zEvent Mobile Application

User's Guide

Version 3.1

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1. Introduction

IBM zEvent is a notification and monitoring app for the management of IBM z/OS systems on a mobile device. It helps you react quickly to critical system messages, process failures, or resource shortages.

zEvent receives and displays system events and charts that are sent by means of push services. It provides system administrators with essential information that they can use to assess and respond to situations. For example, based on the information provided by the zEvent app, the administrator can decide whether a system event requires immediate attention.

A notification can be enriched with context information. This information, coupled with zEvent's integrated interfaces to z/OS tools, such as IBM Resource Measurement Facility (RMF) and IBM z/OS Management Facility (z/OSMF), allows users to drill down and pinpoint the system message source. Using these monitoring facilities, the administrator can then decide whether a direct reaction at his workspace is required.

The app is focused on z/OS systems and is tailored to functionality provided by z/OS, which is a prerequisite to exploit the full capabilities of this app.

For more information refer to the zEvent website:
http://www.ibm.com/systems/z/os/zos/features/zevent/zevent.html

2. Quick Start

2.1 Prerequisites

- Supported versions:
    o iOS version 8 or higher
    o Android version 4.4 or higher
- Internet connection
- Email account set up on the mobile device preferred

2.2 Enable Push Notifications to Receive Events and Charts

To receive events, the app needs to be enabled to receive push notifications. Furthermore, the required information that identifies the mobile device needs to be propagated to the z/OS system that is responsible for sending the notifications. More specifically, these are required:
- The push token of the device ("device token" in iOS terminology, "registration id" in Android terminology), to identify the device when sending a push notification.
- The device owner information is required to configure the appropriate receiver for the events.

To provide the required information, first navigate to *Settings → Push* as shown in Figure 1, and enter the information provided by your administrator. Then, tap *Connect* and accept any prompts that appear. Once you have tapped *Connect*, a notification might appear to indicate that the internal settings have not changed since the last connection. Next, an email draft will appear as shown in Figure 2. The email contains the information to set up the delivery of the push messages on the z/OS system. You do not need to modify the email. Send the email to the administrator.

Important: Perform this step if it is the first time the app is installed or repeat this step if you have previously uninstalled the app.

Important for iOS only: If no Server URL for the notifications is specified in the settings, special handling is required. To process the events if the app is inactive, *do not* terminate the app. This allows the app to collect the incoming events in the background. If the app is terminated, the incoming events, which are displayed in the notification center, need to be *manually transmitted* to the app by tapping on them.
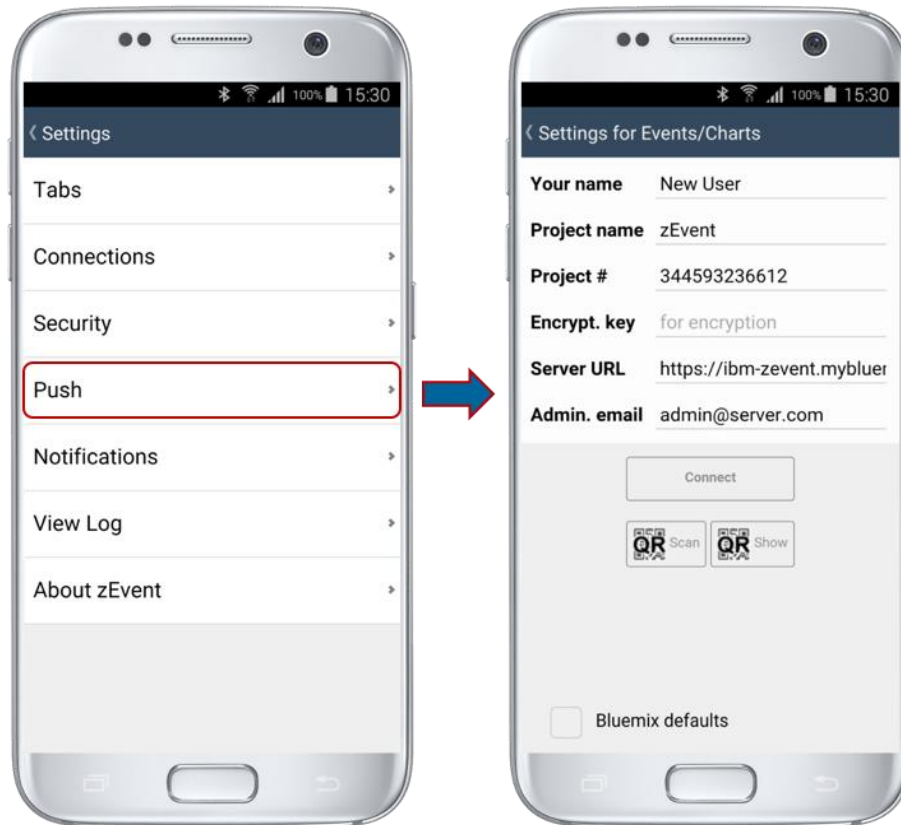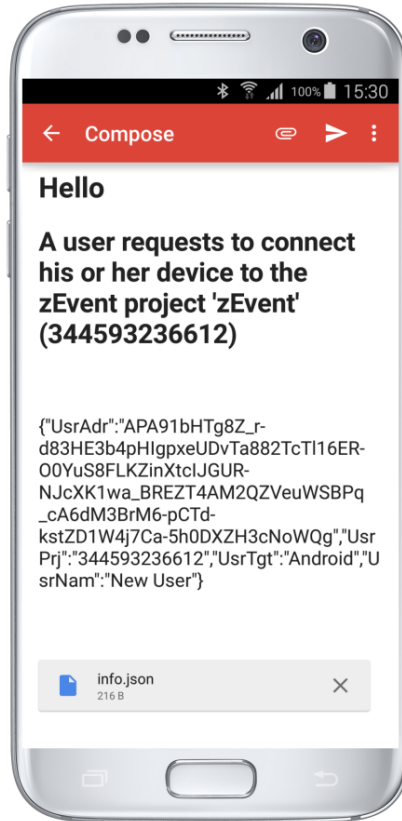

Figure 1: Push Settings

Figure 2: Email of the Push Settings to the Administrator

2.3 Connect to Monitors (RMF and z/OSMF)

To exploit the monitoring facilities, you must specify the required information for a web connection, such as URLs and credentials. Furthermore, the connection should not be blocked by firewalls.

To establish a monitor connection, navigate to *Settings → Connections* as shown in Figure 3. Use an existing connection definition (if possible) or create a new connection definition with the add button (+).

Type a new label and select either *rmf* or *zosmf* from the drop-down box as connection type.
Then specify the URL in the input field, as shown in Figure 4.
A valid RMF URL requires this format:
```
http://[host]:[port]/gpm/root.xml
```
A valid z/OSMF URL requires this format:
```
https://[host]:[port]/zosmf or
https://[host]:[port]/zosmf/izur
```
The former navigates to the starting page of z/OSMF, and the latter displays a list of defined dashboards to display one of them without having to navigate through z/OSMF. Finally, supply the user credentials and save the connection definition. If you don't want to specify a password you can leave this field empty. Then you will be prompted for the password when you start the connection.

Important: The label should be the name of the system as it will appear in the notifications. This allows the association of the corresponding connection definition when connecting and navigating to a specific host from the event's context menu, as shown in Figure 13.

The connection list in Figure 3 shows both connection types, RMF (R) and z/OSMF (Z) connections. Tap one of the connections and choose *Connect*. If the connection was successful, the symbol of the connection turns green. Leave the settings and choose the monitor tab for the corresponding connection type to retrieve the provided information. Examples of the RMF and the z/OSMF monitor tabs are shown in Figure 5 and Figure 6.

Important: Connecting to a system may take a moment. An error message appears when a connection could not be established within the specified timeout. In this case the connection symbol turns red.
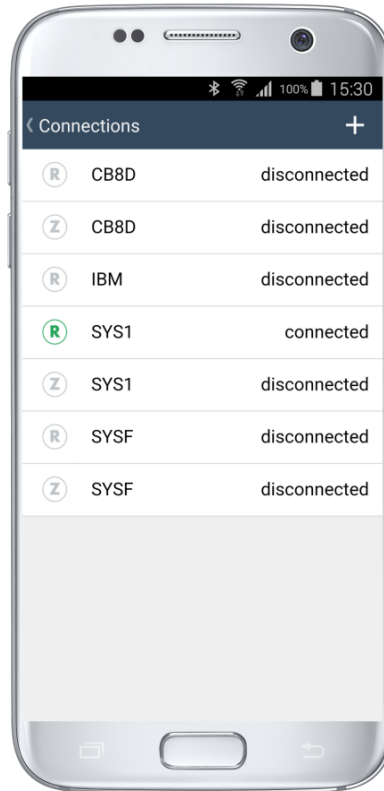

Figure 3: Connection Settings

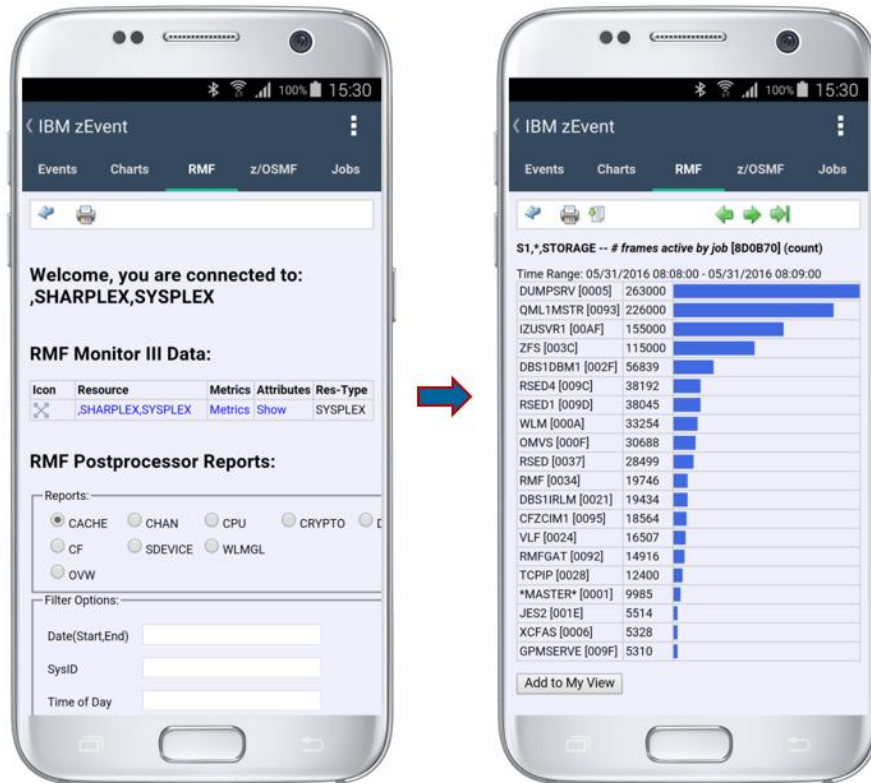Figure 4: Definition of a New Connection
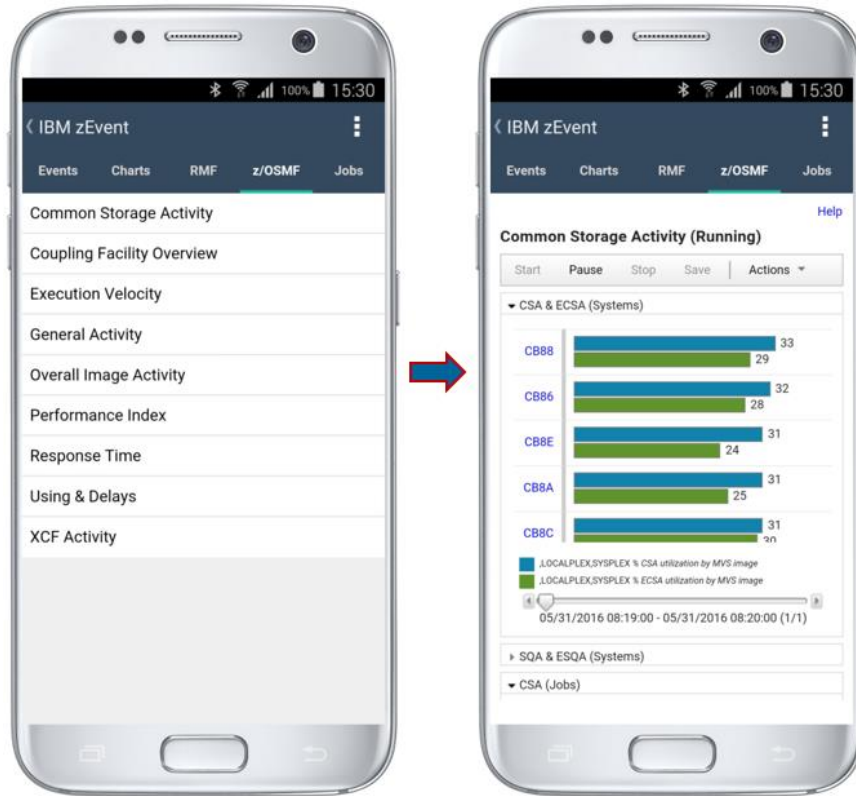

Figure 5: Example RMF View

Figure 6: Example z/OSMF Dashboard View

3. User Interface

The User Interface includes the following elements, shown in Figure 7:
1. *Back Button*: The back button performs multiple tasks. It is primarily used to go back within the settings menu. If you tap it when another tab is displayed, it navigates to the main tab, *Events*. It also closes certain popup menus, for example, the connection menu. On the *RMF* tab, it can be used like a browser back button to return to the previous view. On the z/OSMF tab, it can navigate back from a z/OSMF dashboard to the dashboard list.
2. *Title*: The title indicates the current view of the app.
3. *Settings Button*: The settings button displays the settings menu. Use the back button to close the settings menu.
4. *Tab Bar*: Use the tap bar to quickly switch views. You can use settings to customize the tab bar to show only the required tabs.
5. *Tab Content*: The largest part of the display shows the content of a given tab. The content is resized if you rotate the mobile device.
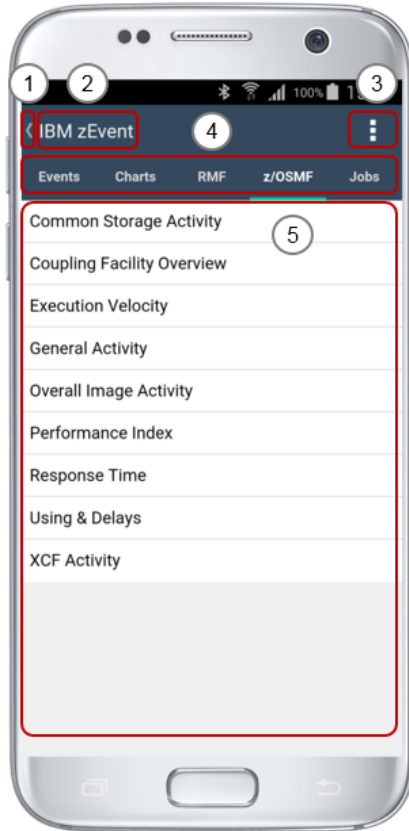
Figure 7: Elements of the User Interface

4. App Settings

Use the settings button in the upper right corner to customize and to configure the app. The following sections describe the settings pages in more detail.

4.1 Tabs

As displayed in Figure 8, the *Tabs* settings allow you to check and uncheck the tabs that should be displayed in the app. The Events tab cannot be hidden, because it is the main tab of the app. Just in case you want to rename individual tabs, you can simply overwrite the default tab names with labels of your choice.
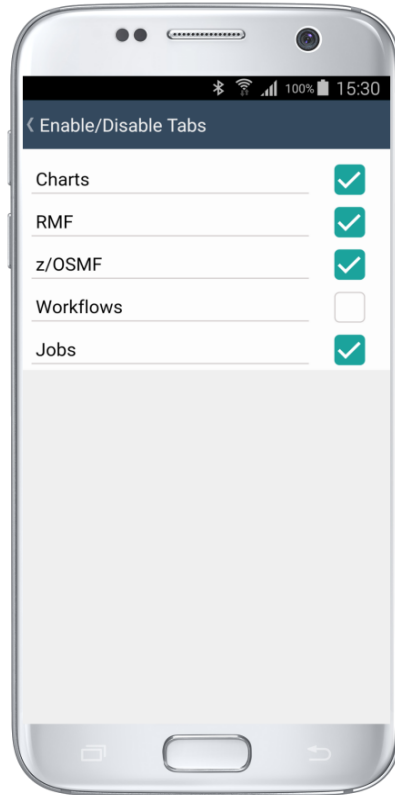
Figure 8: Settings for *Tabs*

4.2 Connections

The connections settings can be used to define the URLs and the credentials of the system monitoring facilities (cf. Section 2.3). After using the add button (+), a new connection definition can be specified, as illustrated in Figure 9. The connection can be labeled with a name, a connection type and a location URL. Scan and Show QR buttons simplify the process of defining or editing a connection. All fields except User name and Password can be filled in by using this functionality. The supported monitoring facilities are RMF and z/OSMF.
A valid RMF URL requires this format:

```
http://[host]:[port]/gpm/root.xml
```

A valid z/OSMF URL requires this format:

```
https://[host]:[port]/zosmf
```
 to connect to the starting page of z/OSMF or
```
https://[host]:[port]/zosmf/izur
```
 to retrieve a list of defined dashboards and navigate to them

The credentials are required for authentication. If you don't want to specify a password you can leave this field empty. Then you will be prompted for the password when you start the connection.

Important: The label should be the name of the system as it will appear in the notifications. This makes it possible to associate the corresponding connection definition when connecting and navigating to a specific host from the event's context menu (see Figure 13).
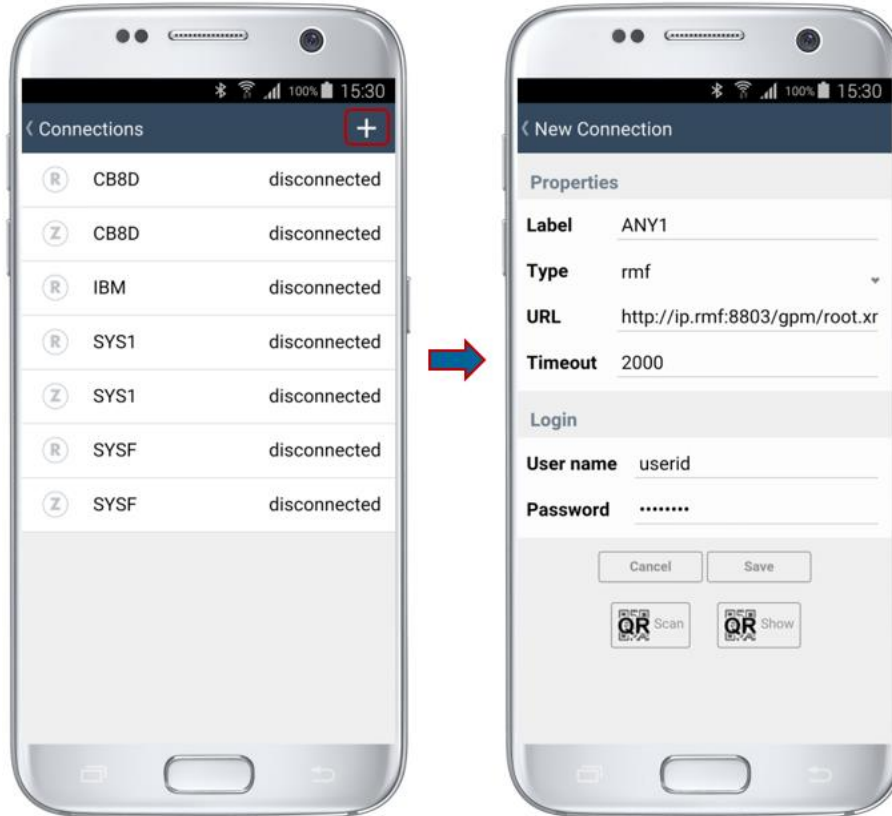
Figure 9: Settings for *Connections*

4.3 Security

The security settings allow to set, change and remove a master password for the zEvent app. If there is a password defined, the app will ask for it during startup and it is not possible to see any app data without the correct password. Without the correct password it is not possible to retrieve the app data, therefore a dialog will show up which allows to clear all app data.

4.4 Push

The push settings are used to connect the app to the push services. When the app is installed for the first time, enter the information provided by your administrator in the fields. Some of the information can also be passed by displaying and scanning QR codes using the appropriate buttons. After the information is entered, tap *Connect* to register to the push services.

After connecting to the push service (accepting all prompts) is complete, a popup is displayed. The popup allows you to send the information to the administrator via email. This is necessary to set up the sending of push messages from the z/OS system to the device. This step requires that email is set up on the mobile device.

Important: Perform this step if you are installing the app for the first time, or if you have previously uninstalled the app.

4.5 Notifications

It is possible to mute notifications using Notifications Settings (see Figure 10). When Mute Notifications mode is on, then messages that are sent via the server that specified in Push Settings will not be delivered to the device. The corresponding messages on Events and Charts Tabs warn the user about it.
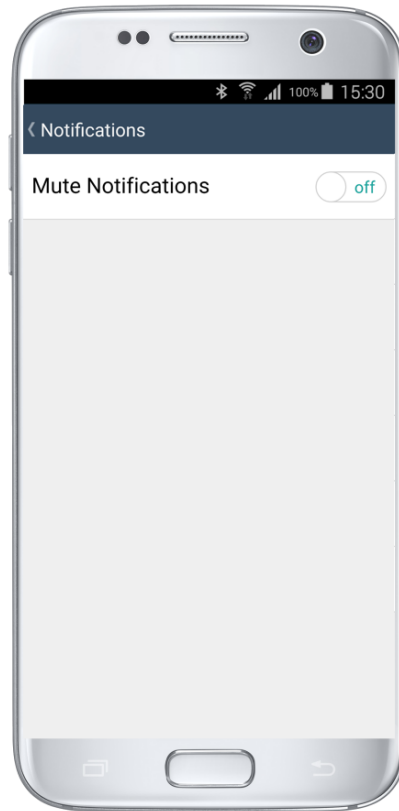

Figure 10: Mute Notifications

4.6 View Log

The *View Log* function allows you to review the reason for connection errors at a later point in time. Just in case a connection attempt to a z/OS system is unsuccessful, a message popup is displayed which explains the reason in more detail. For the iOS platform, you can read this information carefully until the Ok button is clicked. For Android, the message is displayed as a toast which disappears after a short period. Hence, the error is written to a log file and you can view the content of the log file later by means of the *View Log* function. At this point you can also click the *Clear* button and scratch the content of the log file.

Figure 11: *View Log* functionality

4.7 About zEvent

This page opens a selection menu with legal information and version information about the app.

5. Events Tab

The Events tab is the main tab of the app, see Figure 12. New events are displayed here with a timestamp, the affected system, a short description, and a severity indicated by the color of the event. To obtain more information, tap on the event to expand it. If a Server URL is specified in the push settings, pending notifications (events and charts) can be synchronized by pulling down the list.

Certain keys defined by the administrator link the event with specific performance metrics or z/OSMF dashboards (for example, *Links* in Figure 12). You can retrieve this information by tapping on the expanded event that triggers a popup menu, as shown in Figure 13. Apart from cleaning up events, this menu allows you to directly connect to a monitor of the affected system – given this label exists in the connections settings – and further investigate the source of the event. The monitors are opened in their respective tabs, as shown in Sections 7 and 8.
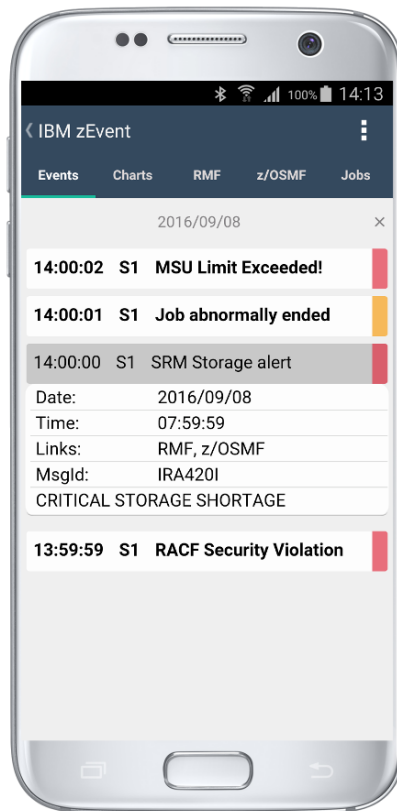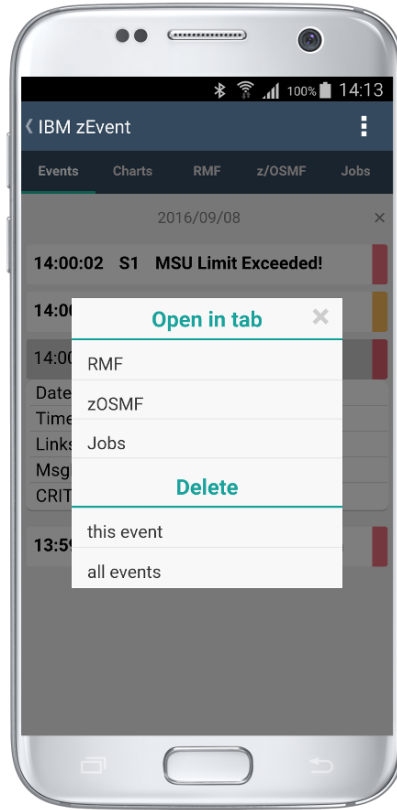

Figure 12: Events Tab

Figure 13: Events Tab – Context Menu

Beside deleting events from the popup menu above, it is possible to delete events by clicking on the day title. Another popup menu appears which allows to delete specific events:
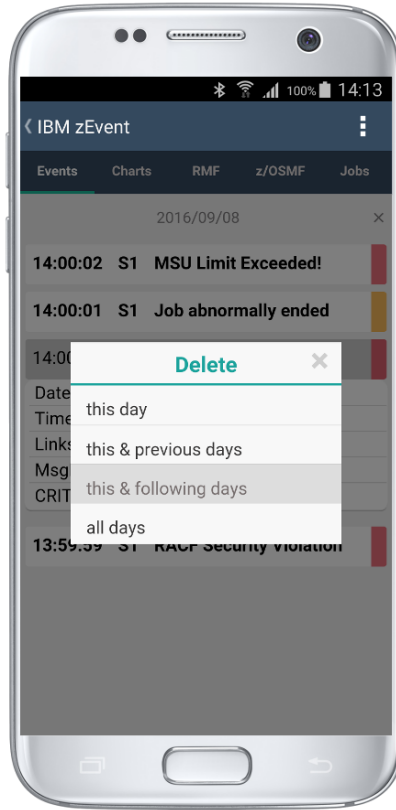
Figure 14: Events Tab - Delete Menu

6. Charts Tab

Similar to the events, the host can provide chart-like information about the system to the app. These charts are static, graphical information and are provided with a timestamp, the affected system, and a brief description. Tapping on this element expands the chart and displays its information (see Figure 15). Tapping on the chart displays a context menu, as shown in Figure 16. This tab also allows to synchronize pending events and charts by pulling down the list.
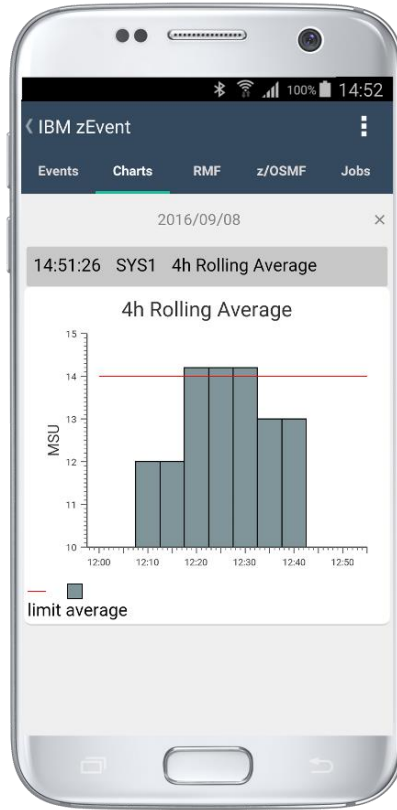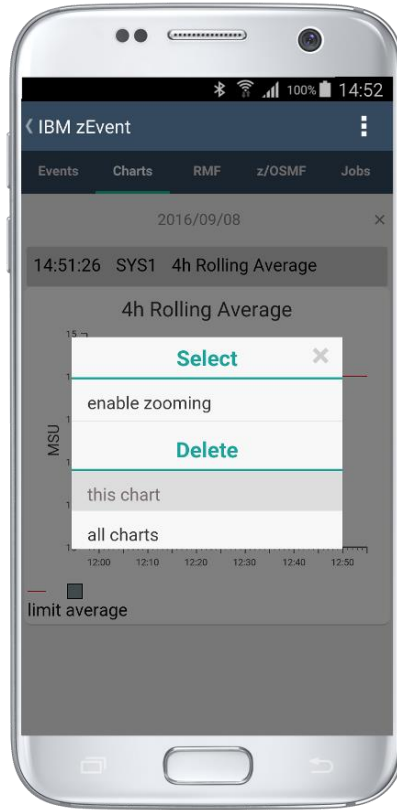
Figure 15: Charts Tab

Figure 16: Charts Tab – Context Menu

Beside deleting charts from the popup menu above, it is possible to delete charts by clicking on the day title. Another popup menu appears which allows to delete specific charts:
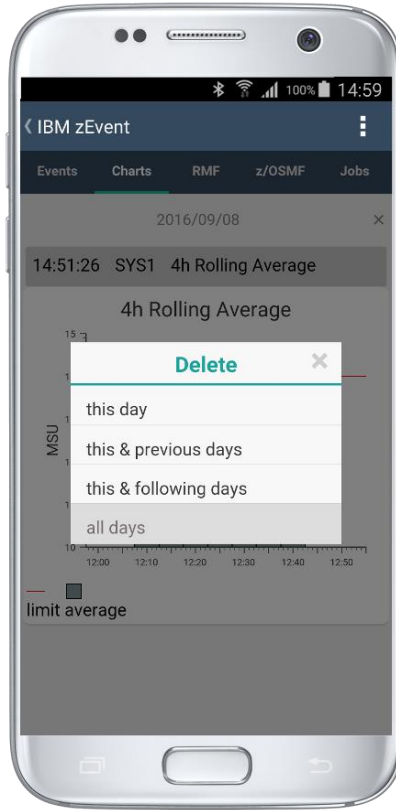
Figure 17: Charts Tab - Delete Menu

7. RMF Tab

After the connection to an RMF host has been established successfully, the monitor information can be retrieved in the RMF tab, and its content can be browsed interactively, as shown in Figure 18. This view is the embedded web interface of RMF, however, some functionality may be not available (for example, printing the document).
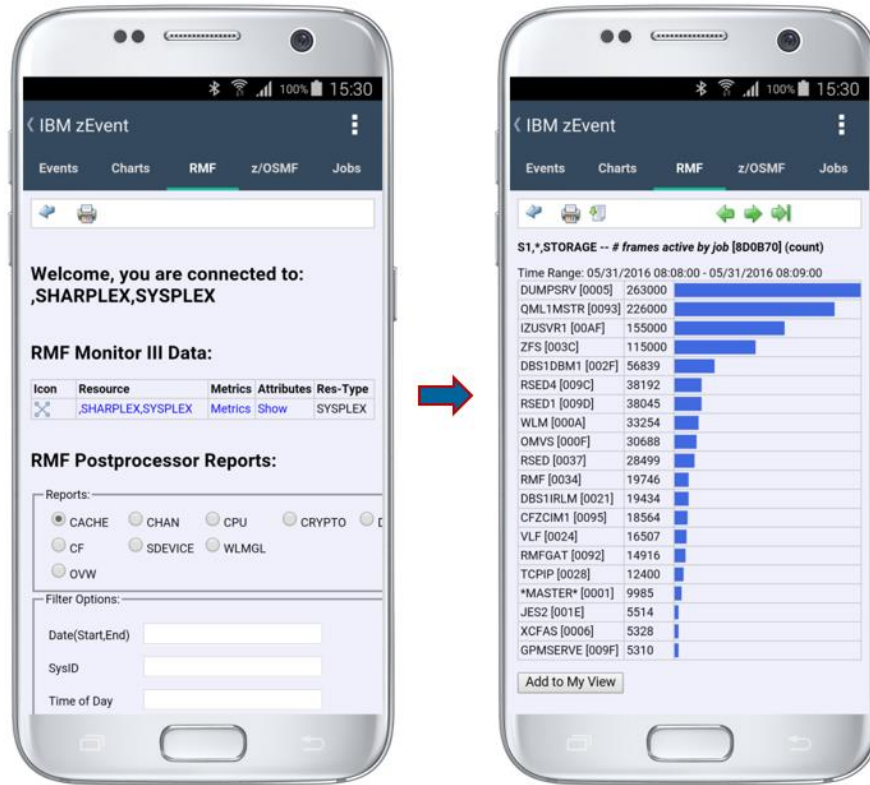
For a comprehensive overview of RMF, refer to
http://www.ibm.com/systems/z/os/zos/features/rmf

Figure 18: RMF Tab

8. z/OSMF Tab

The z/OSMF tab provides functions that are similar to the RMF tab. It provides monitor information using the z/OSMF web interface. Depending on the configuration, described in Section 4.2, the tab loads the starting page of z/OSMF or displays a list of defined dashboards from which the user can choose. Tap on one of the items in the list to load the dashboard information, as shown in Figure 19. Use the back button to close the dashboard and display the list again, where the last accessed dashboard is held in cache.
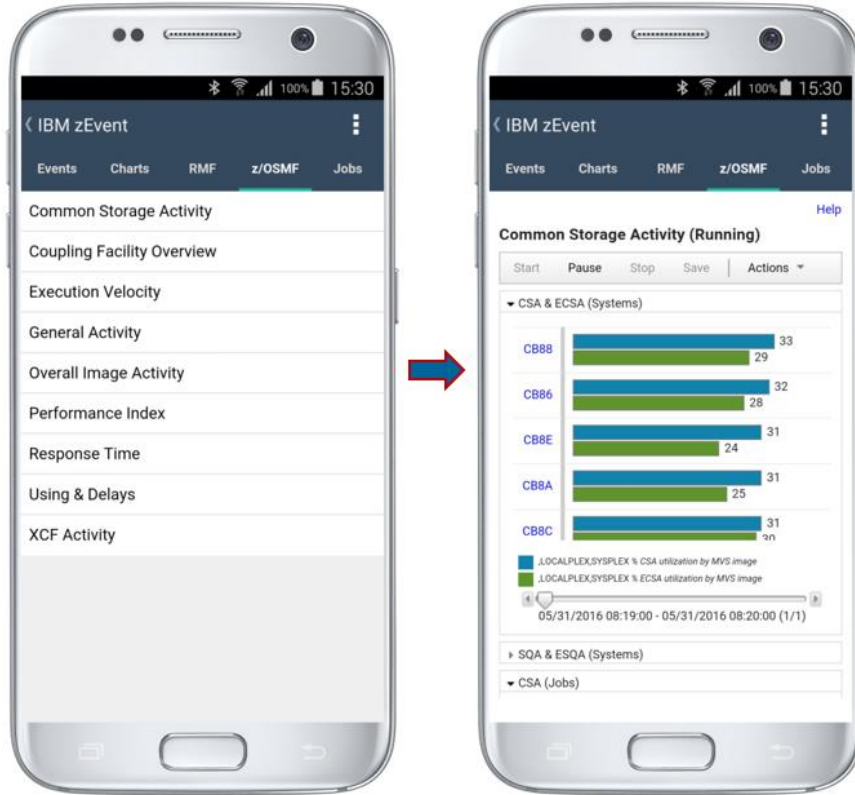
For a comprehensive overview of z/OSMF, refer to
http://www.ibm.com/systems/z/os/zos/features/zosmf

Figure 19: z/OSMF Tab

9. Jobs Tab

The Jobs tab displays the jobs of the connected z/OSMF system. The default of the main view shows the jobs in the system that start with the name of the connected user, see Figure 20. To retrieve a list of jobs with a specific prefix, edit the text field of the jobs name and tap on 'Get from server' button. Note that the server-side list is limited to 1000, thus, refine the name of the required job is not in the list.

A local filter can be used to search for specific jobs. If no filter is specified, the text field shows the number of retrieved jobs, both active jobs and total jobs. A toggle button allows to switch between a complete list of jobs and a list of active jobs only.
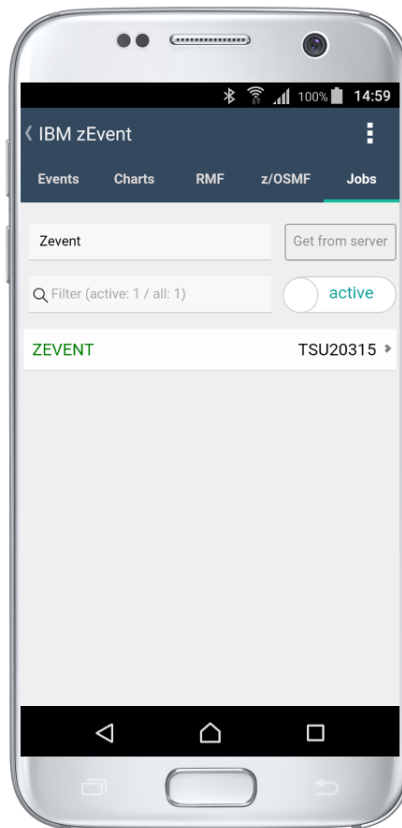

Figure 20: Jobs Tab

Tapping on a job in the list shows the job properties to get more information, such as job owner and job status, see Figure 21. The job properties include:

- id
- name
- class
- type
- phase
- phase name
- owner

- subsystem
- status

Properties of a specific job can also be retrieved from the context of an event. When an event containing a job ID is received by the zEvent application, tap on the extended event to open the properties of the job, see for example Figure 22.
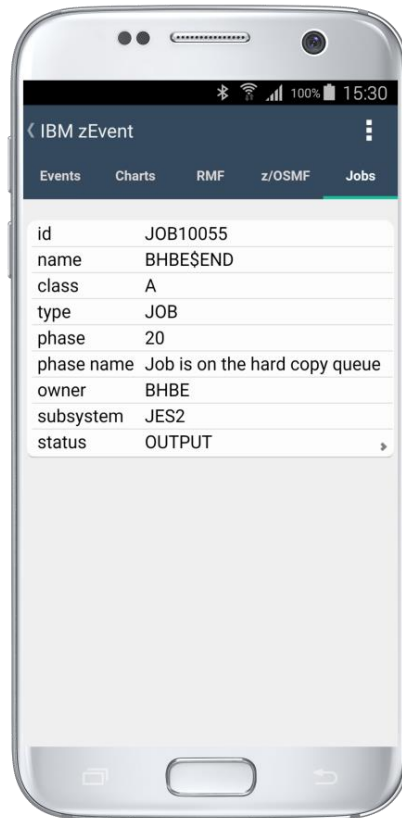

Figure 21: Jobs Tab – Job Properties Panel

Click the properties to open the spool file list of the job. Click a spool file to expand it and show its properties, as shown in Figure 23. The properties include:

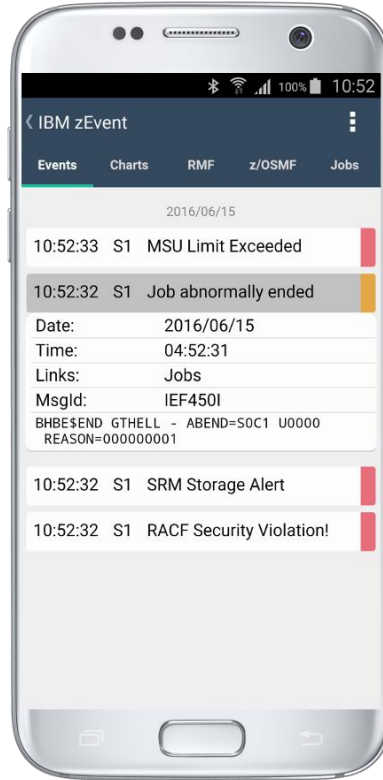- byte-count
- record-count
- recfm
- stepname

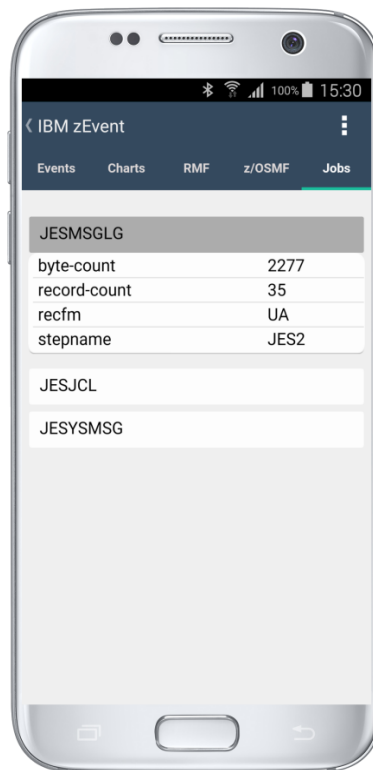Figure 22: Events Tab – Job Event

Figure 23: Jobs Tab – Jobs Spool File List

Click the properties of a spool file in the list to open the content of the spool file. Swipe the screen to see more content. See Figure 24 for an example.

Figure 24: Jobs Tab – Jobs Spool File Content

10. Workflows Tab

The Workflows tab shows all of the workflows on the current z/OSMF system, see Figure 25. The workflow instances can be retrieved as a list when opening the Workflows tab in zEvent. A search box is provided to search the list by workflow name. The workflow name is displayed for each row in the list and when the user clicks on a row in the list the workflow properties panel is opened. You can pull down the workflow list and then release it to refresh the list.
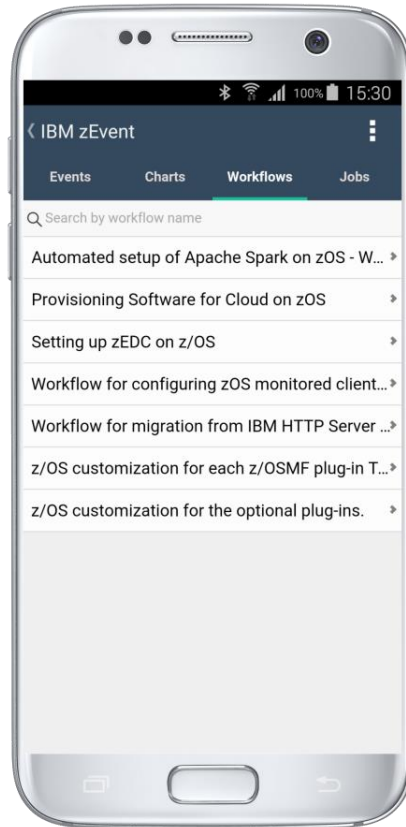

Figure 25: Workflows Tab – Workflows List

You can also filter the workflow list by the workflow name, and display workflow details. The Workflows tab contains a properties panel, which displays the following workflow information:

- name
- description
- version
- vendor
- access
- owner
- system
- status
- percent complete

See Figure 26 for an example.

Figure 26: Workflows Tab – Workflow Properties

Click the properties to open the workflow step list. You can then click a step to reveal its properties, such as:

- state
- title
- calledWorkflow
- automated
- owner
- skills
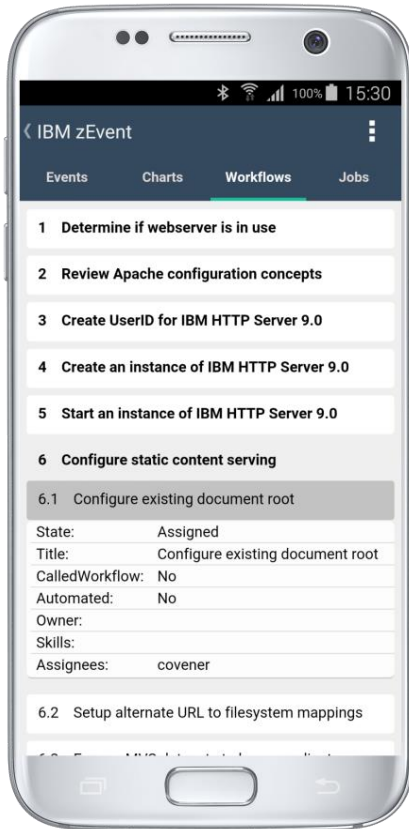- assignees

.

See Figure 27 for an example.

Figure 27: Workflows Tab – Workflows Step List

11.   FAQ and Known Issues

11.1   Events

- *iOS only: App does not contain new notifications if it was terminated.*

  On iOS, the app is not able to detect new notifications if it is terminated and no Server URL is specified. To process the notifications if the app is inactive, either enter a Server URL as provided by your administrator or *do not* terminate the app. The latter allows the incoming events to be collected in the background. If the app is terminated and no Server URL is specified, the incoming events, which are displayed in the notification center, need to be *manually transmitted* to the app by tapping on them.

- *I cannot connect to a host from the context menu of an event even though the system is defined in the connection settings.*

  Make sure that the connection definition is labeled as the system name. This makes it possible to associate the right connection definition when connecting and navigating to a specific host from the event's context menu.

11.2   z/OSMF Dashboards

- *iOS only: When opening z/OSMF using the context menu of an event, the dashboard is not loading or is not shown properly.*

  Earlier versions of z/OSMF cannot be displayed properly and may appear as unavailable.

11.3   Miscellaneous

- *Are there any limits when sending push notifications?*

  The limits are specific to the device OS. Currently, there is no known limit for Android. For iOS, as described in Apple documentation, there is a 256-byte limit for iOS 7 and a 2-KB limit for iOS 8 and above for the payload of the notification.