Count API Calls Response Time

Total API Calls

1H 1D 1W 1M 3M 1Y ALL 02/16/16 02/23/16



1K Total Calls

126 Calls/Day



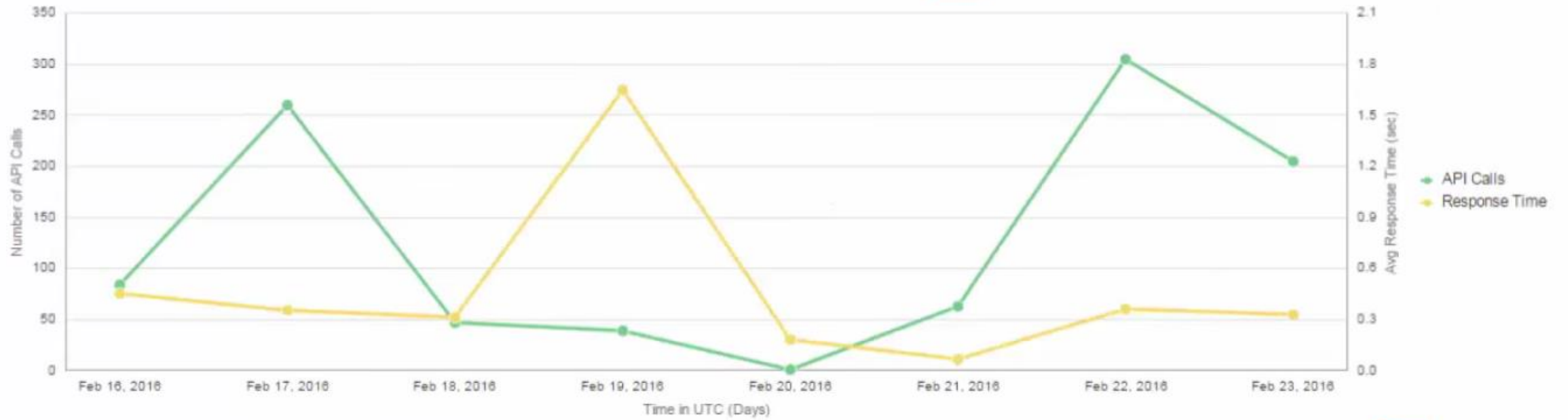
API Calls

MTA Development

API Calls Count **API Calls Response Time**

Total API Calls

1H 1D **1W** 1M 3M 1Y ALL 02/16/16 02/23/16



**126**  
Calls/Day

**0.39**  
Avg Response Time (sec)



- Dashboard
- API Calls
- Events
- Funnels
- Users
- Sessions

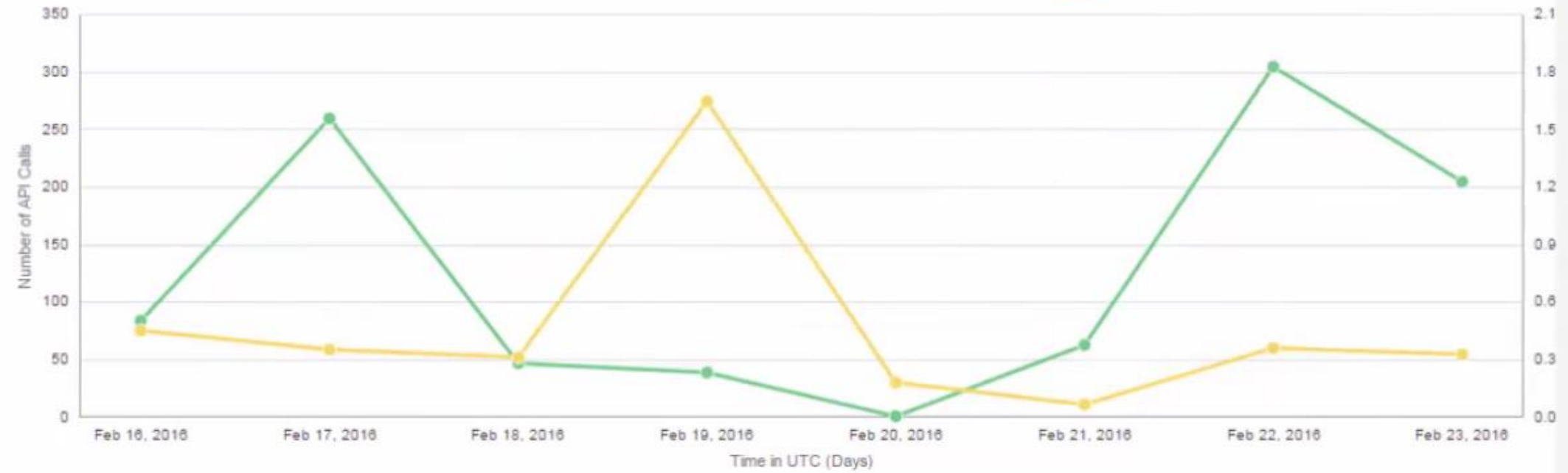
API Calls

MTA

API Calls Count | API Calls Response Time

Total API Calls

1H 1D 1W 1M 3M 1Y ALL 02/16/16



126  
Calls/Day

0.39  
Avg Response Time (sec)

Select an event

- Select an event
- CollisionSyncFailed
- CollisionSynced



### No event is selected

The events report shows how customers use your mobile application. Select an event to start exploring related data.

[Tell me about events](#)

Select an event ▼  
Select an event  
CollisionSyncFailed  
CollisionSynced



### No event is selected

The events report shows how customers use your mobile application. Select an event to start exploring related data.

[Tell me about events](#)

Events

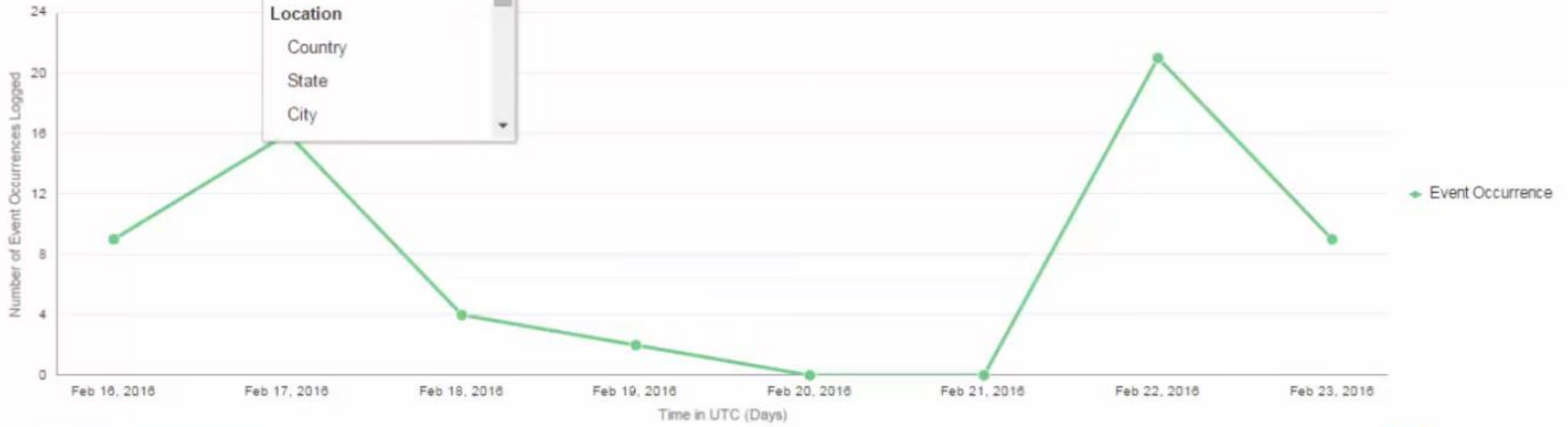
MTA Development

CollisionSynced

1H 1D 1W 1M 3M 1Y ALL 02/16/16 02/23/16

Filters +

- Select a group by property
- Select a group by property
- Custom
- Facility
- Location
- Country
- State
- City



61 Occurrences

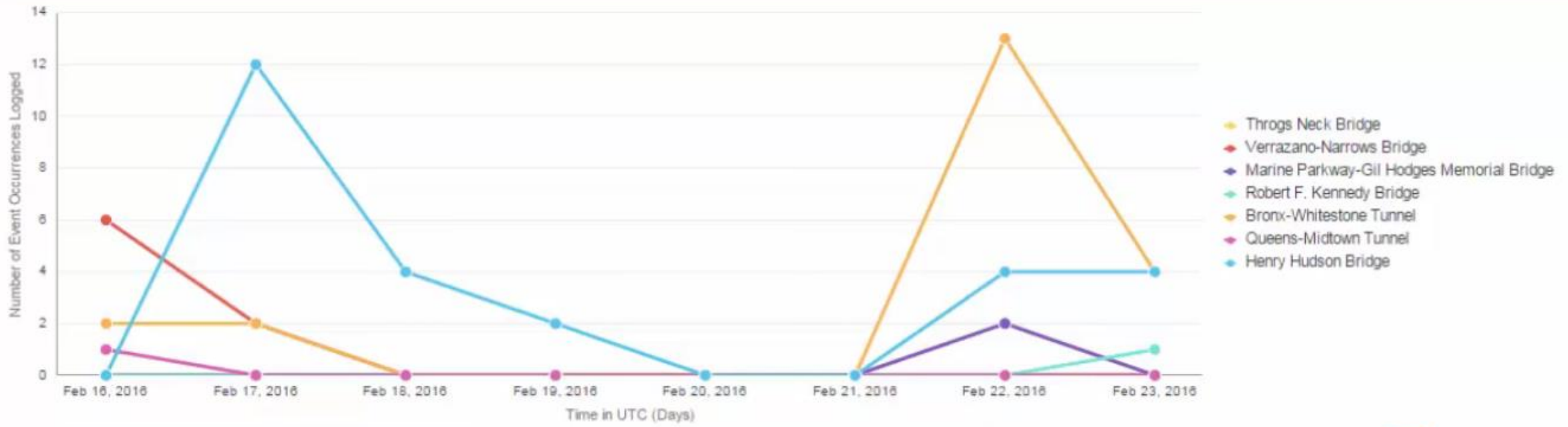
8 Occurrences/Day



CollisionSynced Facility

1H 1D 1W 1M 3M 1Y ALL 02/16/16 02/23/16

Filters +



61 Occurrences

8 Occurrences/Day



Events

MTA Development

- CollisionSynced
- Select an event
- CollisionSyncFailed
- CollisionSynced

Facility

1H 1D 1W 1M 3M 1Y ALL 02/16/16 02/23/16



- Throgs Neck Bridge
- Verrazano-Narrows Bridge
- Marine Parkway-Gil Hodges Memorial Bridge
- Robert F. Kennedy Bridge
- Bronx-Whitestone Tunnel
- Queens-Midtown Tunnel
- Henry Hudson Bridge

61 Occurrences

8 Occurrences/Day





Events

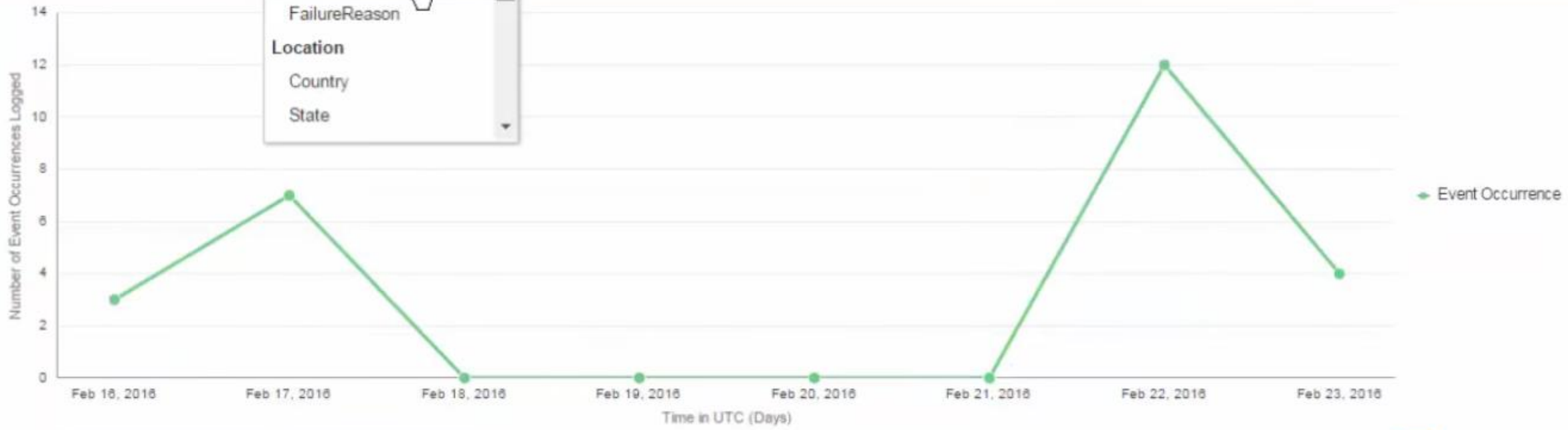
MTA Development

CollisionSyncFailed

1H 1D 1W 1M 3M 1Y ALL 02/16/16 02/23/16

Filters +

- Select a group by property
- Select a group by property
- Custom
- Facility
- FailureReason
- Location
- Country
- State



26 Occurrences

3 Occurrences/Day



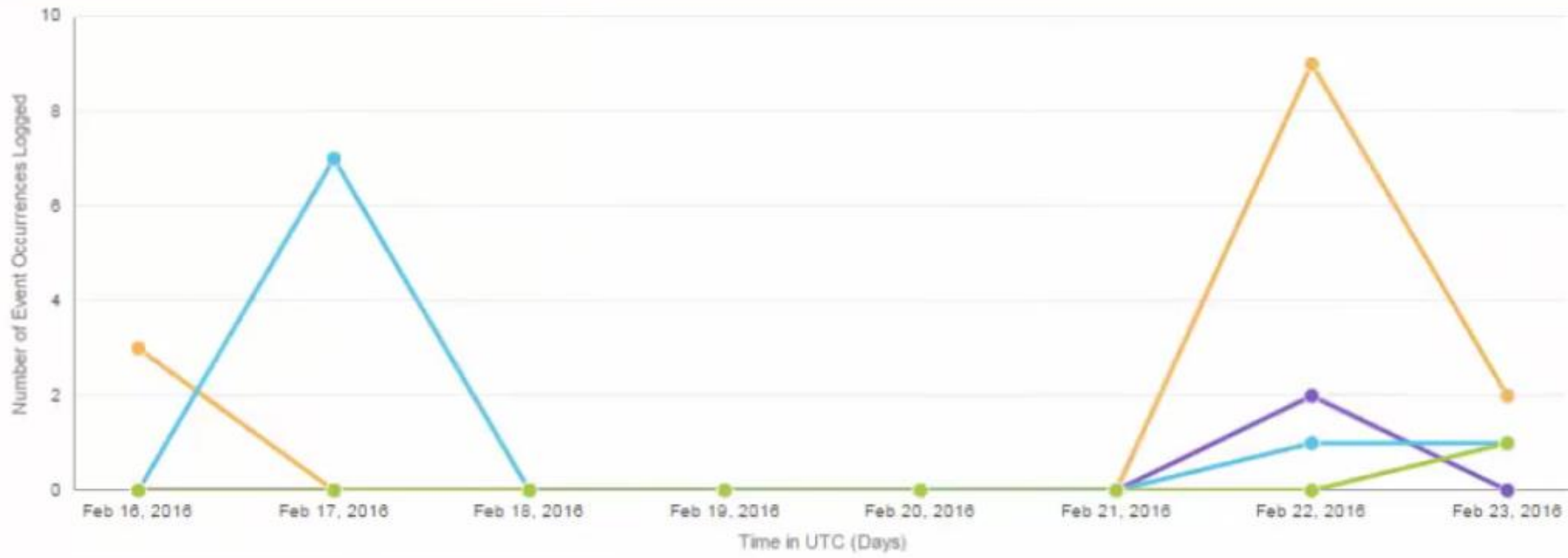
Events

MTA Development

CollisionSyncFailed Facility

1H 1D 1W 1M 3M 1Y ALL 02/16/16 02/23/16

Filters +



- Marine Parkway-Gil Hodges Memorial Bridge
- Bronx-Whitestone Tunnel
- Henry Hudson Bridge
- Cross Bay Veterans Memorial Bridge

26 Occurrences

3 Occurrences/Day



Events

MTA Development

CollisionSyncFailed

1H 1D 1W 1M 3M 1Y ALL 02/16/16 02/23/16

Filters +

- Facility
- Select a group by property
- Custom
- Facility
- FailureReason
- Location
- Country
- State



- Marine Parkway-Gil Hodges Memorial Bridge
- Bronx-Whitestone Tunnel
- Henry Hudson Bridge
- Cross Bay Veterans Memorial Bridge

26 Occurrences

3 Occurrences/Day



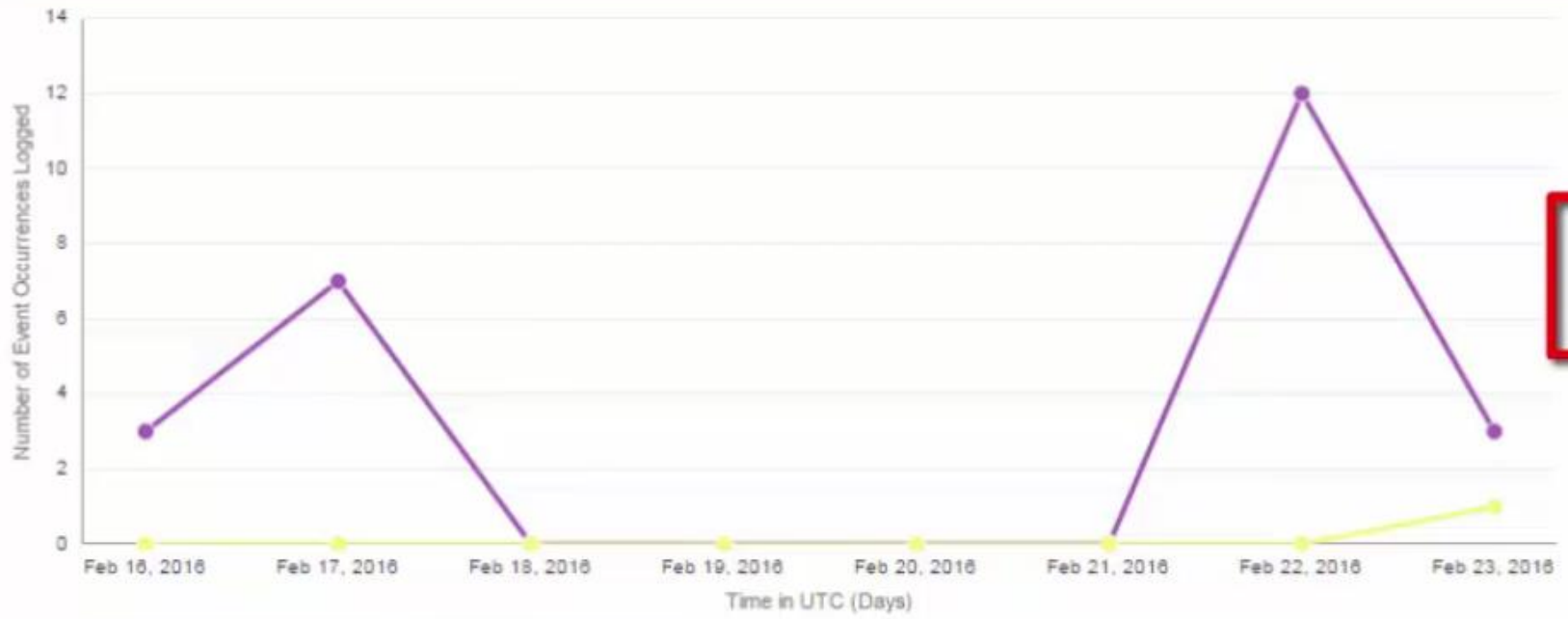
Events

MTA Development

CollisionSyncFailed FailureReason

1H 1D 1W 1M 3M 1Y ALL 02/16/16 02/23/16

Filters +



- ◆ Please enter a Plaza Lane.;
- ◆ Timeout received while running Macro: AP\_createCollisionRep...

26 Occurrences

3 Occurrences/Day





# Summary

## For More Information



[cloud.oracle.com/mobile](http://cloud.oracle.com/mobile)

# Integrated Cloud

## Applications & Platform Services