IBM Tealeaf CX Mobile
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Tealeaf CX Mobile User Manual

IBM

Contents

Tealeaf CX Mobile User Manual

Tealeaf® CX Mobile User Manual details the IBM Tealeaf CX Mobile module for the IBM Tealeaf CX platform, which enables analysis and reporting on visitors who use mobile devices to access your web application. Use these links to access specific topics in the manual.

Chapter 1. IBM Tealeaf CX Mobile

The IBM Tealeaf CX Mobile modules capture, replay, and analyze the experiences of visitors who access your web application through web browsers or mobile native applications on mobile devices. Through IBM Tealeaf CX Mobile, you can monitor the mobile user experience with the same IBM Tealeaf suite of analysis tools that are used for visitors on desktop systems.

As the mobile device installation base expands, gaining insight into this rapidly developing market is critical to making more informed decisions about optimizing your website for the mobile experience. Given the wide array of mobile devices in use on the web, forward-thinking enterprises must be able to examine how to best serve this diverse and growing customer segment. The IBM Tealeaf event-driven capabilities segment mobile users for detailed reporting to meet your enterprise requirements.

Information capture

The IBM Tealeaf CX Mobile for Mobile Application components capture information from the mobile native applications that you deploy for your customers. The captured information includes:

- User interface events
- Application events
- Mobile device properties

Developers can integrate the supported Logging Frameworks with their deployed applications and enable the capture of this rich set of application data for use in IBM Tealeaf.

- See "Integrate IBM Tealeaf CX Mobile with your mobile applications" on page 9.

Information about module

The IBM Tealeaf CX Mobile module is a separately licensed module of the IBM Tealeaf CX platform. please contact your IBM Tealeaf representative.

The mobile user experience and the desktop user experience are not the same

The mobile user's experience and expectations are fundamentally different from the desktop browser user's experience and expectations.

Mobile users:
- Are task-oriented
- Want efficient and quick resolution of their transactions
- Are easily frustrated
- Have a more personal point of view with online interactions

The methods for monitoring customer struggle with Tealeaf provide unique insight into areas where your mobile customers are getting frustrated and potentially

abandoning transactions. By deploying IBM Tealeaf CX Mobile, you can monitor mobile customer experience and processes with a fidelity not available in other solutions.

Why use Tealeaf?

IBM Tealeaf CX Mobile delivers key information on the mobile user experience. In addition to standard analytics capabilities in capturing user profiles and reporting on time-based activities, the Tealeaf mobile solution provides insight into why activities are happening.

Mobile user experience information

Tealeaf provides mobile user experience information that gives you:
- Visibility into mobile user success and failure:
  - Detect obstacles or issues without relying on user feedback
  - Understand usage by mobile devices across the user base, site, and apps
  - Identify cause without having to update or relaunch services
  - Visibility into usage patterns across the entire user base
- Accelerated time-to-market:
  - Stop waiting on user feedback before you make improvements
  - Rapidly evaluate mobile features: adoption, success, and failure points
  - Eliminate poor quality to deliver winning mobile services
- Informed mobile investments:
  - Quantify business impact to prioritize decisions: fix, invest, and remove
  - See the actual usage of mobile services rather than the expected usage

Use the mobile user experience information

With the information that you collect with Tealeaf you can:
- Detect user struggle
- Drill down into visitor behavior to analyze individual sessions
- Correlate visitor behavior with network data

What IBM Tealeaf CX Mobile does

IBM Tealeaf CX Mobile captures web and application events, replays mobile sessions, and collects visitor and device metrics.

Capture web and application events

IBM Tealeaf CX Mobile enables the monitoring and capture of client-side interactions through mobile web browsers and native applications. These events are captured transparently to the user and submitted to Tealeaf for capture and processing through your installed Tealeaf solution.
- Device demographics can be captured through the user agent string that is submitted by the device or the installed Tealeaf client framework that is used to monitor the device
- Capture of exception messages for processing and rapid reporting

Mobile session replay

IBM Tealeaf CX Mobile captures the complete set of interactions of every mobile visitor. You can replay captured sessions in a browser-level recording through Browser-Based Replay. Session replay for mobile devices accounts for browser capabilities, screen sizes, and other characteristics of the device and its browser.

- Support for mobile-specific actions such as orientation change, swipe, and more
- Render in replay by using screen dimensions, known device characteristics, and orientation
- For more information about search and replay for Mobile web, see Chapter 2, "Search and Replay for mobile web sessions," on page 11.
- For more information about search and replay for Mobile App, see Chapter 3, "Search and Replay for Mobile Apps," on page 21.
- For more information about Browser-Based Replay, see "CX Browser Based Replay" in the *IBM Tealeaf cxImpact User Manual*.

Mobile visitor and device metrics

IBM Tealeaf CX Mobile enables detailed data capture on mobile visitors and their devices. Usage statistics and trending patterns can be monitored through provided reports. You can also create ad hoc visitor segments that are based on mobile attributes such as device manufacturer, operating system, screen resolution, and more.

- For more information about visitor segments, see "Analyzing Visitor Segments" in the *IBM Tealeaf cxResults User Manual*.

Available Mobile Data by License

The available mobile data that is captured differs based on the Tealeaf product licenses that you have.

This table lists and describes the data that is captured by Tealeaf licensed products:

Table 1. Available Mobile Data by License

License	Capability	Description
IBM Tealeaf cxImpact	Capture user agent data	When extended user agent parsing is enabled, IBM Tealeaf cxImpact can capture data that is submitted with each request by the visitor's user agent. This data is inserted into the request by the Tealeaf Reference session agent, which uses a deployed version of the browscap public standard to look up more data. Part of this data insertion is identifying whether the session was initiated from a mobile device or not. **Note:** If you do not deployIBM Tealeaf CX UI Capture j2, some aspects of the mobile visitor experience cannot be replayed. For best results in displaying orientation change, enabling resizing of the replay view screen, you must deploy UI Capture. See the *IBM Tealeaf UI Capture for j2 Guide*. • Extended user agent parsing is enabled by default. See "Tealeaf Reference Session Agent" in the *IBM Tealeaf CX Configuration Manual*. • For more information about user agents, see "Managing User Agents" in the *IBM Tealeaf cxImpact Administration Manual*.
IBM Tealeaf CX license (IBM Tealeaf CX UI Capture for AJAX) **Note:** IBM Tealeaf CX UI Capture for AJAX is only available to legacy users.	Capture mobile device properties and UI events (gesture, touch, and so on)	When the IBM Tealeaf CX license is enabled, customers can deploy the IBM Tealeaf CX UI Capture for AJAX solution. This Javascript-based solution is deployed from your web servers to the visitor's browser. It captures mobile-specific events, such as gesture and touch events, as well as mobile device properties. **Note:** This license is not enforced in the product and operates independently of the other licenses. It is managed through limited distribution of the library. • For more information about IBM Tealeaf CX UI Capture for AJAX, see "UI Capture FAQ" in the *IBM Tealeaf UI Capture for Ajax FAQ*. • For more information about mobile-specific features of IBM Tealeaf CX UI Capture for AJAX, see "UI Capture for Ajax Reference" in the *IBM Tealeaf UI Capture for Ajax Guide*.

Table 1. Available Mobile Data by License (continued)

License	Capability	Description
IBM Tealeaf CX license (IBM Tealeaf CX UI Capture for AJAX)	Capture mobile device properties and UI events (gesture, touch, and so on)	When the IBM Tealeaf CX license is enabled, customers can deploy the IBM Tealeaf CX UI Capture for AJAX solution. This Javascript-based solution is deployed from your web servers to the visitor's browser. It captures mobile-specific events, such as gesture and touch events, as well as mobile device properties. **Note:** This license is not enforced in the product and operates independently of the other licenses. It is managed through limited distribution of the library. • For more information about IBM Tealeaf CX UI Capture for AJAX, see "UI Capture FAQ" in the *IBM Tealeaf UI Capture for Ajax FAQ.* • For more information about mobile-specific features of IBM Tealeaf CX UI Capture for AJAX, see "UI Capture for Ajax Reference" in the *IBM Tealeaf UI Capture for Ajax Guide*.
IBM Tealeaf CX license (IBM Tealeaf CX UI Capture j2)	Capture mobile device properties and UI events (gesture, touch, and so on)	When the IBM Tealeaf CX license is enabled, customers can deploy the IBM Tealeaf CX UI Capture j2 solution. This Javascript-based solution is deployed from your web servers to the visitor's browser. It captures mobile-specific events, such as gesture and touch events, as well as mobile device properties. **Note:** This license is not enforced in the product and operates independently of the other licenses. It is managed through limited distribution of the library. • For more information about IBM Tealeaf CX UI Capture j2, see the *IBM Tealeaf UI Capture for j2 Guide*.

Table 1. Available Mobile Data by License (continued)

License	Capability	Description
IBM Tealeaf CX Mobile module	Capture mobile user agent data	When the IBM Tealeaf CX Mobile module is licensed, the Tealeaf Reference session agent can perform more mobile-specific lookups for user agent information by using the WURFL public standard. This standard contains detailed data on known mobile devices, which are based upon the user agent string that is submitted in the request. • IBM Tealeaf CX Mobile requires the XML version of the WURFL standard to be converted to an internally usable CSV format. If the IBM Tealeaf CX Mobile module is not licensed, access to the utility provided by Tealeaf to perform this conversion is forbidden. For more information about WURFL and this utility, see "Overview of User Agents for CX Mobile" in the *IBM Tealeaf CX Mobile Administration Manual*.
IBM Tealeaf CX Mobile module	Replay of mobile user agent data, device properties, and UI events	When IBM Tealeaf CX Mobile is licensed, the replay of mobile-sourced sessions is supported in Browser-Based Replay (BBR). **Note:** When IBM Tealeaf CX Mobile module is not licensed, the following limitations are applied to replay of mobile-based sessions: 1. No display of mobile-specific events, such as scroll and touch 2. No display of mobile device data during replay 3. No use of a mobile skin (Extended user agent parsing is also required.) 4. No display of device orientation changes 5. No resizing of the screen to the mobile browser dimensions The underlying data is captured independent of the license; enabling the license allows mobile-based replay of sessions that are already captured. • BBR is a Portal-based method of replaying sessions. For more information about BBR replay, see "CX Browser Based Replay" in the *IBM Tealeaf cxImpact User Manual*.

Table 1. Available Mobile Data by License (continued)

License	Capability	Description
IBM Tealeaf CX Mobile for Mobile App	Capture of native app events for iOS and Android systems	When IBM Tealeaf CX Mobile is licensed, customers can request access to the iOS and Android Logging Frameworks. When these frameworks are deployed as part of the native applications that you build and deploy to your visitors by using iOS and Android devices, a large set of device properties and application events are captured and submitted to Tealeaf for processing, enabling close monitoring of device-specific activities. **Note:** This license is not enforced in the product and operates independently of the other licenses. It is managed through limited distribution of the library. • See the *IBM Tealeaf iOS Logging Framework Guide*. • See the *IBM Tealeaf Android Logging Framework Guide*.

Where to look for information

IBM Tealeaf CX Mobile is pre-configured to analyze on sessions that are captured from visitors by using mobile devices.

To meet the requirements of your enterprise, review this configuration and documentation reference information:

Capability	Description	Documentation
Reference data	Tealeaf can identify mobile devices that are based on the device type or browser type. Additionally, Tealeaf can monitor specific features of the device, such as video streaming, picture display, and JavaScript capabilities.	• If your UI Capture is licensed and deployed to track user interface events, events specific to mobile device browsers can be captured and processed by Tealeaf. • See "Configuring Tealeaf for Mobile Visitors" in the *IBM Tealeaf CX Mobile Administration Manual*.
WURFL	Tealeaf relies on a publicly available standard for identifying mobile devices. This standard requires regular updating from the source.	See "Configuring Tealeaf for Mobile Visitors" in the *IBM Tealeaf CX Mobile Administration Manual*.

Capability	Description	Documentation
Creating events	Based on the captured user agent data, you can create events that can be used to identify mobile visitor activities and device capabilities. Based on these events, you can create alerts and reports for display in the Portal.	See Chapter 4, "Events for mobile visitors," on page 33.
Reports on mobile visitors and devices	As needed, you can download report templates or create custom reports to surface information about the mobile visitor experience.	See Chapter 5, "Generate reports for Mobile web," on page 57.
Mobile Web Replay	Segments from mobile visitors and devices can be replayed through Browser-Based Replay in the Tealeaf Portal. Browser-Based Replay can be configured to replay the visitor session at the appropriate screen size for the device in use and to indicate user interface events.	See Chapter 2, "Search and Replay for mobile web sessions," on page 11.
Mobile App Replay	Sessions can be replayed as screen captures or as an HTML representation of the native mobile session with information related to multiple screens. You can replay mobile app sessions in Browser Based Replay.	See Chapter 3, "Search and Replay for Mobile Apps," on page 21.

Enabling CX Mobile

There are several options to enable CX mobile. Some of the options involve working with IBM Tealeaf CX, IBM Tealeaf cxView, and IBM Tealeaf cxImpact.

Get a license key

IBM Tealeaf CX Mobile is enabled through the license key that you enter in the Tealeaf Installer at upgrade time. A new license key is required. Contact your IBM Tealeaf representative.

Get the latest `BrowsCap.csv`

BrowsCap is a publicly maintained standard for identifying user agents on the web. You must download and install the latest version of `Browscap.csv` into your Tealeaf solution.

- See "Maintaining the CX System" in the *IBM Tealeaf CX Installation Manual*.

Get the latest `WURFL.xml`

WURFL is a publicly maintained standard for identifying mobile devices in use on the web. You must download the latest version of `WURFL.xml` and convert to use in your Tealeaf solution.

- See "Maintaining the CX System" in the *IBM Tealeaf CX Installation Manual*.

Convert the latest `WURFL.xml` file to Tealeaf format

After you get the latest `WURFL.xml` file, you must convert it to a form that is usable by your Tealeaf solution. Tealeaf provides an external tool to convert the downloaded file.

Use the `WURFL2csv.exe` program to convert the `WURFL.xml` file into the required format.

- See "User Agent Tools" in the *IBM Tealeaf cxImpact Administration Manual*.

Get mobile dashboards from IBM Tealeaf cxView

You can download and import mobile dashboards from IBM Tealeaf cxView to use in CX Mobile.

Download mobile dashboards

Tealeaf published dashboards for IBM Tealeaf CX Mobile, which contain the event definitions that are required to capture mobile data for aggregation into dashboard reports.

Import mobile dashboards

Use the IBM Tealeaf cxView Report Manager to bring the mobile event reports and dashboard that you downloaded into the system.

- See "Importing and Exporting Reports" in the *IBM Tealeaf cxView User Manual*.

Update the Event Values Lists with the latest User Agent data

Event Value Lists are used to display the different browser types, mobile devices, and platforms. The `UAValueListCreator.exe` tool creates these values lists, which you can then import to the system.

- See "User Agent Tools" in the *IBM Tealeaf cxImpact Administration Manual*.

Integrate IBM Tealeaf CX Mobile with your mobile applications

IBM Tealeaf CX Mobile for Mobile App includes a set of Logging Frameworks, which are deployed by your developers with mobile native applications served to your customers. The logging frameworks are used to capture and submit events to IBM Tealeaf.

When deployed and enabled, the Tealeaf Logging Frameworks capture user interface events, application events, and properties. The Tealeaf Logging Frameworks submit the events and properties in batches to IBM Tealeaf for capture. The information can be captured as a single screen capture or as an HTML representation with information related to multiple screens. In this manner, you can closely monitor a predefined set of events or customize your own events on the application and how users interact with it.

Data that is submitted to Tealeaf is decoded in the Windows pipeline by using a specialized session agent. The data is then available for search and reporting as data inserted into the request.

IBM Tealeaf provides the following Logging Frameworks.

- See the *IBM Tealeaf CX Mobile iOS Logging Framework Guide*.
- See the *IBM Tealeaf CX Mobile Android Logging Framework Guide*.

Chapter 2. Search and Replay for mobile web sessions

Like desktop browser sessions, Tealeaf mobile user sessions can be replayed through Browser-Based Replay in the Portal.

Browser-Based Replay replays the visitor experience with your web application. Screen size is adjusted to account for the smaller displays. JavaScript capabilities are curtailed to match the capabilities of mobile device browsers. Other characteristics of the mobile browser are also applied to the replay view in BBR.

- If UI Capture is deployed, orientation changes, scroll events, and other user interface events are represented in replay. See "User interface events captured from mobile browsers in BBR" on page 19.

Through mobile replay, Tealeaf users can identify problem areas in the web application's presentation to visitors to improve it and resolve disputes.

Identify mobile web sessions from mobile devices

Tealeaf uses user agent information to identify sessions that are experienced with a mobile browser. The user agent information is submitted in each request by the browser to a web server. This capability is enabled by default for fixed user agents, such as desktop browsers. For mobile devices, more configuration is required, and a standard that is known as WURFL is used.

How the user agent information is used

When a hit is processed through the Canister, the Windows pipeline scans the request for the user agent information. The user agent information is then matched up against a public standard of known mobile devices.

If a match for the user agent is found in the WURFL standard, more information about the device from WURFL is inserted into the request of each hit. This information includes the screen resolution and JavaScript capabilities of the mobile browser.

Example of [ExtendedUserAgent] section of a request

This information is inserted into the [ExtendedUserAgent] section of the request.

In this example, the TLT_TRAFFIC_TYPE=MOBILE name-value pair indicates that Tealeaf Reference session agent is successfully matched the TLT_BROWSER against the WURFL public standard for mobile user agents.

```
[ExtendedUserAgent]
TLT_BROWSER=Openwave Mobile Browser
TLT_BROWSER_VERSION=Openwave Mobile Browser6.2
TLT_BROWSER_PLATFORM=
TLT_TRAFFIC_TYPE=MOBILE
TLT_BROWSER_JAVASCRIPT=false
TLT_BROWSER_COOKIES=true
TLT_BRAND=LG
TLT_MODEL=LG MX510
TLT_SCREEN_HEIGHT=220
TLT_SCREEN_WIDTH=176
```

```
TLT_COLOR_DEPTH=65536
TLT_PICTURE_SUPPORT=true
TLT_VIDEO_SUPPORT=false
TLT_STREAMING_SUPPORT=false
```

Use the example code to search for mobile sessions

Using the [ExtendedUserAgent] section of the request, you can search for mobile sessions. To improve search performance, create and use event objects through the Tealeaf Event Manager to identify mobile visitors.

You can use the `Traffic Type` hit attribute and dimension to design a search for mobile device sessions:

1. Tealeaf provides a `Traffic Type` hit attribute to scan the request for the value of the `TLT_TRAFFIC_TYPE` variable name. For example, the value for this hit attribute for the hit is `MOBILE`.

2. The hit attribute is used to populate the dimension `Traffic Type`, which can be used as a criterion for an event search term. For example, you can search for specific events where the Traffic Type dimension value is `MOBILE`. Searches of this type return all sessions in which the event occurred when the Traffic Type dimension indicated that it was a mobile session.

3. To locate mobile sessions, you search for an event that occurs in every session, such as `Hit Count`, which is also associated with the `Traffic Type` dimension. Whenever that event fires, the value of the `Traffic Type` dimension is also recorded with the event data in the request.

4. The combination of `event=Hit Count` and `dimension=Hit Count` and `dimension_value=MOBILE` is then used to locate sessions that Tealeaf identified as being sourced from a mobile device.

- For more information about searching for mobile sessions, see "Search for mobile visitors or sessions."

Search for mobile visitors or sessions

The ability to search for mobile sessions requires that extended user agent parsing is enabled in the Tealeaf Reference session agent that is deployed in your pipeline. Some search capabilities rely on other Tealeaf CX platform components.

- See "Tealeaf Reference Session Agent" in the *IBM Tealeaf CX Configuration Manual*.
- See Chapter 3, "Search and Replay for Mobile Apps," on page 21 to search for mobile sessions from native applications.
- See "Searching for Visitors" in the *IBM Tealeaf cxResults User Manual* to search for mobile visitors. cxResults is a separately licensable component of the Tealeaf CX platform. For more information, please contact your IBM Tealeaf representative.

Searching for mobile sessions by Traffic Type

Use traffic type to search for mobile sessions.

1. From the Portal menu, select **Search** > **Completed Sessions**.
   - You can select **Active Sessions** or All Sessions. These search options are available for those types of searches, as well.
   - See "Searching Session Data" in the *IBM Tealeaf cxImpact User Manual*.

2. Select the **Completed** search template, if it is not selected already.

3. From the **Search Scope**, select **AND - Same Session**.

4. In the search pane, click **Event Values**.

5. Click **<Select an event**. In the Event Selector, select `Hit Count`.
6. Next, select the >= value from the drop-down. Enter the value 2.
7. In the **Search** pane, click **Events**. A second search term is added.
8. In the **Events** pane, Click **<Select an event**. In the Event Selector, select `Hit Count`.
9. Click **Any Dimension**.
10. In the Dimension Selector, select `Traffic Type` and click **Select**.
11. The Dimension Value Selector is displayed. Select `Mobile`.

    Note: If you have Tealeaf license and deployed a Tealeaf client framework to capture session data from mobile native applications, you can search for sessions of those types by selecting the value `Mobile_App` from the Dimension Value Selector. See "Integrating Client Framework Data into Tealeaf" in the *IBM Tealeaf Client Framework Data Integration Guide*.
    - Click **Select**.
12. The search screen look like:

    Portal Search Configured to Find Mobile Sessions
13. Click **Search**.
14. Results are displayed in a session list.
    - See "Searching Session Data" in the *IBM Tealeaf cxImpact User Manual*.

Replay

Mobile Replay overview

You can replay visitor sessions that were experienced through mobile devices through Browser-Based Replay through the Tealeaf Portal.

IBM Tealeaf UI Capture can provide better dimensions. Therefore, it is recommended to have UI Capture installed for better replay of mobile sessions.
- The Chrome renderer must be enabled. See "Configuring the Replay Server" in the *IBM Tealeaf CX Configuration Manual*.

Browser-based replay

Sessions that are requested by a BBR user are passed by the Replay Server to a renderer that is appropriate for the source of the session. For example, Firefox sessions are passed to the Gecko renderer, while Chrome/WebKit sessions are passed to the Chrome renderer.

For BBR, sessions that are delivered for replay are rendered on the Replay Server. This content is delivered to Tealeaf user's browser and rendered in an iframe inside of that browser.

Browser-specific styling cannot be appropriately applied to sessions that are delivered to a different type of browser. For example, WebKit-specific styles cannot be applied to a session that is rendered for and delivered to a Firefox browser.

For more information about BBR, see "CX Browser Based Replay" in the *IBM Tealeaf cxImpact User Manual*.

Mobile skin

A mobile license is required for the mobile skin to show in the Mobile Replay.

IBM® Tealeaf receives mobile dimensions from two sources, IBM Tealeaf UI Capture and WURFL. WURFL is used as a fallback if UI Capture is not installed. If both sources are missing, there is no data to render the mobile skin. A default dimension is applied and you see the skin with no page inside.

Limitations in Replay of mobile visitors

Replay of mobile visitor sessions works best for web pages that are designed for a mobile platform. These web pages are designed to fit the smaller screens of mobile devices and work well within the limitations of the device.

For more information about replay for mobile native applications, see Chapter 3, "Search and Replay for Mobile Apps," on page 21.

Personal computer designed web pages

Replay of web pages that are targeted for personal computers can vary widely from the actual experience. Many cell phones and cell phone networks modify the web page to best fit the display. Typical modifications include collapsing of frames, restructuring of tables, and resizing of images.

Because these modifications are specific to the device or network, Tealeaf does not attempt to emulate these behaviors. As standards improve for presentation of content that is targeted for personal computer screens delivered to small mobile screens, Tealeaf improves this emulation.

Mobile browser designed web pages

Replay of sessions for mobile devices that are captured from web applications that are designed for mobile browsers is likely to feature improved performance and visual display. However, if the content is delivered for a mobile-only device, there can be visual discrepancies in the replay, due to differences in the rendering and display issues of the browser controllers that are used in BBR.

Depending on the pixel density of the device and the pixel density of the monitor on which you are viewing the replay, the physical size of the displayed image cannot match the original image.

For Android devices, if the width or height is fewer than 320 pixels, the image is not scaled.

Limitations for unlicensed components

When IBM Tealeaf CX Mobile module is not licensed, the following limitations are applied to replay of mobile-based sessions:

- No display of mobile-specific events, such as scroll and touch
- No display of mobile device data during replay
- No use of a mobile skin (Extended user agent parsing is also required.)
- No display of device orientation changes
- No resizing of the screen to the mobile browser dimensions

The underlying data is captured independent of the license; enabling the license allows mobile-based replay of already captured sessions. See Chapter 1, "IBM Tealeaf CX Mobile," on page 1.

Android-based device Replay limitations

Some mobile replay limitations are because of the basic differences between mobile web design and desktop web design. Some mobile replay limitations are device-based.

Android-based device Replay limitations include:

- Android-based devices can screen capture the main window but cannot capture pop-up windows.
- For hybrid applications, screen capture can be captured in a random order, and some screen capture can be missing due to timing issues.
- Clicks of the device buttons are not captured by the Android logging framework.
- When an Android-based web browser is minimized, the application is slept, instead of killed. As a result, session identifiers are not renewed when the application is reawakened, and the same session identifier can be used for what are two separate visitor sessions. When hits from this visitor's sessions are gathered into Tealeaf, the session data is mixed under a single session identifier. For more information about debugging this issue, see "Tealeaf Android Logging Framework Installation and Implementation" in the *IBM Tealeaf Android Logging Framework Guide*.

BBR configuration

You can configure the BBR by using following steps:

Configuring BBR to auto-resize the screen for user groups

Through the Portal Management page, Tealeaf administrators can configure BBR replay to auto-resize according to the screen of the visitor's device for Tealeaf user groups.

1. Log in to the Tealeaf Portal as an administrator.
2. In the **Portal** menu, select **Tealeaf** > **Portal Management**.
3. In the left pane, click **CX User Administration**.
4. Click **Groups**.
5. Select the group.
6. Click **Browser Replay Profile**.
7. Select the **Resize Replay** pane to **Match Session** check box.
8. Click **Save**.

Resizing the BBR replay screen for a session

When a session is selected for replay in BBR, you can resize the display window that is based on the information that is provided by the visitor's browser.

In BBR, select **Options** > **Options** > **Resize Replay Pane to Match Session**. If device window size information is available in the user agent data for the
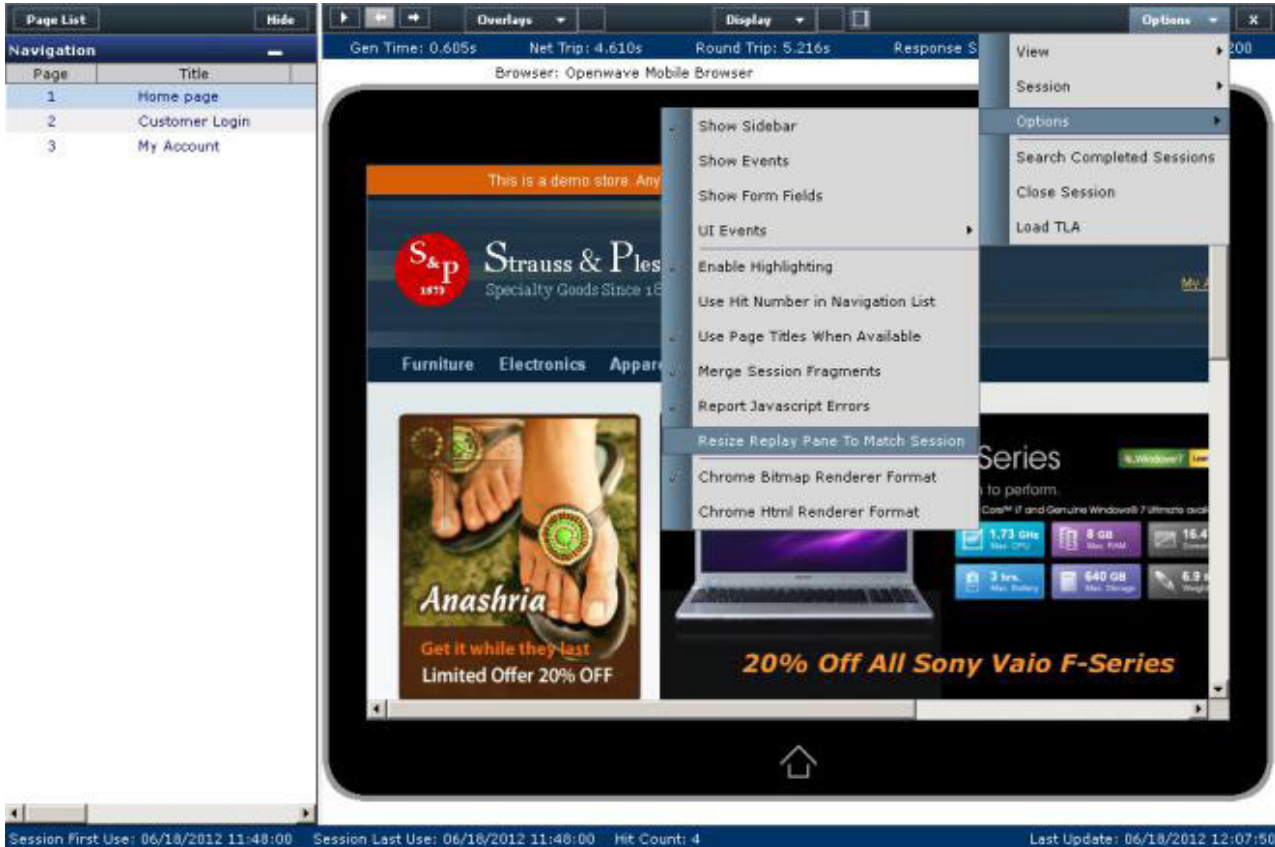
Figure 1. BBR options for mobile devices

visitor's browser, then that window size is applied to BBR.

Replaying mobile sessions

You can replay mobile sessions by using the same controls to replay desktop sessions.

During the replay, you can resize the window based on the visitor's browser. For more information about resizing the window that is based on the visitor's browser, see "Resizing the BBR replay screen for a session."

1. In the Sessions List, select the session to replay.
   - If you searched by visitor, click the **Sessions** link next to the appropriate results in the Visitors List.

Figure 2. Searching for Mobile Sessions in BBR

2. To replay, click the **Camera** icon ( ).
3. In the Replay Session dialog, click **Browser**.
4. BBR is opened to replay the session.
5. For more information about resizing the window that is based on the visitor's browser, see "BBR configuration" on page 15.
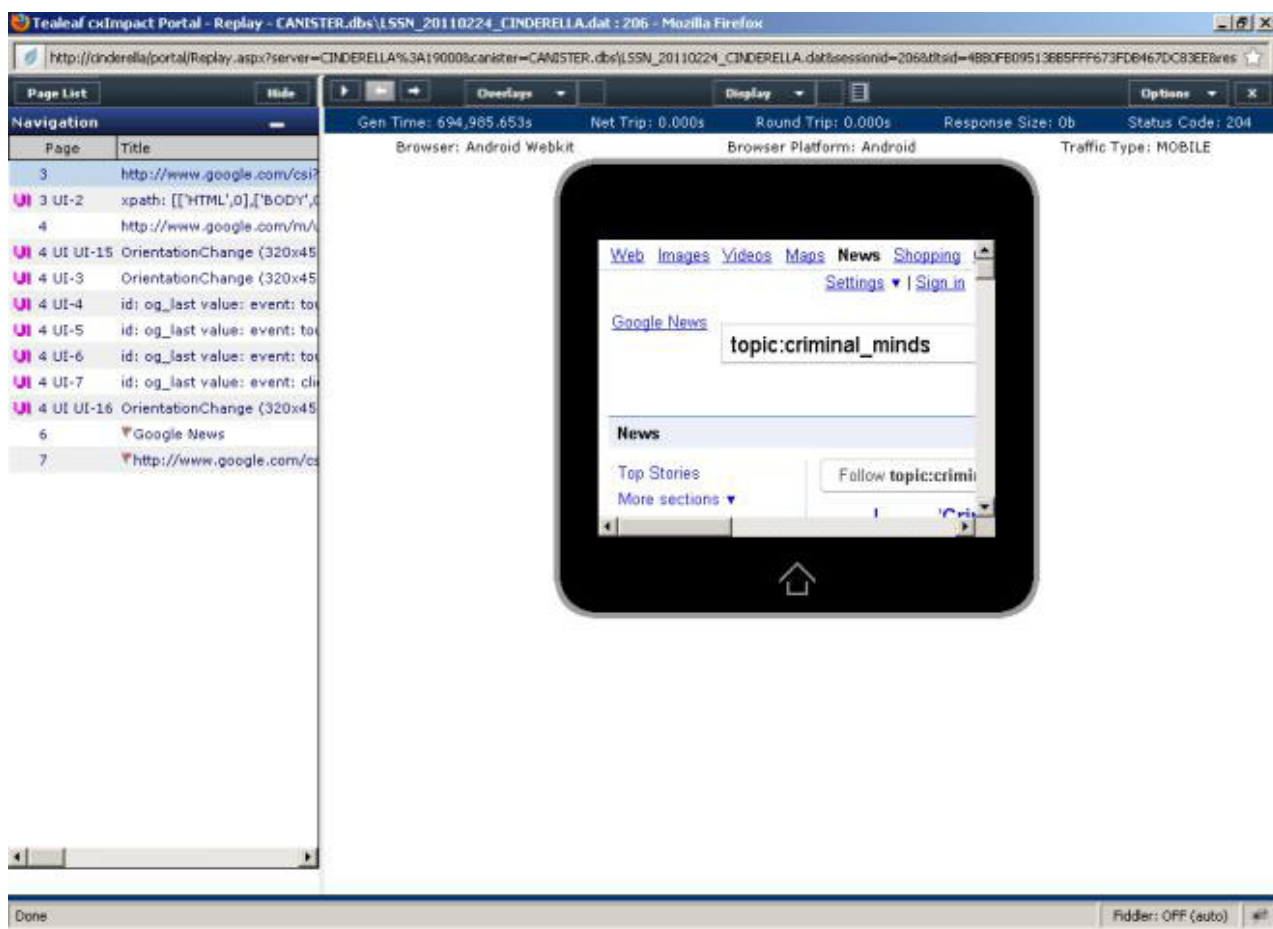
Figure 3. BBR replay of a mobile device

For more information about Browser-Based Replay, see "CX Browser Based Replay" in the *IBM Tealeaf cxImpact User Manual*.

- If UI Capture is licensed and deployed, more UI events are displayed during replay. See "User interface events captured from mobile browsers in BBR" on page 19.

User agent information shown above title bar in the BBR pane

User agent information is inserted in a title bar above the replay pane.

This information is available only if the IBM Tealeaf CX Mobile module is licensed and properly configured. See "Configuring Tealeaf for Mobile Visitors" in the *IBM Tealeaf CX Mobile Administration Manual*.

This table lists and describes the item and the source Request field:

Table 2.

Item	Source Request field	Description
Browser	TLT_BROWSER	Visitor browser type • This value is also available in the Tealeaf System Hit Attribute Browser. See "TEM Hit Attributes Tab" in the *IBM Tealeaf Event Manager Manual*.
Browser Platform	TLT_BROWSER_PLATFORM	The mobile device platform
Browser Major Version	TLT_BROWSER_VERSION	The version X.0 of the browser
Traffic Type	TLT_TRAFFIC_TYPE	The type of traffic, as identified by extended user agent parsing • This data is also captured in the Traffic Type dimension. See "TEM Dimensions Tab" in the *IBM Tealeaf Event Manager Manual*.
Replay Renderer		The type of renderer that is used by Replay Server to render the session • The type of renderer is determined by the configured renderer types and the browser from which the session was originally experienced. See "Configuring the Replay Server" in the *IBM Tealeaf CX Configuration Manual*.

Information shown in replay pane for mobile session

The BBR replay pane is rendered at the screen dimensions reported by the mobile browser.

If no screen information is shown in the title bar for a mobile session, the screen dimension data was not inserted into the request by the Windows pipeline session agent. This omission typically occurs when the mobile browser cannot display JavaScript or that feature is disabled.

More configuration is required. See "BBR configuration" on page 15.

Screen Dimensions for Mobile Devices

BBR and RTV have multiple mechanisms for evaluating the screen dimensions as reported from the mobile device.

1. If UI Capture is deployed and is submitted UI events to Tealeaf for capture, then the screen dimensions that are used in replay are taken UI events that are captured in first hit of the session in replay from the browser of the mobile device.

2. If UI Capture is not deployed or if UI events are not reported and captured in the first hit, then screen dimensions are taken from the WURFL standard for the device that is used by the visitor.

   Note: Since the device and the browser for the device can not report the same values, it is possible that replay of a session by using the screen dimensions reported by WURFL can not exactly match the dimensions of the captured session.

3. If neither of the methods yields values for the screen dimensions, BBR and RTV set the screen dimensions during replay to the full, normal replay size.

User interface events captured from mobile browsers in BBR

If UI Capture is deployed, user interface events that are captured from mobile browsers are displayed in the Viewable Pages List in BBR.

- See the *IBM Tealeaf UI Capture for j2 Guide*.

  Replay of scroll events that are captured by UI Capture is supported for mobile sessions only in BBR.

In addition to actions such as clicks, gestures such as pinching and zoom in and zoom out are displayed in BBR.

When the orientation changes in the session, the mobile skin is displayed along the new axis in BBR.

Troubleshooting

This section contains some basic troubleshooting information for replay of mobile visitor sessions.

Traffic Type is not populated

You are trying to replay a mobile session in BBR and the Traffic Type values is set to ????

In this case, mobile replay cannot be properly configured. Support for mobile replay requires a separate installation and configuration and is not enabled by default. You cannot download, install, and convert the public standard WURFL.csv for use in Tealeaf.

Use of WURFL conversion tools is a component of CX Mobile, a separately licensable component of the Tealeaf CX platform. For more information, please contact your IBM Tealeaf representative.

- See "Configuring Tealeaf for Mobile Visitors" in the *IBM Tealeaf CX Mobile Administration Manual*.

UI Events are not displayed in mobile session replay

You do not see UI events in a mobile session replay.

If you do not see UI events in a mobile session replay, check the request of any hit in the session to see whether `TLT_BROWSER_JAVASCRIPT=false` is in the `[ExtendedUserAgent]`.

The UI Capture JavaScripts required to capture and submit UI events cannot run for a session if a visitor's browser:

* does not support JavaScript
* is not configured to enable JavaScript to run
* See "Browser Based Replay Interface" in the *IBM Tealeaf cxImpact User Manual*.

Chapter 3. Search and Replay for Mobile Apps

Mobile app sessions can be captured and replayed as screen captures for visual review and data analysis.

IBM Tealeaf CX Mobile Android Logging Framework and IBM Tealeaf CX Mobile iOS Logging Framework can be enabled to capture native mobile app data.

Sessions can be captured as HTML representations with information related to multiple screens. Sessions that are rendered through HTML representation of the native mobile session can be replayed only in Browser Based Replay.

For all sessions sourced from mobile native applications, you can search through the Portal to locate them.

Define the attributes and event objects to capture

Before you can search for attributes and event objects, you must configure the attributes and event objects you want to capture. You can capture important data from your mobile native applications.

- See "Integrating Client Framework Data into Tealeaf" in the *IBM Tealeaf Client Framework Data Integration Guide*.

Replaying mobile app sessions through JSON requires configuration of the IBM Tealeaf Logging Framework.

- CX Mobile Android Logging Framework: See "UPDATE TITLE HERE" in the *IBM Tealeaf CX Mobile Android Logging Framework Guide*.
- CX Mobile iOS Logging Framework: See "UPDATE TITLE HERE" in the *IBM Tealeaf CX Mobile iOS Logging Framework Guide*.

Identify mobile app sessions with `Mobile Device`

Mobile app session data from mobile native applications has specific information in the HTTP header. The header information identifies the device, framework, and version of the capturing framework.

Haader information

In session data, sessions that are generated from mobile native applications are identified by the following request variable, which is inserted into the HTTP header:

```
HTTP_X_TEALEAF=device (<framework>) Lib/<version>
```

Where
- `device` = a hardcoded string
- `<framework>` = `iOS` or `Android`
- `Lib/` = a hardcoded string
- `<version>` = the version number of the capturing framework

For JSON-based versions of UI Capture, the header value is `UIC` in the format:

```
HTTP_X_TEALEAF=device (<framework>) Lib/<version>
```

Where
- device = a hardcoded string
- <framework> = iOS or Android
- Lib/ = a hardcoded string
- <version> = the version number of the capturing framework
- For XML-based versions of UI Capture, the header is the following exactly: HTTP_X_TEALEAF=ClientEvent

Mobile Device Type hit attribute

For all client framework sessions, the header information is detected by the Mobile Device hit attribute. This hit attribute detects the values for the <framework> value.

Mobile Device dimension

The values that detected by using the Mobile Device hit attribute are recorded to the Mobile Device dimension.
- If the Mobile Device Type hit attribute is found, the Mobile Device building block event is triggered. This event is used only to record the values into this dimension.

These values can be recorded:

Dimension Value
> **Description**

iOS Indicates a session that is captured from an iOS device by the IBM Tealeaf CX Mobile iOS Logging Framework

Android
> Indicates a session that is captured from an Android device by the IBM Tealeaf CX Mobile Android Logging Framework

null value

> **Note:** For any other session, including sessions that are captured from IBM Tealeaf CX UI Capture j2, a null value is recorded.

Associated events

The Mobile Device dimension is pre-configured to be included in the Traffic Type report group. This report group is associated with a number of events that are provided by Tealeaf. When those events are triggered, values for the Mobile Device dimension are recorded as soon as the installation or upgrade is completed.
- The Page Count event is used as an example event for locating sessions by using this dimension. This event occurs once per session at the end of the session, which provides the means of scanning all sessions for this dimension value.

  The Page Count event is evaluated at the end of the session. It cannot be used as a means of locating mobile native application sessions among your active sessions because the event not yet fired in active sessions.
  - You can use the Mobile Device dimension to locate active sessions. To locate active sessions, associate the dimension or one of its report groups with an event that occurs on the first hit of the session, every hit, after every hit, or any step-based trigger.

You can use the Report Builder to identify the events with which a dimension is associated. See "Tealeaf Report Builder" in the *IBM Tealeaf Reporting Guide*.

- You can associate the `Traffic Type` report group with other dimensions or the `Mobile Device` dimension with other report groups to expand access to this segmenting information.

- For more information about associating dimensions and report groups with events, see "TEM Events Tab" in the *IBM Tealeaf Event Manager Manual*.

Search session data

You can use the Tealeaf Portal to search session data.

- For more information about portal search in general, see "Searching Session Data" in the *IBM Tealeaf cxImpact User Manual*.

Searching sessions in the Portal by dimension value

Using the provided event objects, you can search for completed sessions from mobile native applications through the Portal.

This example uses an event that is calculated on each session but not until the end of the session. So, this example cannot be used to find all instances among active sessions. To locate active sessions, you must select a different event, which occurs on every hit.

1. Log in to the Portal.
2. From the Portal menu, select **Search** > **Completed Sessions**.
3. Specify the template and Search Range as needed.
4. To remove any fields in the search panel, click the **X** icon in the upper-right corner.
5. In the left panel, click the **Events category**.
6. The **Events** search field is added to the search panel.
   - If this field is not available, you must select a different search template. See "Searching Session Data" in the *IBM Tealeaf cxImpact User Manual*.
   - If no search template contains this field, it must be added to at least one search template. See "Configuring Search Templates" in the *IBM Tealeaf cxImpact Administration Manual*.
7. Optional: Search for the occurrence of specific events and dimension values. In this example, the provided Tealeaf event `Page Count` is used, and the `Mobile Device` dimension is already associated with it.
   - For more information about creating events to track mobile native application data, see "Integrating Client Framework Data into Tealeaf" in the *IBM Tealeaf Client Framework Data Integration Guide*.
   a. Click **<Select an event**.
   b. In the **Event Selector**, open the Tealeaf Standard Events label.
   c. Select the **Page Count** event. Click **Select**.
   d. The `Page Count` event is selected.
   e. Click **Any Dimension**.
   f. In the Dimension Selector, select the `Mobile Device` dimension.
      If the `Mobile Device` dimension is not available, the report group that contains it (`Traffic Type` report group) is not associated with the event that you selected to use.

g. In the Dimension Value Selector, select either `Android` or `IOS` depending on the type of session for which you are searching.

h. Click **Select**. The dimension value is selected as part of the search term.

8. Optional: Search for sessions from one of multiple mobile native application frameworks:

a. Change the Search Scope value to `OR - Any Session`.

b. Repeat the steps to add the `Page Count` event by using the `Mobile Device` dimension.

c. For the dimension value, select a different mobile native application type.

9. Optional: Search for sessions that are initiated from either iOS or Android devices. Set your search page to look like:

Figure 4. Portal Search - Event + Dimension Value search terms

10. Optional: Modify your search as needed.

Set the Search Range to be as narrow as possible to locate the necessary sessions.

11. When you are ready to search, click **Search**. Results are displayed in the default session list. See "Search Results"

Search Results

After your search results are returned, they are displayed in the default session list template that is associated with the search template that you used.

This diagram shows the Portal Search Results for a search for all mobile sessions.
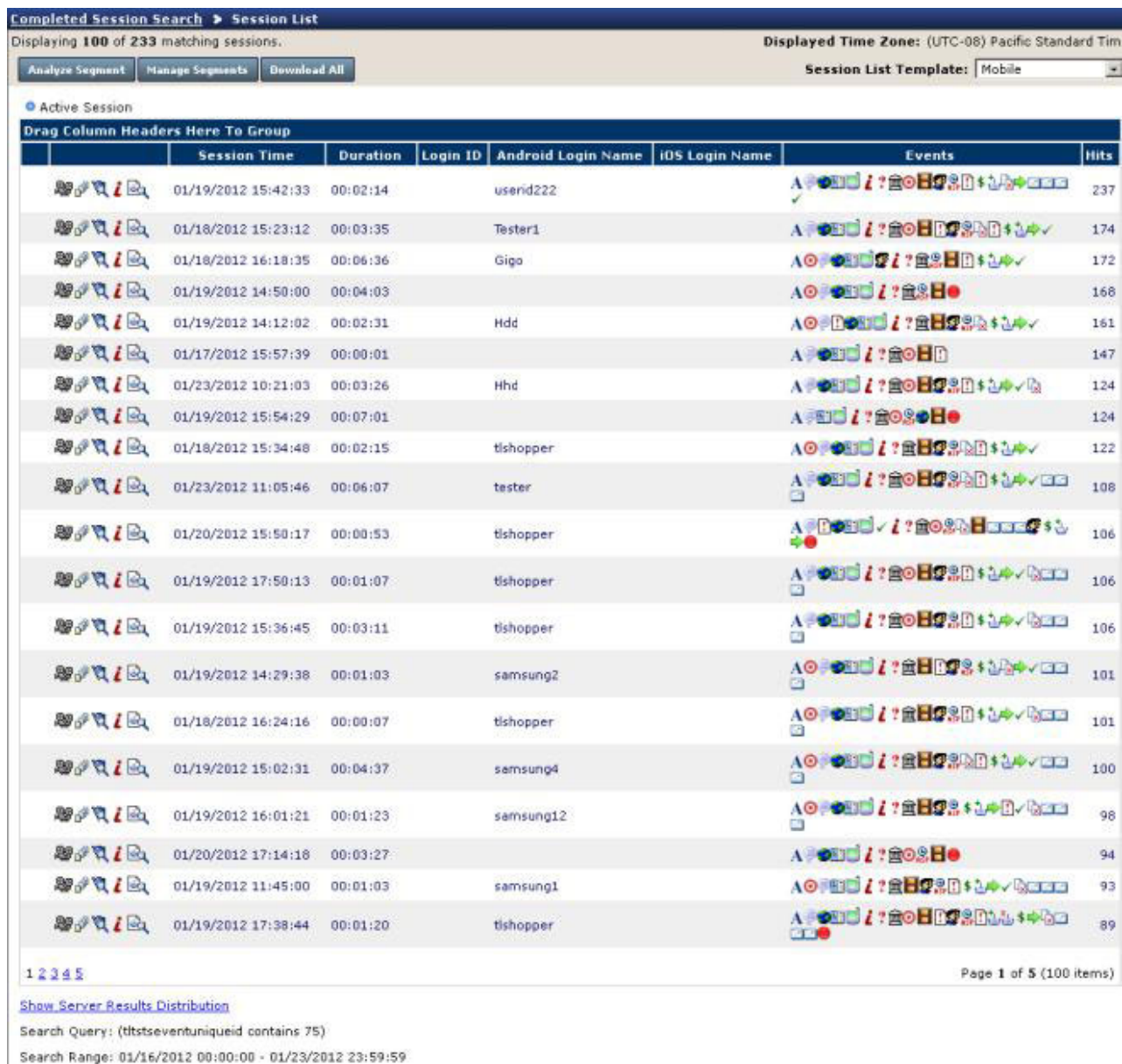
Figure 5. Portal Search - Search Results

The session list includes columns for the user identifier that is captured by each of the deployed Logging Frameworks.

- For more information about configuring search templates, see "Configuring Search Templates" in the *IBM Tealeaf cxImpact Administration Manual*.

This table lists and describes the available commands:

Table 3. Search Results.

Command	Icon	Description
Replay		Displays the session in the browser. See "Replay mobile app sessions as screen captures" on page 28.

Table 3. Search Results (continued).

Command	Icon	Description
Page List		View the page list for the session. See "Searching Session Data" in the *IBM Tealeaf cxImpact User Manual*.
QuickView		Open session QuickView, where you can review the event and dimensional data for every event that was triggered in the session. See "Searching Session Data" in the *IBM Tealeaf cxImpact User Manual*.
Session Info		View session properties. See "Searching Session Data" in the *IBM Tealeaf cxImpact User Manual*.
Send to Event Tester		Send the selected session to the Event Tester as sample data. See "Event Tester" in the *IBM Tealeaf Event Manager Manual*.

See "Searching Session Data" in the *IBM Tealeaf cxImpact User Manual*.

Replay Mobile App Sessions as HTML web sessions

The HTML representation method replays a mobile app session in Browser Based Replay as it would an HTML web session. Without the HTML representation method, you would view the mobile app session as a series of screen captures.

Advantages

There are several advantages to using the HTML representation method to replay mobile app session over screen captures.

- Ability to mask private information
- Ability to draw user interactions (UI events) onto the HTML pages that are created from the JSON data
- Smaller data size

JSON data

The HTML Representation method uses JSON data that is captured by the CX Mobile Logging Frameworks to create a collection of HTML pages. Each page is a collection of UI events within a JSON string. When the Replay Server finds a hit with a JSON string:

- Type 10 messages are converted into HTML through a template engine to render the collection of HTML pages that represent the mobile app screens
- Type 4 messages that follow a Type 10 message are filtered to produce associated UI Events that are visible in the Navigation List

The message breakdown provides you with a deeper insight into your mobile app sessions.

Templates

The templates that are used by the template engine can be customized to meet your business needs. To configure your templates, contact IBM Tealeaf Professional Services or see "Native app session replay customization in the *IBM Tealeaf CX Configuration Manual.*

Naming conventions

When you replay a mobile app session and use a Tealeaf Target page that does not match the naming convention of `TealeafTarget.*`, you might see native UI events that are associated to your unconventional Tealeaf Target pages when they belong to an earlier page. To avoid this association, create an Ignore URL replay rule to filter your unconventional Tealeaf Target pages out of the Navigation List.

Configuration

Replaying mobile app sessions through HTML representation requires configuration of the IBM Tealeaf Logging Framework.

- CX Mobile Android Logging Framework: See "Log Screen Layout for Android Mobile App Replay" in the *IBM Tealeaf CX Mobile Android Logging Framework Guide*.
- CX Mobile iOS Logging Framework: See "Log Screen Layout for iOS Mobile App Replay" in the *IBM Tealeaf CX Mobile iOS Logging Framework Guide*.

Note: If you replay a mobile app session with no CX UI Capture j2 data, the mobile skin might be large. The large mobile skin is because IBM Tealeaf did not receive any data from CX UI Capture j2. When there is no CX UI Capture j2 data, User Agent data is the fallback. The User Agent data might not be a correct or normalized properly.
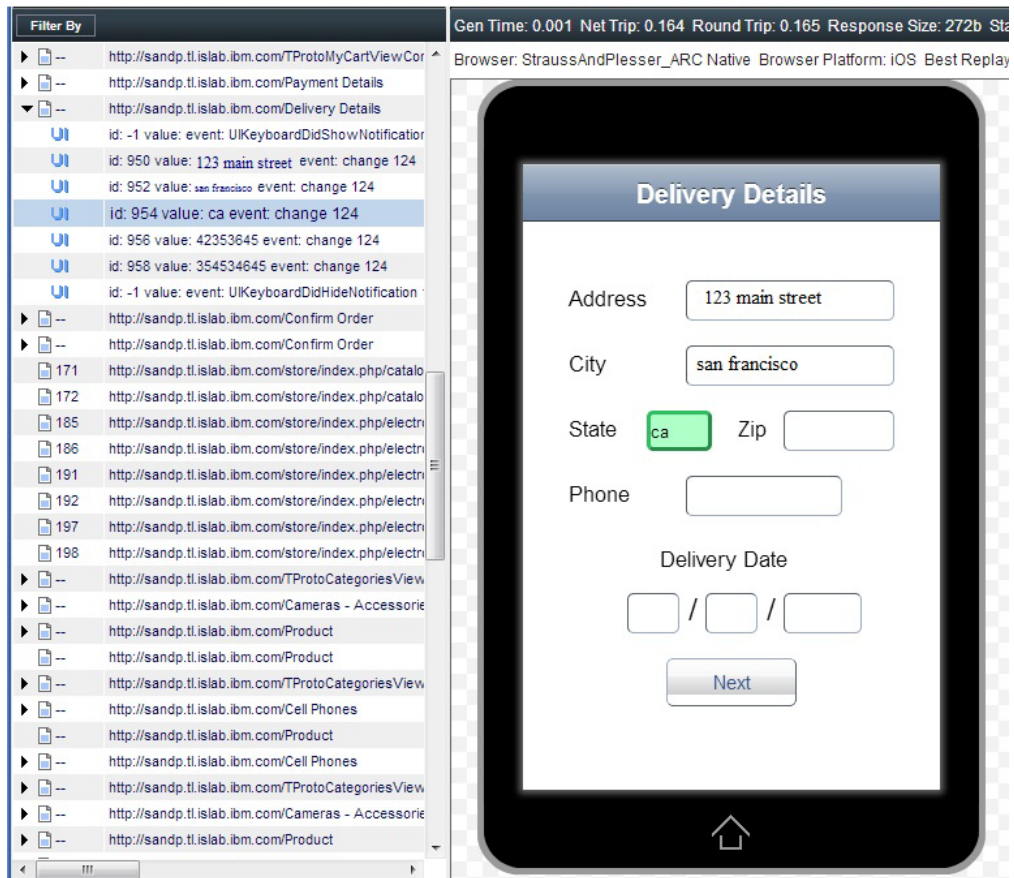
HTML Representation limitations

When replaying HTML representations of sessions that are generated from Android apps, there are often empty target pages in the **Navigation List**. During rendering, the target pages are converted to ScreenViews and UI Events. However, the original target pages remain in the **Navigation List** and appear as empty pages.

You can use the Ignore URLs rule to remove any of these original pages from the **Navigation List** that are not required.

To remove these original pages from the **Navigation List**, right-click the target.php page in the Navigation list, and click **Remove this page from Replay**.

The Ignore URLs rule does not work on sessions that are generated from iOS apps.

Replay mobile app sessions as screen captures

You can replay sessions with mobile app screen captures in Browser Based Replay.

Screen capture requires configuration of the IBM Tealeaf Logging Framework.

- Android Logging Framework: See the *IBM Tealeaf Android Logging Framework Guide*.
- iOS Logging Framework: See the *IBM Tealeaf iOS Logging Framework Guide*.
- "BBR session replay" on page 30

Replay screen capture limitations

As the visitor steps through different views of the native application, a screen capture can be captured and submitted to Tealeaf for display. During display of mobile native apps, static screen captures of each view are displayed.

Screens are captured as soon as the view is initialized and before data is populated in any fields. It limits the exposure of sensitive data to Tealeaf.

For Android-based sessions, images that are captured from the web server are stored at the beginning of the session. Images that are captured from the local instance of the native application are stored in the appropriate locations throughout the session.

Mobile native application sessions are not replayed by using the mobile skin.

There is a known issue in which the PCA fails to properly recognize UTF-8 encoding in data that is submitted from client frameworks. The data can be mangled in the stored session, causing issues in eventing and search.

Attention: The following information applies to IBM Tealeaf version 9.0A only. 9.0A can properly recognize UTF-8 encoding in data that is submitted from client frameworks.

User agent requirement

The user agent string must match a user string in the public standards that was deployed into your Tealeaf solution.

Your client framework must be configured to report a user agent string in the `HTTP_USER_AGENT` request header. If the framework is configured differently, the extended user agent parsing information that is displayed in BBR is reported as unknown in the toolbar at the top of replay view.

- Capture of user agent information requires more configuration. For more information about user agent detection, see "Managing User Agents" in the *IBM Tealeaf cxImpact Administration Manual*.

How browser-specific features are rendered in BBR replay

Sessions that are requested by a BBR user are passed by the Replay Server to a renderer that is appropriate for the source of the session. For example, Firefox sessions are passed to the Gecko renderer, while Chrome/WebKit sessions are passed to the Chrome renderer.

To render sessions that are captured from mobile devices for display in the web browser, the Tealeaf Replay Server uses an embedded renderer that is based on the Chromium engine. For best results in replay of mobile-based sessions, Tealeaf recommends that you use the Chrome browser in Browser-Based Replay.

The Chrome renderer must be enabled. See "Configuring the Replay Server" in the *IBM Tealeaf CX Configuration Manual*.

Browser-specific styling cannot be appropriately applied to sessions that are delivered to a different type of browser. For example, WebKit-specific styles cannot be applied to a session that is rendered for and delivered to a Firefox browser.

Image capture screen dimensions for mobile devices

If the IBM Tealeaf CX Mobile license and extended user agent parsing is enabled, captured images are displayed in the screen dimensions that are used on the mobile device.

This device is the same device from which the native application session was captured.

For mobile native application sessions, image display is determined by the Logging Framework, which always screen captures the currently configured resolution for the device. The dimensions cannot be configured in BBR for mobile native application sessions.

For the Android logging framework, the screen capture's dimensions are represented in the left navigation bar, and the image is resized in BBR. If the Android device has a width or height fewer than 320 pixels, the image is not scaled.

- For more information about extended user agent parsing, see "Managing User Agents" in the *IBM Tealeaf cxImpact Administration Manual*.

BBR session replay

In BBR, you can review screen images by selecting the appropriate items in the Navigation List. These entries signify that a new view is loaded but not populated with data yet.

This diagram shows the Navigation List:
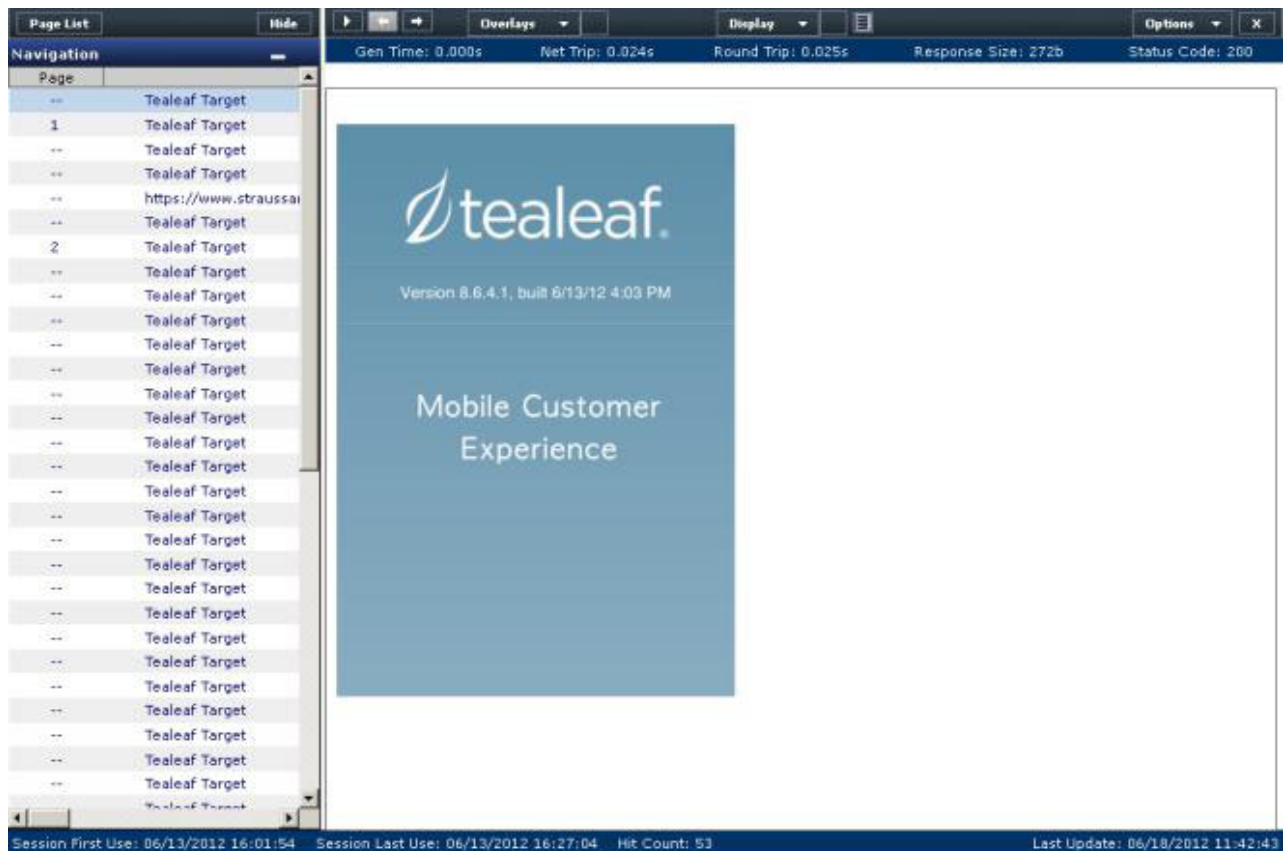
Figure 6. Mobile Native Application - BBR Session Replay

In the Navigable Pages List, mobile native application views and user interface changes are not numbered.

For more information on Browser Based Replay, see "CX Browser Based Replay" in the *IBM Tealeaf cxImpact User Manual*.

Interaction timing

If your mobile native application enables web-based interactions with a web server that is monitored by Tealeaf, these web interactions are transmitted as soon as they occur.

Mobile native application interactions are batched and submitted periodically. They are timestamped by the PCA after web interactions, which are submitted in real time. During replay, the web interactions can be listed and displayed before the mobile native application interactions that occurred beforehand. This issue is addressed in a later build.

Depending on how data is captured by the Logging Framework and client application, user data can be available in the Navigable List entries between the screen capture entries.

Recommended Browser-Based Replay configuration

For best results in displaying sessions through BBR, IBM Tealeaf recommends specific configuration settings in BBR.

Options that are not referenced here can be specified based on your Tealeaf environment.

Table 4. BBR configuration. This table lists and describes the recommended BBR configuration settings.

Setting	Value	Notes
View > **User Agent Info**	Do not select.	By default, user agent information is not populated for mobile native applications. See "Tealeaf Reference Session Agent" in the *IBM Tealeaf CX Configuration Manual*.
Options > **Page Numbering** > **Use Hit Numbers**	Select.	When the list of pages is displayed by hit number, then items are numbered in the following format: `<Letter><Index>` where: • `<Letter>` corresponds to an alphabetical letter, each of which identifies a different session fragment. • `<Index>` corresponds to the index of views within an ScreenView.
Options > **Page Naming** > **Use Page Title**	Select.	When selected, you can easily see which pages are marked as `Tealeaf Target`. Some of the `Tealeaf Target` pages identify the screen captures to review. • When deselected, pages are displayed by URL, which may require you to widen or scroll the Navigable Page List to review.
Options > **Advanced** > **Merge Session Fragments**	Do not select.	Since mobile native applications are sessioned in a different manner, this option does not work for mobile native application display.
Options > **Advanced** > **Report Javascript Errors**	Do not select.	Does not apply.
Options > **Resize View to Match Session**	Do not select.	Replay pane is auto-resized to the size of the screen capture that is provided by the Logging Framework. This setting requires user agent information to apply. See "User agent requirement" on page 29.

See "CX Browser Based Replay" in the *IBM Tealeaf cxImpact User Manual*.

See "BBR Options" in the *IBM Tealeaf cxImpact User Manual*.

Chapter 4. Events for mobile visitors

Through WURFL reference data, Tealeaf can be configured to identify mobile visitors that are based on data that is stored in the request by Tealeaf. You can configure Tealeaf to detect mobile visitors and to generate events to detect them.

Enable extended user agent detection

To identify mobile visitors through WURFL reference data, you must enable User Agent Detection.

- See "Configuring User Agent Detection" in the *IBM Tealeaf cxImpact Administration Manual*.

Import CX Mobile Dashboard

The IBM Tealeaf CX Mobile module includes a suite of events for mobile visitors. These events can be imported with the Mobile Traffic Dashboard, which must be imported into your Tealeaf solution.

How mobile visitors are detected

When extended user agent detection is enabled, the data relevant to mobile devices is captured and inserted into the `[ExtendedUserAgent]` section of request by the Tealeaf Reference session agent.

The Tealeaf Reference session agent must be enabled in your Tealeaf processing pipeline.

- See "Tealeaf Reference Session Agent" in the *IBM Tealeaf CX Configuration Manual*.
- See "TMS Pipeline Editor" in the *IBM Tealeaf cxImpact Administration Manual*.

How Mobile Visitors Are Detected

When extended user agent detection is enabled, the data relevant to mobile devices is captured and inserted into the `[ExtendedUserAgent]` section of request by the Tealeaf Reference session agent.

The Tealeaf Reference session agent must be enabled in your Tealeaf processing pipeline.

- See "Tealeaf Reference Session Agent" in the *IBM Tealeaf CX Configuration Manual*.
- See "TMS Pipeline Editor" in the *IBM Tealeaf cxImpact Administration Manual*.

Information inserted into the request

When the Tealeaf Reference session agent detects a mobile session, the WURFL standard is checked and any available information is inserted into the request.

This code is an example of the `[ExtendedUserAgent]` section of request:

```
[ExtendedUserAgent]
TLT_BROWSER=Openwave Mobile Browser
TLT_BROWSER_VERSION=Openwave Mobile Browser6.2
TLT_BROWSER_PLATFORM=
TLT_TRAFFIC_TYPE=MOBILE
TLT_BROWSER_JAVASCRIPT=false
```

```
TLT_BROWSER_COOKIES=true
TLT_BRAND=LG
TLT_MODEL=LG MX510
TLT_SCREEN_HEIGHT=220
TLT_SCREEN_WIDTH=176
TLT_COLOR_DEPTH=65536
TLT_PICTURE_SUPPORT=true
TLT_VIDEO_SUPPORT=false
TLT_STREAMING_SUPPORT=false
```

How self-reporting mobile web browsers are identified

Self-reporting mobile browsers are identified in the Tealeaf Canister based on the value of the extended user agent variable.

When the [ExtendedUserAgent] variable TLT_TRAFFIC_TYPE=MOBILE value is set to MOBILE, the user agent is a mobile device. This value is used to populate the provided session attribute Browser Traffic Type, which contains the value MOBILE for these self-reporting mobile browsers.

This session attribute can then be referenced in your event definitions.

Identify mobile web applications by Traffic Type dimension

With the Android and iOS logging frameworks, you can use the Traffic Type dimension to identify sessions that were captured.

You must have licenses for these products to use the Traffic Type dimension to identify sessions:

- *IBM Tealeaf Android Logging Framework Guide*
- *IBM Tealeaf iOS Logging Framework Guide*

These client frameworks submit user agent information for capture by Tealeaf. The Tealeaf Reference session agent interprets the user agent information and populates the [ExtendedUserAgent] section, including the TLT_TRAFFIC_TYPE variable:

```
TLT_TRAFFIC_TYPE=MOBILE_APP
```

When this value is set to MOBILE_APP, the user agent is a mobile native application.

This value is displayed in the Traffic Type dimension. See "Use the Traffic Type dimension to identify sessions from self-reporting browsers" on page 50.

Request variable reference

Request variables are used in events.

This table lists and describes the request variables:

Header	Header
TLT_BROWSER	Browser type for the mobile device.
TLT_BROWSER_VERSION	The version of browsers for the mobile device.
TLT_BROWSER_PLATFORM	The operating system in use, if the device is a mobile one.
TLT_TRAFFIC_TYPE	The type of traffic for the device. Self-reporting mobile devices have this value that is set to MOBILE.

Header	Header
TLT_BROWSER_JAVASCRIPT	Does the device accept and run JavaScript? Possible values: True, False, or Unknown, which means that the data is not present.
TLT_BROWSER_COOKIES	Does the device accept cookies? Possible values: True, False, or Unknown, which means that the data is not present.
TLT_BRAND	The brand of the mobile device.
TLT_MODEL	The model name for the mobile device.
TLT_SCREEN_HEIGHT	Height of the screen in the mobile device.
TLT_SCREEN_WIDTH	Width of the screen in the mobile device.
TLT_COLOR_DEPTH	Number of colors that the device can display.
TLT_PICTURE_SUPPORT	Does the device support display of picture formats? Possible values: True, False, or Unknown, which means that the data is not present.
TLT_VIDEO_SUPPORT	Does the device support download of video? Possible values: True, False, or Unknown, which means that the data is not present.
TLT_STREAMING_SUPPORT	Does the device support video streaming? Possible values: True, False, or Unknown, which means that the data is not present.

Mobile Events

Tealeaf provides a set of Mobile events to support the tracking of user interface events that are captured through a Tealeaf client framework. These objects can be used as the basis for building other event objects for tracking the specifics of your client application.

Information about Mobile

The IBM Tealeaf CX Mobile module is a separately licensed module of the IBM Tealeaf CX platform. please contact your IBM Tealeaf representative.

Double Tap Gesture

.session(0) message Event

Display Name
      Double Tap Gesture

Internal Name
      CUST.E_DOUBLE_TAP_GESTURE

Advanced Mode
      true

Description
      .session(0) message Event

ImageSrc
      default.gif

DisplayInPortal
> true

DisplayInSessionList
> true

JavaScript: (Advanced Mode only)

```
// Generated by Tealeaf Event Manager

// NOTE: Do not change event name
function CUST$E_DOUBLE_TAP_GESTURE()
{
    if ($F.factCount("TL.F_E_MOBILE_SESSION_START_BB") > 0 && $P["TL.P_
SESSIONS_0_MESSAGE_STEP_ENTRY_IN_REQUEST"].firstValue().
toUpperCase() == "DOUBLETAP")
    {
        // Set fact for Report Group: No Dimension Report Group
        $F.setFact("CUST.F_E_DOUBLE_TAP_GESTURE", "TLT$NULL");
        // Set fact for Report Group: Gesure Report Group
        $F.setFact("CUST.F_E_DOUBLE_TAP_GESTURE_FACT2", "TLT$NULL");
    }
}
```

Exception

General exception

Display Name
> Exception

Internal Name
> CUST.E_EXCEPTION

Advanced Mode
> true

Description
> General exception

ImageSrc
> default.gif

DisplayInPortal
> true

DisplayInSessionList
> true

JavaScript: (Advanced Mode only)

```
// Generated by Tealeaf Event Manager

// NOTE: Do not change event name
function CUST$E_EXCEPTION()
{
    if ($F.factCount("TL.F_E_MOBILE_SESSION_START_BB") > 0 && $P["TL.STEP_
MESSAGE_TYPE"].firstValue().toUpperCase() == "6")
    {
        // Set fact for Report Group: No Dimension Report Group
        $F.setFact("CUST.F_E_EXCEPTION", "TLT$NULL");
        // Set fact for Report Group: Gesure Report Group
        $F.setFact("CUST.F_E_EXCEPTION_FACT2", "TLT$NULL");
        // Set fact for Report Group: Gesure Report Group 3
        $F.setFact("CUST.F_E_EXCEPTION_FACT3", "TLT$NULL");
    }
}
```

Gesture

Any recorded gesture qualifies.

Display Name
> Gesture

Internal Name
> CUST.E_GESTURE

Advanced Mode
> true

Description
> Any recorded gesture qualifies.

ImageSrc
> default.gif

DisplayInPortal
> true

DisplayInSessionList
> true

JavaScript: (Advanced Mode only)

```
// Generated by Tealeaf Event Manager

// NOTE: Do not change event name
function CUST$E_GESTURE()
{
    if ($F.factCount("TL.F_E_MOBILE_SESSION_START_BB") > 0 && $P["TL.STEP_
MESSAGE_TYPE"].firstValue().toUpperCase() == "11")
    {
        // Set fact for Report Group: No Dimension Report Group
        $F.setFact("CUST.F_E_GESTURE", "TLT$NULL");
        // Set fact for Report Group: Gesure Report Group
        $F.setFact("CUST.F_E_GESTURE_FACT2", "TLT$NULL");
    }
}
```

Mobile Model

Mobile model name

Display Name
> Mobile Model Name

Internal Name
> CUST.E_MOBILE_MODEL

Advanced Mode
> true

Description
> Mobile model name

ImageSrc
> default.gif

DisplayInPortal
> true

DisplayInSessionList
> true

JavaScript: (Advanced Mode only)

```
// Generated by Tealeaf Event Manager

// NOTE: Do not change event name
function CUST$E_MOBILE_MODEL()
{
    if ($F.factCount("TL.F_E_MOBILE_SESSION_START_BB") > 0 && $P["TLT.P__MODEL"].
patternFound())
    {
        // Set fact for Report Group: No Dimension Report Group
        $F.setFact("CUST.F_E_MOBILE_MODEL", $P["TLT.P__MODEL"].firstValue());
    }
}
```

Mobile Session Count

Count of mobile sessions.

Display Name
> Mobile Session Count

Internal Name
> CUST.E_MOBILE_SESSION_COUNT

Advanced Mode
> true

Description
> Count of mobile sessions

ImageSrc
> default.gif

DisplayInPortal
> true

DisplayInSessionList
> true

JavaScript: (Advanced Mode only)

```
// Generated by Tealeaf Event Manager

// NOTE: Do not change event name
function CUST$E_MOBILE_SESSION_COUNT()
{
    if ($F.factCount("TL.F_E_MOBILE_SESSION_START_BB") > 0)
    {
        // Set fact for Report Group: No Dimension Report Group
        $F.setFact("CUST.F_E_MOBILE_SESSION_COUNT_DG_NONE", "TLT$NULL");
        // Set fact for Report Group: Gesure Report Group
        $F.setFact("CUST.F_E_MOBILE_SESSION_COUNT_FACT1", "TLT$NULL");
        // Set fact for Report Group: Gesure Report Group 2
        $F.setFact("CUST.F_E_MOBILE_SESSION_COUNT_FACT2", "TLT$NULL");
        // Set fact for Report Group: Gesure Report Group 3
        $F.setFact("CUST.F_E_MOBILE_SESSION_COUNT_FACT3", "TLT$NULL");
        // Set fact for Report Group: Device Model / OS Version
        $F.setFact("CUST.F_E_MOBILE_SESSION_COUNT_FACT4", "TLT$NULL");
    }
}
```

Mobile Session Length (sec)

Total length of the session in seconds (end of session).

Display Name

     Mobile Session Length (sec)

Internal Name

     CUST.E_MOBILE_SESSION_SECS

Advanced Mode

     true

Description

     Total length of the session in seconds (end of session).

ImageSrc

     default.gif

DisplayInPortal

     true

DisplayInSessionList

     false

JavaScript: (Advanced Mode only)

```
// Generated by Tealeaf Event Manager

// NOTE: Do not change event name
function CUST$E_MOBILE_SESSION_SECS()
{
    if ($F.factCount("TL.F_E_MOBILE_SESSION_START_BB") > 0)
    {
        // Set fact for Report Group: No Dimension Report Group
        $F.setFact("CUST.F_E_MOBILE_SESSION_SECS_DG_NONE", $S.TotalTime);
        // Set fact for Report Group: Traffic Type
        $F.setFact("CUST.F_E_MOBILE_SESSION_SECS_DG_TLT_TRAFFIC_TYPE",
$S.TotalTime);
        // Set fact for Report Group: Gesure Report Group 3
        $F.setFact("CUST.F_E_MOBILE_SESSION_SECS_FACT1", $S.TotalTime);
        // Set fact for Report Group: Gesure Report Group
        $F.setFact("CUST.F_E_MOBILE_SESSION_SECS_FACT2", $S.TotalTime);
    }
}
```

Mobile Session Size (MB)

Total of all Rep and Req sizes (end of session)

Display Name

     Mobile Session Size (MB)

Internal Name

     CUST.E_MOBILE_SESSION_MB

Advanced Mode

     true

Description

     Total of all Rep and Req sizes (end of session)

ImageSrc

     default.gif

DisplayInPortal

     true

DisplayInSessionList

     false

JavaScript: (Advanced Mode only)

```
// Generated by Tealeaf Event Manager

// NOTE: Do not change event name
function CUST$E_MOBILE_SESSION_MB()
{
    if ($F.factCount("TL.F_E_MOBILE_SESSION_START_BB") > 0)
    {
        // Set fact for Report Group: No Dimension Report Group
        $F.setFact("CUST.F_E_MOBILE_SESSION_MB_DG_NONE", $F.getLastFact
("TL.F_E_REPORT_WS_SESSION_MB_DG_NONE").NumericValue);
        // Set fact for Report Group: Traffic Type
        $F.setFact("CUST.F_E_MOBILE_SESSION_MB_DG_TLT_TRAFFIC_TYPE", $F.getLastFact
("TL.F_E_REPORT_WS_SESSION_MB_DG_NONE").NumericValue);
        // Set fact for Report Group: Gesure Report Group 3
        $F.setFact("CUST.F_E_MOBILE_SESSION_MB_FACT1", $F.getLastFact
("TL.F_E_REPORT_WS_SESSION_MB_DG_NONE").NumericValue);
        // Set fact for Report Group: Gesure Report Group
        $F.setFact("CUST.F_E_MOBILE_SESSION_MB_FACT2", $F.getLastFact
("TL.F_E_REPORT_WS_SESSION_MB_DG_NONE").NumericValue);
    }
}
```

Mobile Session Start [BB]

Start of a mobile session.

Display Name
Mobile Session Start [MB]

Internal Name
CUST.E_MOBILE_SESSION_START_BB

Advanced Mode
true

Description
Start of a mobile session

ImageSrc
default.gif

DisplayInPortal
false

DisplayInSessionList
false

JavaScript: (Advanced Mode only)

```
// Generated by Tealeaf Event Manager

// NOTE: Do not change event name
function TL$E_MOBILE_SESSION_START_BB()
{
    if ($P["TL.TLT_TRAFFIC_TYPE"].firstValue() == "MOBILE" ||
$P["TL.TLT_TRAFFIC_TYPE"].firstValue() == "MOBILE_APP")
    {
        // Set fact for Report Group: No Dimension Report Group
        $F.setFact("TL.F_E_MOBILE_SESSION_START_BB", "TLT$NULL");
    }
}
```

Pinch Gesture

.sessions(0) message Event

Display Name

      `Pinch Gesture`

Internal Name

      `CUST.E_PINCH_GESTURE`

Advanced Mode

      true

Description

      .sessions(0) message Event

ImageSrc

      `default.gif`

DisplayInPortal

      true

DisplayInSessionList

      true

JavaScript: (Advanced Mode only)

```
// Generated by Tealeaf Event Manager

// NOTE: Do not change event name
function CUST$E_PINCH_GESTURE()
{
    if ($F.factCount("TL.F_E_MOBILE_SESSION_START_BB") > 0 && $P["TL.P_
SESSIONS_0_MESSAGE_STEP_ENTRY_IN_REQUEST"]
.firstValue().toUpperCase() == "PINCH")
    {
        // Set fact for Report Group: No Dimension Report Group
        $F.setFact("CUST.F_E_PINCH_GESTURE", "TLT$NULL");
        // Set fact for Report Group: Gesure Report Group
        $F.setFact("CUST.F_E_PINCH_GESTURE_FACT2", "TLT$NULL");
    }
}
```

Resize Gesture

Any pinch or double tap gesture

Display Name

      `Resize Gesture`

Internal Name

      `CUST.E_RESIZE_GESTURE`

Advanced Mode

      true

Description

      Any pinch or double tap

ImageSrc

      `default.gif`

DisplayInPortal

      true

DisplayInSessionList

      true

JavaScript: (Advanced Mode only)

```
// Generated by Tealeaf Event Manager

// NOTE: Do not change event name
function CUST$E_RESIZE_GESTURE()
{
    if ($F.factCount("TL.F_E_MOBILE_SESSION_START_BB") > 0 || $F.getLastFact("CUST.
F_E_DOUBLE_TAP_GESTURE").HitNumber == $H.HitNumber && $F.getLastFact
("CUST.F_E_DOUBLE_TAP_GESTURE").StepNumber ==
$H.StepNumber || $F.getLastFact("CUST.F_E_PINCH_GESTURE")
.HitNumber == $H.HitNumber && $F.getLastFact("CUST.F_E_PINCH_GESTURE").
StepNumber == $H.StepNumber)
    {
        // Set fact for Report Group: No Dimension Report Group
        $F.setFact("CUST.F_E_RESIZE_GESTURE", "TLT$NULL");
        // Set fact for Report Group: Gesure Report Group
        $F.setFact("CUST.F_E_RESIZE_GESTURE_FACT2", "TLT$NULL");
        // Set fact for Report Group: Gesure Report Group 3
        $F.setFact("CUST.F_E_RESIZE_GESTURE_FACT3", "TLT$NULL");
        // Set fact for Report Group: Gesure Report Group 2
        $F.setFact("CUST.F_E_RESIZE_GESTURE_FACT4", "TLT$NULL");
    }
}
```

Session with at least one exception

Any session that has at least one exception

Display Name
> Session with at least one exception

Internal Name
> CUST.E_SESSION_WITH_AT_LEAST_ONE_EXCEPTION

Advanced Mode
> true

Description
> Any session that has at least one exception

ImageSrc
> default.gif

DisplayInPortal
> true

DisplayInSessionList
> true

JavaScript: (Advanced Mode only)

```
// Generated by Tealeaf Event Manager

// NOTE: Do not change event name
function CUST$E_SESSION_WITH_AT_LEAST_ONE_EXCEPTION()
{
    if ($F.factCount("TL.F_E_MOBILE_SESSION_START_BB") > 0 && $F.
factCount("CUST.F_E_EXCEPTION") > 0)
    {
        // Set fact for Report Group: No Dimension Report Group
        $F.setFact("CUST.F_E_SESSION_WITH_AT_LEAST_ONE_EXCEPTION",
"TLT$NULL");
        // Set fact for Report Group: Gesure Report Group
        $F.setFact("CUST.F_E_SESSION_WITH_AT_LEAST_ONE_EXCEPTION_FACT2",
"TLT$NULL");
        // Set fact for Report Group: Gesure Report Group 2
        $F.setFact("CUST.F_E_SESSION_WITH_AT_LEAST_ONE_EXCEPTION_FACT3",
```

```
"TLT$NULL");
        // Set fact for Report Group: Gesure Report Group 3
        $F.setFact("CUST.F_E_SESSION_WITH_AT_LEAST_ONE_EXCEPTION_FACT4",
"TLT$NULL");
    }
}
```

Step - Device Carrier [BB]

Mobile Device Carrier BB Event for Dimensions

Display Name
>   Step - Device Carrier [BB]

Internal Name
>   CUST$E_STEP_CARRIER_BB

Advanced Mode
>   true

Description
>   Mobile Device Carrier BB Event for Dimensions

ImageSrc
>   default.gif

DisplayInPortal
>   false

DisplayInSessionList
>   false

JavaScript: (Advanced Mode only)

```
// Generated by Tealeaf Event Manager

// NOTE: Do not change event name
function CUST$E_STEP_CARRIER_BB()
{
    if ($P["CUST.P_CARRIER"].patternFound())
    {
        // Set fact for Report Group: No Dimension Report Group
        $F.setFact("CUST.F_E_STEP_CARRIER_BB_DG_NONE", $P
["CUST.P_CARRIER"].firstValue());
    }
}
```

Step - Last Gesture [BB]

Last Gesture BB for Unresponsive Gestures

Display Name
>   Step - Last Gesture [BB]

Internal Name
>   TL$E_LAST_GESTURE_BB

Advanced Mode
>   true

Description
>   Last Gesture BB for Unresponsive Gestures

ImageSrc
>   default.gif

DisplayInPortal
> false

DisplayInSessionList
> false

JavaScript: (Advanced Mode only)

```
// Generated by Tealeaf Event Manager

// NOTE: Do not change event name
function TL$E_LAST_GESTURE_BB()
{
    // Set fact for Report Group: No Dimension Report Group
    $F.setFact("TL.F_E_LAST_GESTURE_BB", 1);
}
```

Step - Last Gesture Offset [BB]

Last Gesture Offset BB for Unresponsive Gestures

Display Name
> Step - Last Gesture Offset [BB]

Internal Name
> TL$E_LAST_GESTURE_OFFSET_BB

Advanced Mode
> true

Description
> Last Gesture Offset BB for Unresponsive Gestures

ImageSrc
> default.gif

DisplayInPortal
> false

DisplayInSessionList
> false

JavaScript: (Advanced Mode only)

```
// Generated by Tealeaf Event Manager

// NOTE: Do not change event name
function TL$E_LAST_GESTURE_OFFSET_BB()
{
    // Set fact for Report Group: No Dimension Report Group
    $F.setFact("TL.F_E_LAST_GESTURE_OFFSET_BB", 1);
}
```

Step - Device Model [BB]

Mobile Device Model BB Event for Dimensions

Display Name
> Step - Device Model [BB]

Internal Name
> CUST$E_STEP_DEVICE_MODEL_BB

Advanced Mode
> true

Description

> Mobile Device Model BB Event for Dimensions

ImageSrc

> default.gif

DisplayInPortal

> false

DisplayInSessionList

> false

JavaScript: (Advanced Mode only)

```
// Generated by Tealeaf Event Manager

// NOTE: Do not change event name
function CUST$E_STEP_DEVICE_MODEL_BB()
{
    if ($P["CUST.P_STEP_DEVICE_MODEL_STEP_ENTRY_IN_REQUEST"].patternFound())
    {
        // Set fact for Report Group: No Dimension Report Group
        $F.setFact("CUST.F_E_STEP_DEVICE_MODEL_BB_DG_NONE", $P["CUST.P_STEP_
DEVICE_MODEL_STEP_ENTRY_IN_REQUEST"].firstValue());
    }
}
```

Step - OS Version [BB]

Mobile OS Version BB Event for Dimensions

Display Name

> Step - OS Version [BB]

Internal Name

> CUST$E_STEP_OS_VERSION_BB

Advanced Mode

> true

Description

> Mobile OS Version BB Event for Dimensions

ImageSrc

> default.gif

DisplayInPortal

> false

DisplayInSessionList

> false

JavaScript: (Advanced Mode only)

```
// Generated by Tealeaf Event Manager

// NOTE: Do not change event name
function CUST$E_STEP_OS_VERSION_BB()
{
    if ($P["CUST.P_STEP_OS_VERSION_ENTRY_IN_REQUEST"].patternFound())
    {
        // Set fact for Report Group: No Dimension Report Group
        $F.setFact("CUST.F_E_STEP_OS_VERSION_BB_DG_NONE", $P["CUST.P_
STEP_OS_VERSION_ENTRY_IN_REQUEST"].firstValue());
    }
}
```

Swipe Gesture

.sessions(0) message Event

Display Name
Swipe Gesture

Internal Name
CUST.E_SWIPE_GESTURE

Advanced Mode
true

Description
.sessions(0) message Event

ImageSrc
default.gif

DisplayInPortal
true

DisplayInSessionList
true

JavaScript: (Advanced Mode only)

```
// Generated by Tealeaf Event Manager

// NOTE: Do not change event name
function CUST$E_SWIPE_GESTURE()
{
    if ($P["CUST.P_SESSIONS_0_MESSAGE_STEP_ENTRY_IN_REQUEST"]
.firstValue().toUpperCase() == "SWIPE")
    {
        // Set fact for Report Group: No Dimension Report Group
        $F.setFact("CUST.F_E_SWIPE_GESTURE", "TLT$NULL");
        // Set fact for Report Group: Gesure Report Group
        $F.setFact("CUST.F_E_SWIPE_GESTURE_FACT2", "TLT$NULL");
    }
}
```

Tap and Hold Gesture

.sessions(0) message Event

Display Name
Tap and Hold Gesture

Internal Name
CUST.E_TAP_AND_HOLD_GESTURE

Advanced Mode
true

Description
.sessions(0) message Event

ImageSrc
default.gif

DisplayInPortal
true

DisplayInSessionList
true

JavaScript: (Advanced Mode only)

```
// Generated by Tealeaf Event Manager

// NOTE: Do not change event name
function CUST$E_TAP_AND_HOLD_GESTURE()
{
    if ($F.factCount("TL.F_E_MOBILE_SESSION_START_BB") > 0 && $P["TL.P_
SESSIONS_0_MESSAGE_STEP_ENTRY_IN_REQUEST"].firstValue().
toUpperCase() == "TAPHOLD")
    {
        // Set fact for Report Group: No Dimension Report Group
        $F.setFact("CUST.F_E_TAP_AND_HOLD_GESTURE", "TLT$NULL");
        // Set fact for Report Group: Gesure Report Group
        $F.setFact("CUST.F_E_TAP_AND_HOLD_GESTURE_FACT2", "TLT$NULL");
        // Set fact for Report Group: Gesure Report Group 2
        $F.setFact("CUST.F_E_TAP_AND_HOLD_GESTURE_FACT3", "TLT$NULL");
    }
}
```

Unresponsive Gestures

Any unresponsive gestur.

Display Name
> Unresponsive Gestures

Internal Name
> CUST.E_UNRESPONSIVE_GESTURES

Advanced Mode
> true

Description
> Any unresponsive gesture

ImageSrc
> default.gif

DisplayInPortal
> true

DisplayInSessionList
> true

JavaScript: (Advanced Mode only)

```
// Generated by Tealeaf Event Manager

// NOTE: Do not change event name
function CUST$E_UNRESPONSIVE_GESTURES()
{
    if ($F.factCount("TL.F_E_MOBILE_SESSION_START_BB") > 0 && $F.getLastFact
("CUST.F_E_UNRESPONSIVE_GESTURES_BB").HitNumber ==
$H.HitNumber && $F.getLastFact("CUST.F_E_
UNRESPONSIVE_GESTURES_BB").StepNumber == $H.StepNumber)
    {
        // Set fact for Report Group: No Dimension Report Group
        $F.setFact("CUST.F_E_UNRESPONSIVE_GESTURES", "TLT$NULL");
        // Set fact for Report Group: Gesure Report Group
        $F.setFact("CUST.F_E_UNRESPONSIVE_GESTURES_FACT2", "TLT$NULL");
        // Set fact for Report Group: Gesture Mobile Device
        $F.setFact("CUST.F_E_UNRESPONSIVE_GESTURES_FACT3", "TLT$NULL");
        // Set fact for Report Group: Gesure Report Group 3
        $F.setFact("CUST.F_E_UNRESPONSIVE_GESTURES_FACT4", "TLT$NULL");
    }
}
```

Unresponsive Gestures [BB]

Detect root ScreenView load from UIC as an unresponsive state.

Display Name

    Unresponsive Gestures [BB]

Internal Name

    CUST.E_UNRESPONSIVE_GESTURES_BB

Advanced Mode

    true

Description

    Detect root ScreenView load from UIC as an unresponsive state

ImageSrc

    default.gif

DisplayInPortal

    false

DisplayInSessionList

    false

JavaScript: (Advanced Mode only)

```
function CUST$E_UNRESPONSIVE_GESTURES_BB()
{
    var ugDetected = false;
    var offsetThreshold = 100; //in ms

    //Detect root ScreenView load from UIC as an unresponsive state
    //Event offset in UIC reset on each page so it is unreliable
    //when the page changes
    if($P["TL.STEP_SCREENVIEW_TYPE"].firstValue().toUpperCase() == "LOAD"
        && $P["TL.STEP_SCREENVIEW_NAME"].firstValue().toUpperCase() == "ROOT")
    {
        ugDetected = true;
        $F.setFact("TL.F_E_LAST_GESTURE_OFFSET_BB", "-1");
        $F.setFact("TL.F_E_LAST_GESTURE_BB", "");
    }
    else
    {
        if($P["TL.STEP_MESSAGE_TYPE"].patternFound() && $P["TL.STEP_
OFFSET"].patternFound())
        {
            var lastGestureOffset = $F.factCount("TL.F_E_LAST_GESTURE_
OFFSET_BB") > 0 ? parseInt($F.getLastFact("TL.F_E_LAST_
GESTURE_OFFSET_BB").Value) : -1;
            var lastGestureType = $F.factCount("TL.F_E_LAST_
GESTURE_BB") > 0 ? $F.getLastFact("TL.F_E_LAST_
GESTURE_BB").Value : "";
            var messageType = $P["TL.STEP_MESSAGE_TYPE"].firstValue();
            var offset = parseInt($P["TL.STEP_OFFSET"].firstValue());
            var tooLong = lastGestureOffset != -1 && (offset - lastGestureOffset)
>= offsetThreshold;
            var isExpectedMessageType = false;

            //Detect unresponsive gesture (gesture not followed by the
expected type within the threshold [default 100ms])
            if(lastGestureOffset != -1)
            {
              switch(lastGestureType)
              {
                case "pinch":
                  isExpectedMessageType = messageType == "1";
```

```
                                      break;
                            case "swipe":
                               isExpectedMessageType = messageType == "1" || messageType
== "2";

                               break;
                            case "tap":
                            case "doubleTap":
                            case "tapHold":
                            default:
                               isExpectedMessageType = messageType == "4";
                               break;
                         }

                            ugDetected = !isExpectedMessageType && tooLong;
                         }

                         //If we see a gesture, track its timestamp for the next call of
this event
                         if(messageType == "11")
                         {
                            lastGestureOffset = offset;
                            if($P["TL.P_SESSIONS_0_MESSAGE_STEP_ENTRY_IN_REQUEST"].
patternFound())
                               $F.setFact("TL.F_E_LAST_GESTURE_BB", $P["TL.P_SESSIONS_
0_MESSAGE_STEP_ENTRY_IN_REQUEST"].firstValue());
                            else
                               $F.setFact("TL.F_E_LAST_GESTURE_BB", "");
                         }
                         else
                            $F.setFact("TL.F_E_LAST_GESTURE_OFFSET_BB", "-1");
                      }
                   }

               if (ugDetected)
                   $F.setFact("CUST.F_E_UNRESPONSIVE_GESTURES_BB", "TLT$NULL");
}
```

Define mobile browser-based session events with the Event Manager

Through the Tealeaf Event Manager, you can define events that apply only to
mobile browser-based sessions.

By including this condition in your event definition, the event is triggered only for
mobile browser sessions:
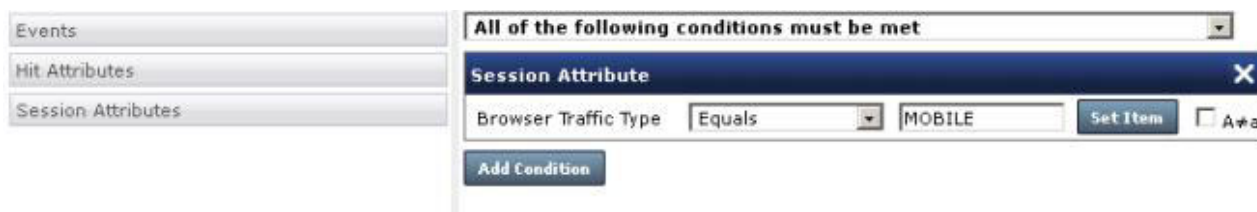
Figure 7. Session attribute Browser Traffic Type as event condition

In the example event, the initial condition is set to test for the **Browser Traffic
Type** session agent that is equal to **MOBILE**. This event tests for all conditions to
be true for the event to fire. You can add other conditions to the event to create
events that apply to mobile-only sessions.

For each event that you create for mobile browsers, you must add the session
agent as a test condition to restrict the test to only mobile-sourced sessions.

For more information about editing events, see "TEM Events Tab" in the *IBM Tealeaf Event Manager Manual*.

Use the Traffic Type dimension to identify sessions from self-reporting browsers

You can use the provided `Traffic Type` dimension to filter your reports to display only information from sessions that are sourced from self-reporting mobile browsers.

When the `Traffic Type` dimension is added to the report, you can filter the dimension to display one of the following values to report on events and ratios for mobile web or mobile native application sessions.

Traffic Type Dimension Value	Description
MOBILE	Session was initiated from a mobile web browser and was captured by IBM Tealeaf CX UI Capture j2. See "Integrating Client Framework Data into Tealeaf" in the *IBM Tealeaf Client Framework Data Integration Guide*.
MOBILE_APP	Session was initiated from a mobile native application and was captured by a Tealeaf client framework. See "Integrating Client Framework Data into Tealeaf" in the *IBM Tealeaf Client Framework Data Integration Guide*.

For more information about creating reports with the `Traffic Type` dimension, see "Tealeaf Report Builder" in the *IBM Tealeaf Reporting Guide*.

The `Traffic Type` dimension is sourced from the same information on the request as the `Browser Traffic Type` session attribute.

- See "TEM Dimensions Tab" in the *IBM Tealeaf Event Manager Manual*.

Creating mobile events based on data for the device

You can create other events that are based on the mobile data for the device, as extracted from the WURFL standard. Since this information is stored in the request record, you can create a hit attribute to look for values for each of the request variables listed. Then, you can create events or dimensions that use these hit attributes as source data

1. Create hit attribute:
   a. In the Portal, select **Configure** > **Event Manager**.
   b. Click the **Hit Attributes** tab. See "TEM Hit Attributes Tab" in the *IBM Tealeaf Event Manager Manual*.
   c. Click **New Hit Attribute**.
   d. Specify the hit attribute properties:
      1) You can name it similar to the request variable for easy identification.
      2) Search in: Request
      3) Use Start Tag/End Tag: selected
      4) Start Tag: Use the following request variable and an equal sign as in the:

```
TLT_TRAFFIC_TYPE=
```

     5) End Tag: Use the following string:

```
\r\n
```

  e. Click **Save Draft**.

  f. Click **Save Changes**.

2. Create event:

  a. In the Portal, select **Configure** > **Event Manager**.

  b. Click the **Events** tab. See "TEM Events Tab" in the *IBM Tealeaf Event Manager Manual*.

  c. Click **New Event**.

  d. Specify the hit attribute properties:

     1) You can name it similar to the request variable for easy identification.

     2) For the Condition, click the Hit Attributes tab. Select the hit attribute that you created. Specify the conditions as needed for the event.

     3) For the Value, click the Hit Attributes tab. Select the hit attribute that you created. You specify that the event is configured to record the value of the hit attribute.

     4) Make other configuration changes as needed.

  e. Click **Save Draft**.

  f. Click **Save Changes**.

3. Repeat the previous steps for any of the mobile hit attributes that you like to capture in events.

Dimension value lists

You can enable logging on dimensions to collect lists of data. You can modify the data set and reuse it in dimension reports.

To support the set of lists, you can enable logging on the dimensions you create to gather data. This data can then be downloaded through the Event Manager to your local system, where you can normalize the data and add or remove values. This list of values can then be reloaded into the dimension as a whitelist.

- For more information about generating these lists, see "User Agent Tools" in the *IBM Tealeaf cxImpact Administration Manual*

Mobile event reports

When the events are enabled, instances of event data can be counted, or the data values can be broken out for reporting.

Through the Tealeaf Portal, you can create analysis of events. Through the Tealeaf Portal, select **Analyze** > **Report Builder**. The list of available menu options are displayed.

For more information about individual reports for IBM Tealeaf CX Mobile, see Chapter 5, "Generate reports for Mobile web," on page 57.

Average Session Size and Length by Platform report

This report shows the average session size in MB per mobile session count and the average mobile session length in seconds per session count. Data is filtered by platform.

This table lists and describes the information in this report:

Value	Description
Platform	The mobile platform that the application is running on. Valid values are: • iOS • Android
Mobile Session Size (MB) per Mobile Session Count	The ratio of session size, in MB, to session count for the Mobile platform.
Mobile Session Length (sec) per Mobile Session Count	The ratio of session length, in seconds, to session count for the Mobile platform.

Exceptions By Day And Platform Report

This report shows the number of exceptions for a Mobile application. the data is filtered by day and by platform. The report also provides an hourly average of exceptions.

This table lists and describes the information in this report:

Value	Description
Day	The current day.
Totals	The total number of exceptions logged on the platform on the current day.
Hourly Average	The average number of exceptions that are received in an hour.
Platform	The mobile platform that the application is running on. Valid values are: • iOS • Android • Hybrid

Exceptions by ScreenView report

This report shows the exceptions for a Mobile application. Data is filtered by ScreenView.

This table lists and describes the information in this report:

Value	Description
Step - ScreenView	The ScreenView that had the exception.
Count	The number of exceptions that occurred on the ScreenView.

Percentage of Sessions with Exceptions report

This report shows the percentage of Mobile application sessions that had exceptions.

This table lists and describes the information in this report:

Value	Description
Day of Month	The current date.
Session with at least one exception per Mobile Session	The number of mobile sessions that had at least one exception
Percentage of sessions with exceptions	The percentage of mobile sessions that had at least one exception out of all of the sessions that had at least one exception.

Resizes by ScreenView report

This report shows the number of Mobile sessions that logged resize gestures. Data is filtered by ScreenView.

This table lists and describes the information in this report:

Value	Description
Step - ScreenView	The ScreenView that had the resize gesture.
Count	The number of resize gestures logged on the ScreenView
Totals	The total number of rezise gestures for the ScreenView.
Hourly Average	The average number of resize gestures received in an hour for the ScreenView.

Session Count by Date report

This report shows the number of Mobile sessions that are logged by date.

This table lists and describes the information in this report:

Value	Description
Day	The current date.
Count	The number of mobile sessions.
Totals	The total number of mobile sessions for the current date.
Hourly Average	The average number mobile in an hour.

Session Count by Day and Carrier report

This report shows the number of Mobile sessions logged by date. Data is filtered by mobile carrier.

This table lists and describes the information in this report:

Value	Description
Day	The current day.
Totals	The total number of sessions for a carrier on the current day.
Hourly Average	The average number of sessions logged for the carrier in an hour.

Value	Description
Carrier	The mobile carrier that the application is running on. Valid values are: • ? • ? • ?

Session Count by Hour report

This report shows the number of mobile sessions that are counted by hour. The report also provides an average of session counts for the previous four days of the week as the current report.

This table lists and describes the information in this report:

Value	Description
Hour of the day	The hour of the current day.
Mobile Session Count	The number of mobile sessions for the hour.
Mobile Session Count [Count - 4 Same DoW Avg]	The average number of sessions for the same hour for the last for same days of the week.

Session Count by OS Version report

This report shows the number of Mobile sessions counted. Data is filtered by OS version.

This table lists and describes the information in this report:

Value	Description
Hour of the Day	The hour of the day.
Step - OS Version	The OS version for the session.
Mobile Session Count	The number of mobile sessions for the OS version for the hour.

Session Count by Platform report

This report shows the number of Mobile sessions per hour for the current day. Data is filtered by platform.

This table lists and describes the information in this report:

Value	Description
Hour of the Day	The hour of the day.
Platform	The platform for the session. Valid values are: • iOS • Android • UIC
Mobile Session Count	The number of mobile sessions for the platform for the hour.

Unresponsive Gesture Struggles by ScreenView report

This report shows the number of unresponsive Mobile gesture struggles. Data is filtered by ScreenView.

This table lists and describes the information in this report:

Value	Description
Step - ScreenView	The ScreenView on which the unresponsive gesture struggle was logged.
Unresponsive Gestures Count	The number of unresponsive gesture struggles for the ScreenView.

Unresponsive Gesture Struggles by Day and Platform report

This report shows the number of Mobile gesture struggles. Data is filtered by day and platform.

This table lists and describes the information in this report:

Value	Description
Hour of the Day	The hour of the day.
Platform	The platform for the session. Valid values are: • iOS • Android • UIC
Unresponsive Gestures	The number of unresponsive gestures for the platform for the hour.

Chapter 5. Generate reports for Mobile web

With the ability to filter analysis based on the type of device, you can generate reports on mobile devices. These mobile devices are used to access the monitored web application. This information applies to sessions initiated through mobile web browsers to your web application.

For example, suppose that you are able to identify mobile users by device type. Through Tealeaf reporting, you discover that mobile users are predominantly creating one-page sessions, meaning that they view a single page on your website before leave. Which pages are viewed the most by mobile visitors in one-page sessions: login, status update, or other?

- If mobile visitors are hitting only the login page, perhaps there are functional problems with the page that are preventing mobile users from accessing the site.
- If visitors are hitting a status update page, then content to that page can be tailored for maximal effect for mobile users with more links to useful pages deeper in the site.

Tealeaf CX Mobile Dashboard

The IBM Tealeaf CX Mobile module includes the Mobile Traffic Dashboard, which must be imported into your Tealeaf solution.

Build Your Own Reports

Based on the reference data for mobile devices and the events that are created to monitor them, you can create event-based reports to identify mobile activities. In the Tealeaf Report Builder, you can create reports that are filtered by the `Traffic Type` dimension, which can be used to identify sessions that are initiated from a mobile browsing device.

Traffic Type Dimension Value	Description
`MOBILE`	Session was initiated from a mobile web browser and was captured by IBM Tealeaf CX UI Capture for AJAX. See "Integrating Client Framework Data into Tealeaf" in the *IBM Tealeaf Client Framework Data Integration Guide*.
`MOBILE_APP`	Session was initiated from a mobile native application and was captured by a Tealeaf client framework. See "Integrating Client Framework Data into Tealeaf" in the *IBM Tealeaf Client Framework Data Integration Guide*.

For more information about creating reports with the `Traffic Type` dimension, see "Tealeaf Report Builder" in the *IBM Tealeaf Reporting Guide*.

These reports can then be integrated as components in custom dashboards.

- See "Configuring Dashboards" in the *IBM Tealeaf cxView User Manual*.

Chapter 6. Generate reports for Mobile App

The IBM Tealeaf Mobile App logging frameworks enable the capture of a large array of device properties and user interface events into Tealeaf, where these values can be made available for reporting. Using data that is sourced from the Tealeaf Logging Frameworks, you can create event objects, such as hit attributes, dimensions, and events, to capture this data for reporting purposes. When the objects are created, you can use them in the same reports that are described at the end of section. You can also use them in reports that are already created.

Use of the Tealeaf Logging Frameworks for mobile native applications requires the Tealeaf CX Mobile license for Mobile App. For more information, contact your Tealeaf representative.
Licensees must implement in their apps code that is provided by Tealeaf. For more information on downloading Tealeaf software, see Tealeaf CX Downloads.

Pre-requisites for Mobile application reports

IBM Tealeaf CX Mobile for Mobile App uses one or more Tealeaf Logging Frameworks, which must be deployed and configured with the mobile native applications deployed to your visitors. YOu must download and deploy these frameworks before you can report on mobile applications.

- See the *IBM Tealeaf iOS Logging Framework Guide*.
- See the *IBM Tealeaf Android Logging Framework Guide*.

Two data transmission methods

The Tealeaf Logging Frameworks support two methods of submitting data and capturing it in Tealeaf.

This table lists and describes the data transmission methods:

Table 5. Two data transmission methods

Method	Supported Releases	Description
Hit-splitting	Release 8.4	If you implemented a Tealeaf logging framework to interact with your Release 8.4 system, you must deploy a session agent in your Windows pipeline. This session agent splits captured messages into individual hits, which are inserted into the regular session data. This legacy method of processing client framework is supported in the current release. In a future release, it is likely to be deprecated. • For more information on this session agent, see "JSON Mobile Parser Session Agent" in the *IBM Tealeaf CX Configuration Manual*.

Table 5. Two data transmission methods (continued)

Method	Supported Releases	Description
Step-based eventing	Release 8.5 and later	The logging frameworks submit messages in a unified JSON format. These messages are inserted into the request, from which you can create attributes and events. • For more information on step-based eventing, see "Step-Based Eventing" in the *IBM Tealeaf Event Manager Manual*.

Configure Event Objects

Tealeaf provides a set of step attributes and events to support the tracking of user interface events that are captured through a Tealeaf client framework. These objects can be used as the basis for building other event objects for tracking the specifics of your client application.

For more information about the provided event objects and other objects of value to create, see "Integrating Client Framework Data into Tealeaf" in the *IBM Tealeaf Client Framework Data Integration Guide*.

Report data

You create attributes, events, and dimensions to track mobile native application events and data. You use the attributes, events, and dimensions to build reports. Or you can use objects in reports that you already created in the Tealeaf Report Builder.

Dimensions and events

For tracking purposes, dimensions, such as the `Mobile Device` dimension, must be associated with events before dimensional data can be recorded for the events. By default, this dimension is associated with some Tealeaf Standard Events. Before you track event activities by mobile device type, this dimension must be associated with those events first, and event instances must be detected and recorded. See "TEM Events Tab" in the *IBM Tealeaf Event Manager Manual*.

For more information about creating reports, see "Tealeaf Report Builder" in the *IBM Tealeaf Reporting Guide*.

Track Variations

For events captured from mobile native applications, you might want to track variations in reported values. For example, you want to identify changes in reported hit counts for the mobile native applications, which might signal disinterest with the application.

Through the Event Manager, you can create Top Movers to track variations in reported values for specific events or dimensions. These Top Movers can be configured to be calculated on hourly or daily intervals.

• For more information about creating Top Movers, see "TEM Top Movers Tab" in the *IBM Tealeaf Event Manager Manual*.

When Top Movers are created and capturing data, you can create and review reports on Top Movers through the Portal. These easy-to-use reports provide a basic mechanism for tracking variations in captured values on key metrics that are related to application health. You can display multiple Top Movers of your mobile native application data to monitor basic changes in customer interactions with it.

Note: Some components of Top Movers reporting are available with the IBM Tealeaf cxView license. See "Enhancements to Top Movers for cxView" in the *IBM Tealeaf cxView User Manual*.

For more information about creating Top Movers reports, see "Analyzing Top Movers" in the *IBM Tealeaf Reporting Guide*.

Drill-down search for data

From either Top Mover or Report Builder reports, you can drill into the report to explore individual sessions. From the:
*   Top Mover report, use links in the data table to open the Tealeaf Report Builder with a report on the underlying event or dimension that is displayed by using the appropriate date range.
*   Report Builder report, you can use the links in the data table to open a session list. It contains the sessions that are supporting the data reported in the link you clicked.

From the session list, you can explore individual sessions, including locating the exact hit where the event or dimension was recorded.
*   See "Searching Session Data" in the *IBM Tealeaf cxImpact User Manual*.

Portal search

You can also search sessions that are containing individual events or event + dimension combinations through the Portal.
*   See "Searching Session Data" in the *IBM Tealeaf cxImpact User Manual*.

Available Dashboards

Tealeaf provides report templates and dashboards that you can download and install in your Tealeaf solution.

Chapter 7. IBM Tealeaf documentation and help

IBM Tealeaf provides documentation and help for users, developers, and administrators.

Viewing product documentation

All IBM Tealeaf product documentation is available at the following website:

https://tealeaf.support.ibmcloud.com/

Use the information in the following table to view the product documentation for IBM Tealeaf:

Table 6. Getting help

To view...	Do this...
Product documentation	On the IBM Tealeaf portal, go to **?** > **Product Documentation**.
Help for a page on the IBM Tealeaf Portal	On the IBM Tealeaf portal, go to **?** > **Help for This Page**.
Help for IBM Tealeaf CX PCA	On the IBM Tealeaf CX PCA web interface, select **Guide** to access the *IBM Tealeaf CX PCA Manual*.

Available documents for IBM Tealeaf products

Use the following table to view a list of available documents for all IBM Tealeaf products:

Table 7. Available documentation for IBM Tealeaf products

IBM Tealeaf products	Available documents
IBM Tealeaf CX	• *IBM Tealeaf Customer Experience Overview Guide* • *IBM Tealeaf CX Client Framework Data Integration Guide* • *IBM Tealeaf CX Configuration Manual* • *IBM Tealeaf CX Cookie Injector Manual* • *IBM Tealeaf CX Databases Guide* • *IBM Tealeaf CX Event Manager Manual* • *IBM Tealeaf CX Glossary* • *IBM Tealeaf CX Installation Manual* • *IBM Tealeaf CX PCA Manual* • *IBM Tealeaf CX PCA Release Notes*

Table 7. Available documentation for IBM Tealeaf products (continued)

IBM Tealeaf products	Available documents
IBM Tealeaf CX	• *IBM Tealeaf CX RealiTea Viewer Client Side Capture Manual* • *IBM Tealeaf CX RealiTea Viewer User Manual* • *IBM Tealeaf CX Release Notes* • *IBM Tealeaf CX Release Upgrade Manual* • *IBM Tealeaf CX Support Troubleshooting FAQ* • *IBM Tealeaf CX Troubleshooting Guide* • *IBM Tealeaf CX UI Capture j2 Guide* • *IBM Tealeaf CX UI Capture j2 Release Notes*
IBM Tealeaf cxImpact	• *IBM Tealeaf cxImpact Administration Manual* • *IBM Tealeaf cxImpact User Manual* • *IBM Tealeaf cxImpact Reporting Guide*
IBM Tealeaf cxConnect	• *IBM Tealeaf cxConnect for Data Analysis Administration Manual* • *IBM Tealeaf cxConnect for Voice of Customer Administration Manual* • *IBM Tealeaf cxConnect for Web Analytics Administration Manual*
IBM Tealeaf cxOverstat	*IBM Tealeaf cxOverstat User Manual*
IBM Tealeaf cxReveal	• *IBM Tealeaf cxReveal Administration Manual* • *IBM Tealeaf cxReveal API Guide* • *IBM Tealeaf cxReveal User Manual*
IBM Tealeaf cxVerify	*IBM Tealeaf cxVerify Administration Manual*
IBM Tealeaf cxView	*IBM Tealeaf cxView User Manual*
IBM Tealeaf CX Mobile	• *IBM Tealeaf CX Mobile Android Logging Framework Guide* • *IBM Tealeaf Android Logging Framework Release Notes* • *IBM Tealeaf CX Mobile Administration Manual* • *IBM Tealeaf CX Mobile User Manual* • *IBM Tealeaf CX Mobile iOS Logging Framework Guide* • *IBM Tealeaf iOS Logging Framework Release Notes*

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