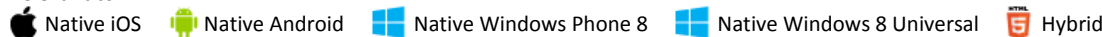


Operational Analytics

Relevant to:



Overview

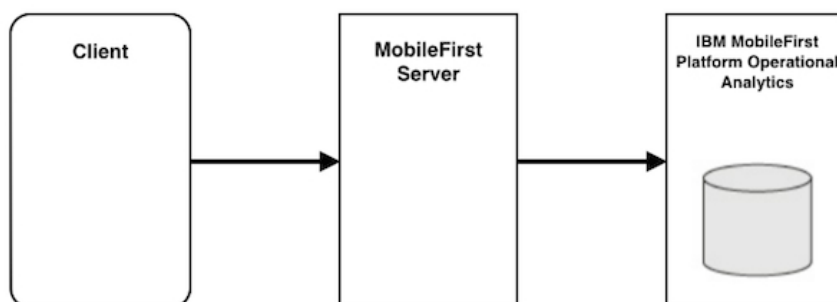
The MobileFirst Platform Operational Analytics Console is a web-based UI that is dedicated to the ongoing monitoring of the deployed applications, adapters, and servers.

Agenda

- [Introducing IBM MobileFirst Platform Operational Analytics](#)
- [Viewing the Analytics Dashboard – Configurations](#)
- [Capturing data](#)
- [Capturing data – Network Activities](#)
- [Capturing data – Notification Activities](#)
- [Capturing data – Server logs](#)
- [Capturing data – Client logs](#)
- [Analytics logs](#)
- [Sending data](#)
- [Creating a custom chart](#)
- [Migration](#)

Introducing IBM MobileFirst Platform Operational Analytics

MobileFirst Operational Analytics collects data about applications, adapters, devices, logs, and your own custom events to give a high-level view of the client interaction with the IBM MobileFirst Platform Server.



Starting with IBM MobileFirst Platform Foundation V7.0, MobileFirst Operational Analytics is delivered as an EAR file which contains two WAR files: `analytics.war` and `analytics-service.war`. You can deploy the EAR file to the following supported application servers:

- Liberty
- WebSphere® Application Server
- Tomcat

In MobileFirst Studio, the two WAR files are installed and available by default in the embedded Liberty server.

Viewing the Analytics Dashboard – Configurations

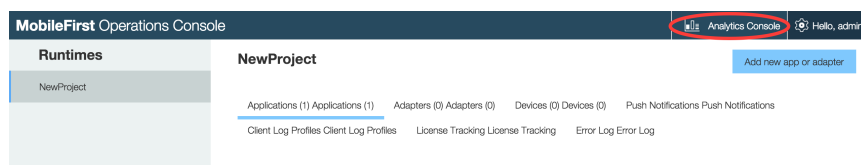
The `wl.analytics.url` property must be set to send data to the Analytics server and the `wl.analytics.console.url` must be set to access the Analytics dashboard.

1. You can set these two properties in the `server.xml` file:

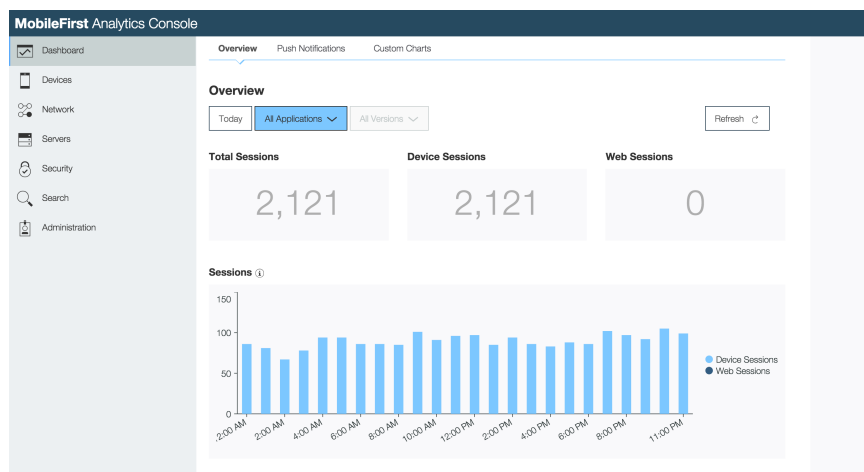
```

<jndiEntry jndiName="AppName/wl.analytics.url" value="http://localhost:10080/analytics-service/data"/>
<jndiEntry jndiName="AppName/wl.analytics.console.url" value="http://localhost:10080/analytics/console"/>
  
```

After the property is set, the **Analytics Dashboard** link appears in the MobileFirst Operations Console.



2. Click the **Analytics Dashboard** link to open up the dashboard in a new window.



Capturing data

Different types of analytics events are captured by the MobileFirst Operational Analytics server: network activities, notification activities, server logs, and client logs.

Network activities

- Client interacting with the server

Notification activities

- Push notifications

Server Logs

- Server events
- Server stack traces

Client Logs

- Debug logs
- Crashes
- Custom events
- Network latency information

Capturing data – Network activities

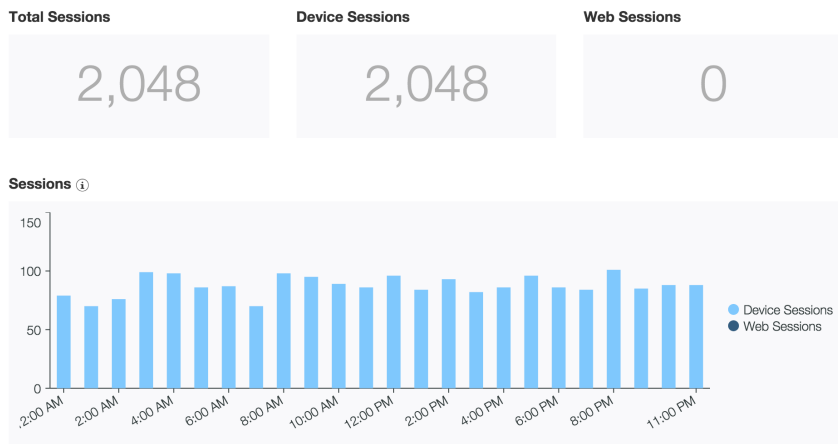
When a network activity occurs, the event is captured automatically and forwarded to the MobileFirst Operational Analytics server.

- The following API call results in a *session hit* that is visualized on MobileFirst Operational Analytics:

```
// a 'session hit' will be recorded upon a successful connection
WL.Client.connect();
```

- The following API call results in an *adapter hit* and a *session hit* that are visualized on the MobileFirst Operational Analytics dashboard:

```
// an 'adapter hit' and a 'session hit' will be recorded upon a successful adapter invocation
WLResourceRequest.send();
```



Capturing data – Notification Activities

When a push notification occurs, the event is captured automatically and forwarded to the MobileFirst Operational Analytics server.

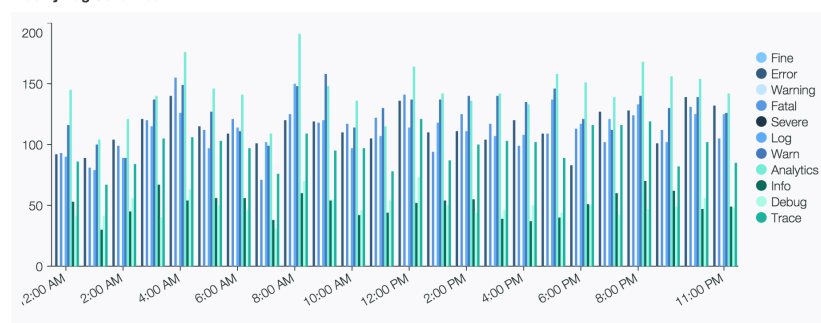
Notifications By Mediator



Capturing data – Server Logs

The log data that is generated by MobileFirst Server is automatically forwarded to the MobileFirst Operational Analytics server, where the data can be searched and downloaded.

Weekly Log Severities



Server Logs

Date	Severe	Warn	Info	Fine	Download
Tuesday, Jun 23, 2015, 12:00 AM	0	116	53	0	Download
Tuesday, Jun 23, 2015, 1:00 AM	0	100	30	0	Download
Tuesday, Jun 23, 2015, 2:00 AM	0	89	45	0	Download
Tuesday, Jun 23, 2015, 3:00 AM	0	137	67	0	Download
Tuesday, Jun 23, 2015, 4:00 AM	0	149	54	0	Download
Tuesday, Jun 23, 2015, 5:00 AM	0	127	56	0	Download
Tuesday, Jun 23, 2015, 6:00 AM	0	111	56	0	Download

To disable this behavior, set the `wl.analytics.logs.forward` property to false.

Capturing data – Client Logs

You can instrument a MobileFirst application with client logs to record client debugging information and events.

You can use the following APIs to create client logs which are then forwarded to the MobileFirst Operational Analytics server, where they can be searched and downloaded.

```
// Set the log level to trace so that all logs are captured
WL.Logger.config({"level": "TRACE"});

// Create a client side log that is persisted locally until it is sent to the server
WL.Logger.trace("Create a client log at the TRACE level.");
WL.Logger.debug("Create a client log at the DEBUG level.");
WL.Logger.info("Create a client log at the INFO level.");
WL.Logger.warn("Create a client log at the WARN level.");
WL.Logger.error("Create a client log at the ERROR level.");
WL.Logger.fatal("Create a client log at the FATAL level.");
```

Analytics Logs

Client-side logs are captured based on the logging level that is set on the client. If you want to create analytics logs that are always captured regardless of the logging level, you can use the `WL.Analytics` API.

```
// Create an analytics log message
WL.Analytics.log("Analytics log message");
```

```
// Create a custom activity
WL.Analytics.log({_activity: "customActivity"});

// Create a custom activity with a log message
WL.Analytics.log({_activity: "customActivity"}, "Analytics log message");
```

Sending data

Logs that are captured by the client-side logging APIs and the `WL.Analytics` APIs are sent to the server automatically upon a successful server connection or a successful adapter call.

```
// Logs sent upon successful connection
WL.Client.connect();

// Logs sent upon successful adapter invocation
WLResourceRequest.send();
```

You can disable this automatic behavior by using the following call:

```
// Disable automatic sending of client and analytics logs
WL.Logger.config({autoSendLogs: false});
```

If you want to send this data more frequently, you can use the following API calls:

```
// Send client debug logs
WL.Logger.send();

// Send analytics logs
WL.Analytics.send();
```

Custom charts

Custom charts are a new feature of MobileFirst Platform Operational Analytics 7.0 and later. By using custom charts, you can take data that is already collected, like device ID, device model, device OS, etc., or log your own custom data and create charts. To understand how to log and send data, see [Analytics logs](#) and [Sending data](#).

Chart types

- Bar Graph
- Flow Chart
- Line Graph
- Metric Group
- Pie Chart
- Table

Creating a custom chart

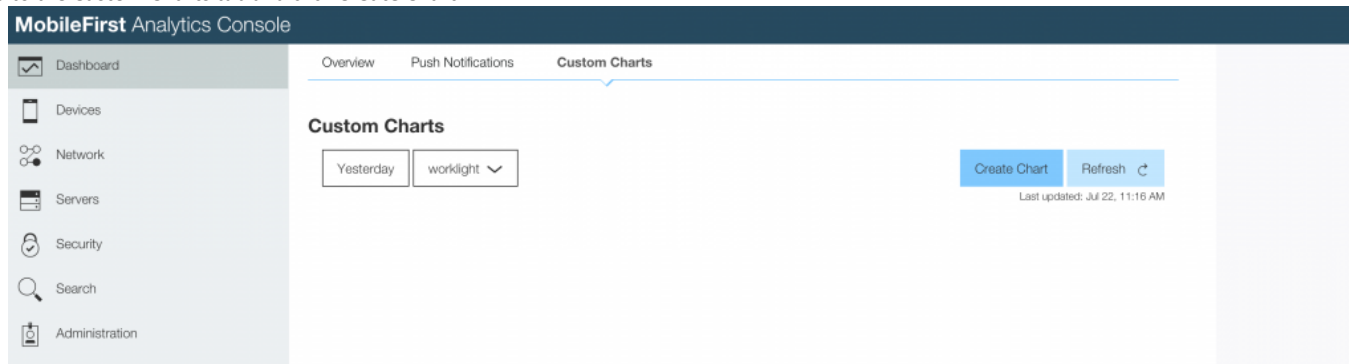
Creating a custom chart is simple. The following example walks you through creating a pie chart, based on the user pressing three buttons.

The messages that are logged to the Operational Analytics server in this example are hard-coded buttons. Those messages look like this:

```
WL.Analytics.log({buttonPress: "buttonA"}, "press");
WL.Analytics.log({buttonPress: "buttonB"}, "press");
WL.Analytics.log({buttonPress: "buttonC"}, "press");
```

To create a chart, follow these steps.

1. Go to the **Custom Charts** tab and click **Create Chart**.



The following will appear.

Custom Charts

General Settings

Chart Title: Custom Chart

Event Type: Select Event Type ▾

Save

Next

Cancel

Custom Chart

Missing event type

As you fill out your information, more input fields are displayed.

2. Enter a **Chart Title**
3. Select **Custom Data** as the **Event Type**
4. Select a **Chart Type**. This example uses a **Pie Chart**.

Custom Charts

General Settings

Chart Title: Custom Chart

Event Type: Custom Data ▾

Chart Type: Select Chart Type ▾

Select Chart Type

Bar Graph

Flow Chart

Line Graph

Metric Group

Pie Chart

Table

Save

Next

Cancel

Custom Chart

Missing chart type

5. Click on the **Chart Definition** tab.

Custom Charts

General Settings

Chart Definition

Chart Title: Custom Chart

Event Type: Custom Data ▾

Chart Type: Pie Chart ▾

Save

Next

Cancel

6. Select a **Property**. This example uses `buttonPress`.

Custom Charts

General Settings

Chart Definition

Pie Chart Configuration

Property:

Select Property

Select Property

Application Version

mykey

Device OS Version

Application Name

Device Id

Device Model

buttonPress

Device OS

Save

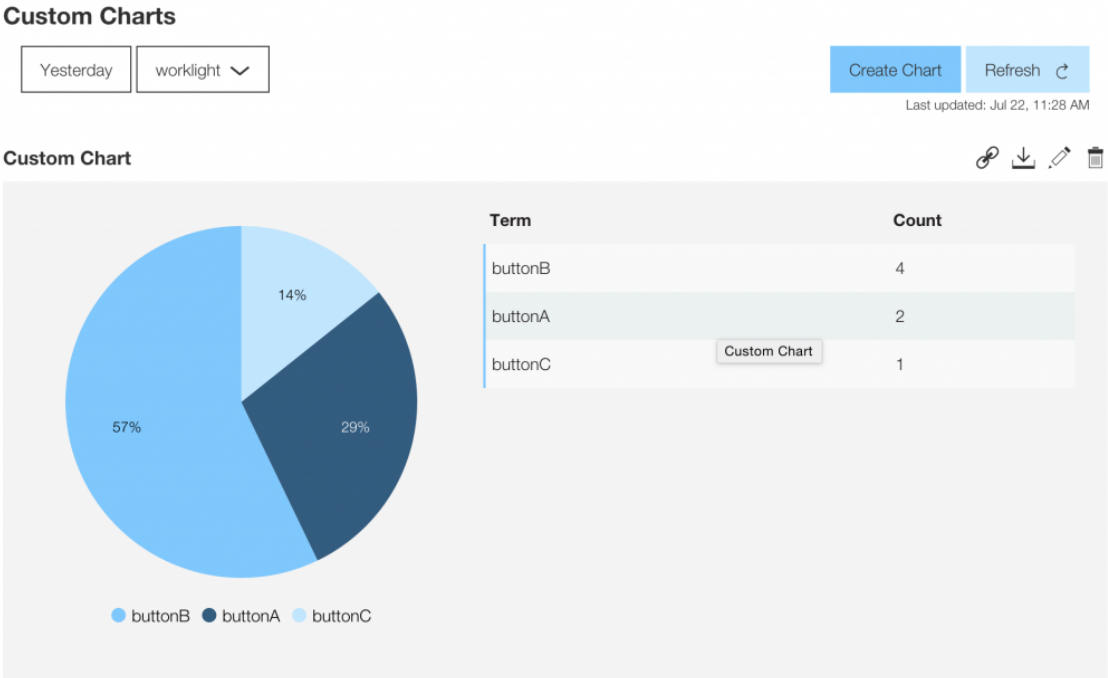
Next

Cancel

Custom Chart

Pie chart missing property

7. Click **Save**. The chart is saved under the **Custom Charts** tab in the main dashboard.



Migration

MobileFirst Platform Foundation Analytics now has a simple migration tool for users who are on an earlier version of Operational Analytics than MobileFirst Platform Foundation 7.1.0. This feature is needed because some of the search mappings in previous versions of IBM MobileFirst Platform Foundation that are necessary to populate the Analytics console have been changed. To run this search, go to the **Administration** tab on the left side of the console. After the administration console loads, click the **Migration** tab on the top tab bar. You can then see how many documents you have to migrate and the progress of the migration. You can perform a migration by pressing the **Perform Migration** button. After the migration process, all your data is migrated to IBM MobileFirst Platform Foundation 7.1.0 with all the correct mappings. You can see an example of the migration tab below.

MobileFirst Analytics Console

Dashboard

Devices

Network

Servers

Security

Search

Administration

Cluster and Node

Update Settings

Export Data

Migration

Migration

Migrate Data

Indices to migrate	Documents
worklight	1669258

Total number of documents to migrate: 1669258

Perform Migration