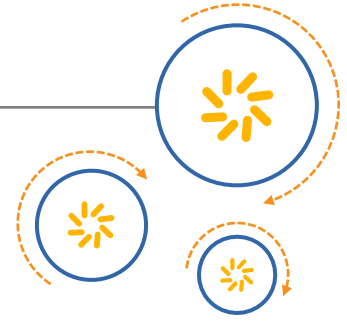




Qualcomm Technologies, Inc.



Qualcomm[®] Snapdragon[™] Profiler

Quick Start Guide

October 18, 2016

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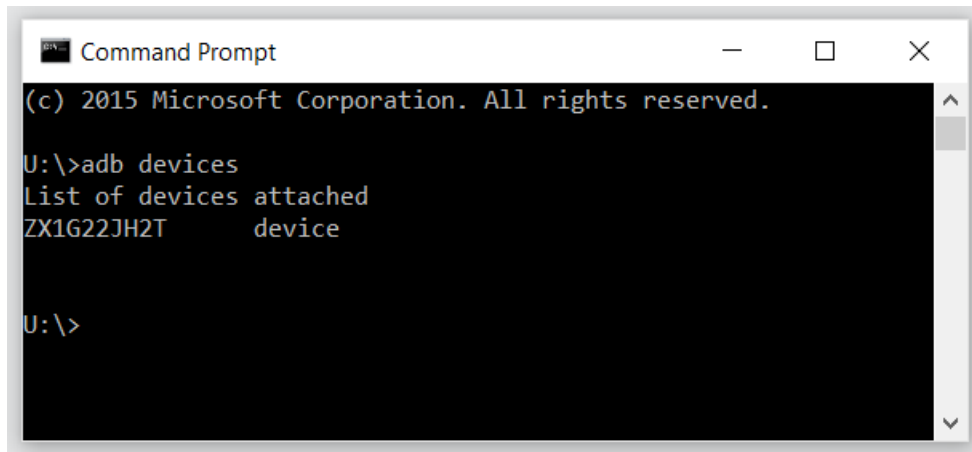
Set Up and Configure Snapdragon Profiler

Follow the steps below to set up and configure Snapdragon Profiler. Skip to Step 4 if the mobile device is already connected to a computer and communicating via ADB.

1. Connect the Android device to a computer where Snapdragon Profiler is installed.
2. Choose **Android Settings > Developer Options** to ensure the device has Developer Options enabled.

If **Developer Options** is not visible, go to **Android Settings > About phone > Software info**, and continuously tap the **Build number** until **Developer Options** is enabled. Go back one step to **Android Settings** to confirm that the **Developer Options** menu item is available.

3. On the Windows PC (or terminal on OS X or Linux), open a **command prompt** and run **adb devices** to confirm that the device is recognized (appears in the **List of devices attached**).
 - a. If ADB does not recognize the device, confirm that the USB connection is in place or ADB has been set up over Wi-Fi. Also verify that the latest ADB USB drivers for the device are installed.
 - b. If ADB recognizes the device, but it shows as **Unauthorized**, the computer will need to be authorized through a pop-up window on the device.



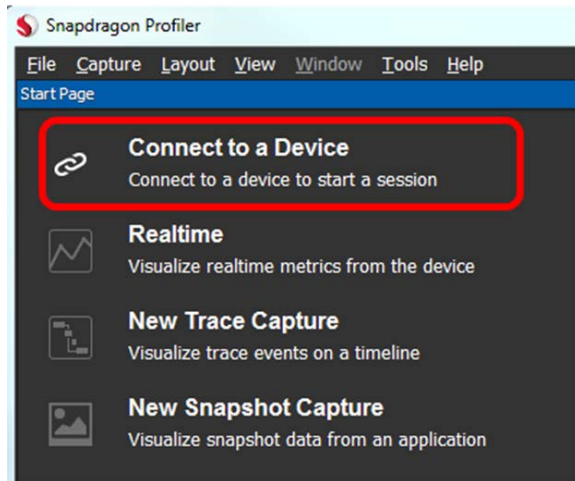
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Command Prompt
(c) 2015 Microsoft Corporation. All rights reserved.

U:\>adb devices
List of devices attached
ZX1G22JH2T    device

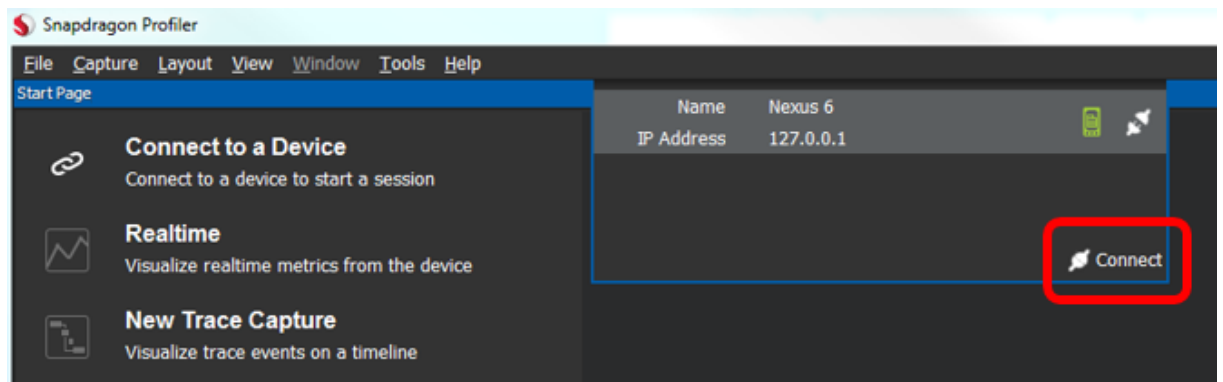
U:\>
```

4. Launch Snapdragon Profiler:
 - a. For Windows, go to **Start > Programs > Qualcomm > Snapdragon Profiler** or double-click on the desktop icon.
 - b. For Mac OS X, go to **Finder > Applications** folder and double-click **Snapdragon Profiler**.
 - c. For Ubuntu Linux, execute the **run_sdp.sh** script from the root Snapdragon Profiler directory.

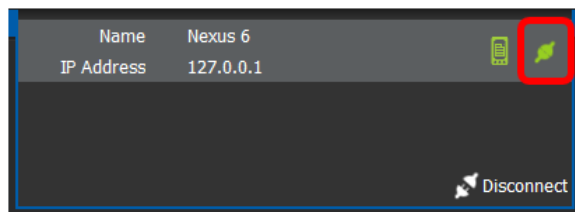
- After launching Snapdragon Profiler, go to **File > Connect**, or click **Connect to a Device** from the *Start Page* as shown:



- The *Connection* window slides open from the top of the main window as shown. Any devices connected to the computer via ADB over USB or Wi-Fi are auto-detected.



- In the *Connection* window, select the device to connect to and click **Connect**. A progress wheel displays while Snapdragon Profiler is connecting to the device followed by a green check to indicate the connection process is complete.
- The *Connection* window minimizes.

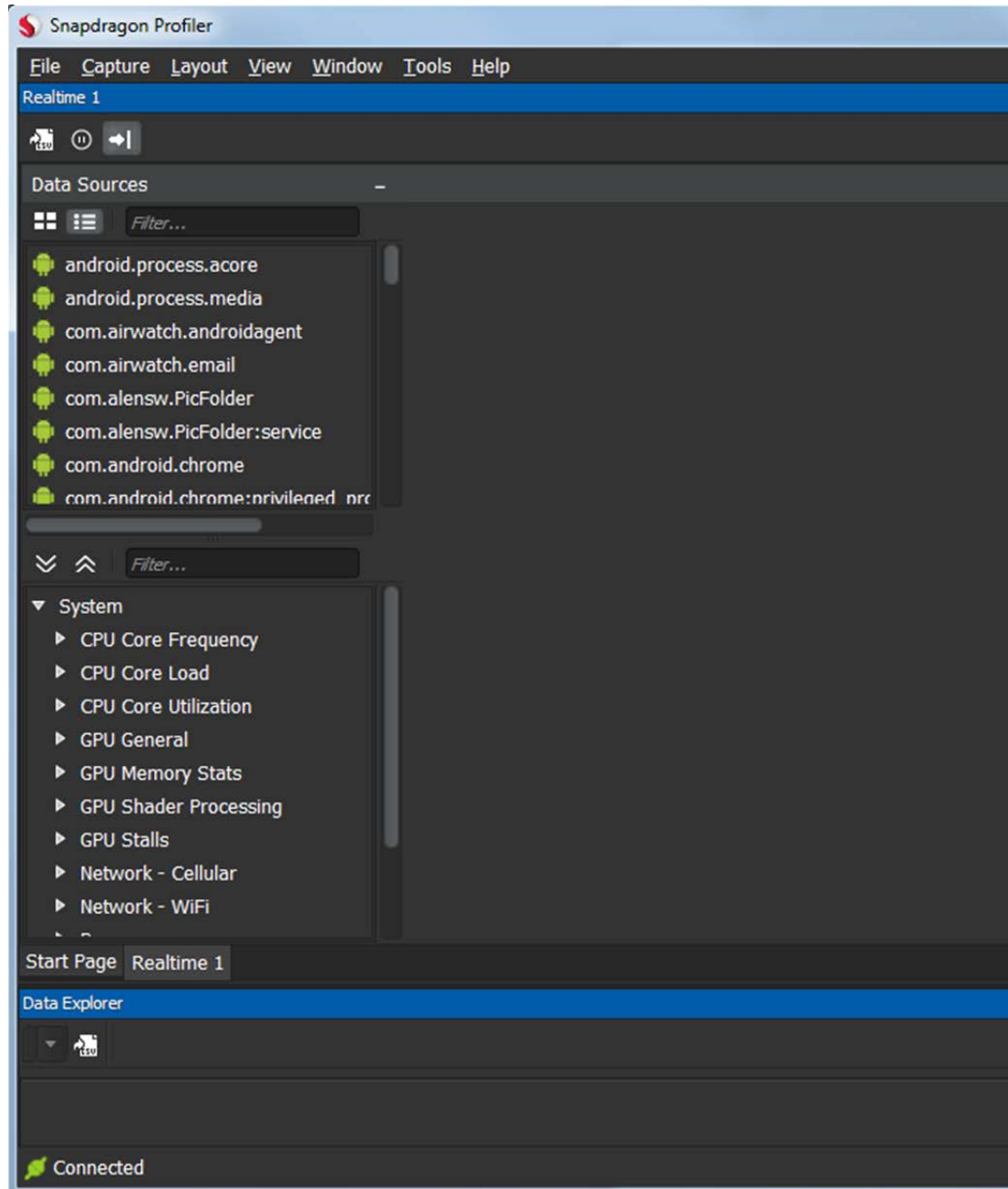


Once connected, use Snapdragon Profiler in one of three modes: Realtime, Trace Capture, or Snapshot Capture.

Use Realtime Mode

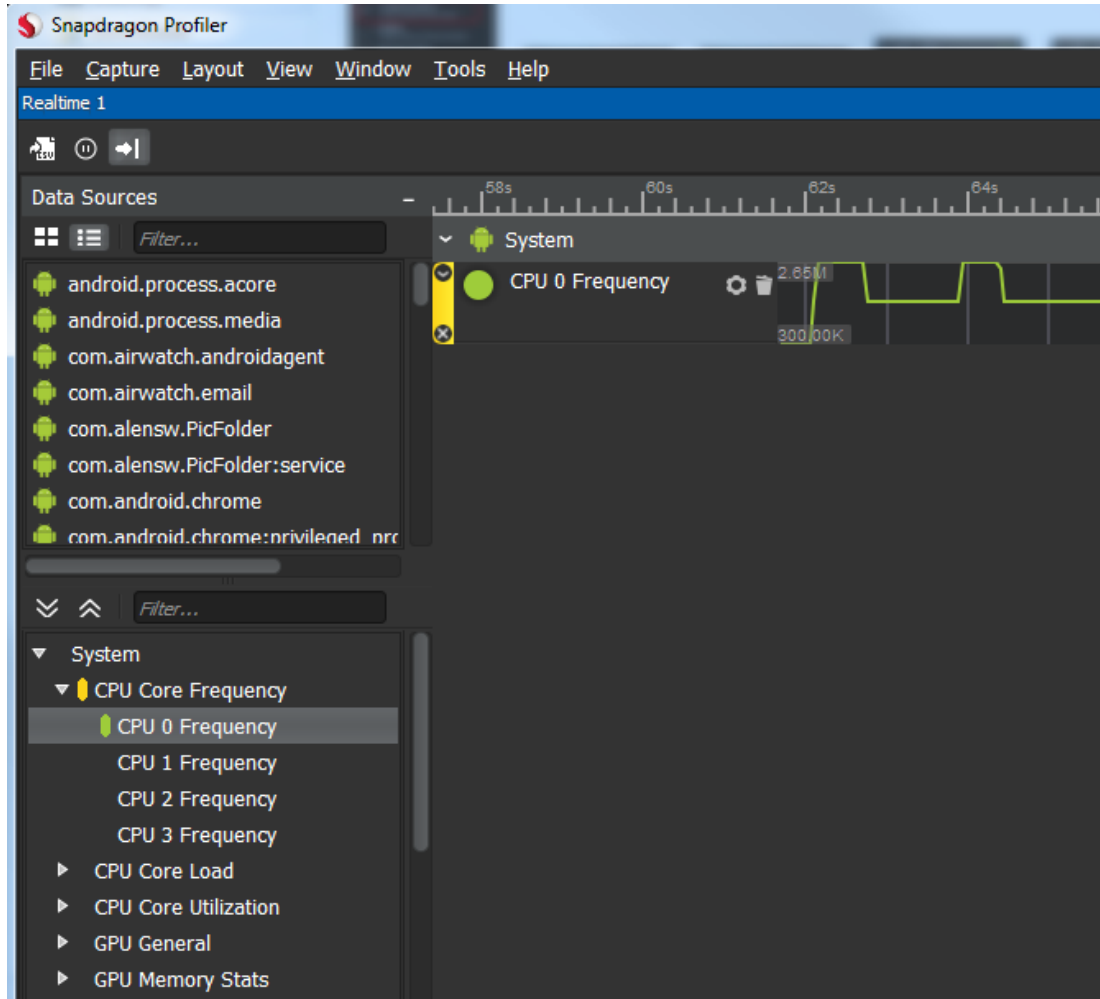
1. From the *Start Page*, click **Realtime**, or click the **Realtime** tab to select and visualize realtime metrics for the application or device. Realtime metrics can be gathered for CPU, GPU, memory, network, power, and thermal.

Here is a sample view of the **Realtime** tab:



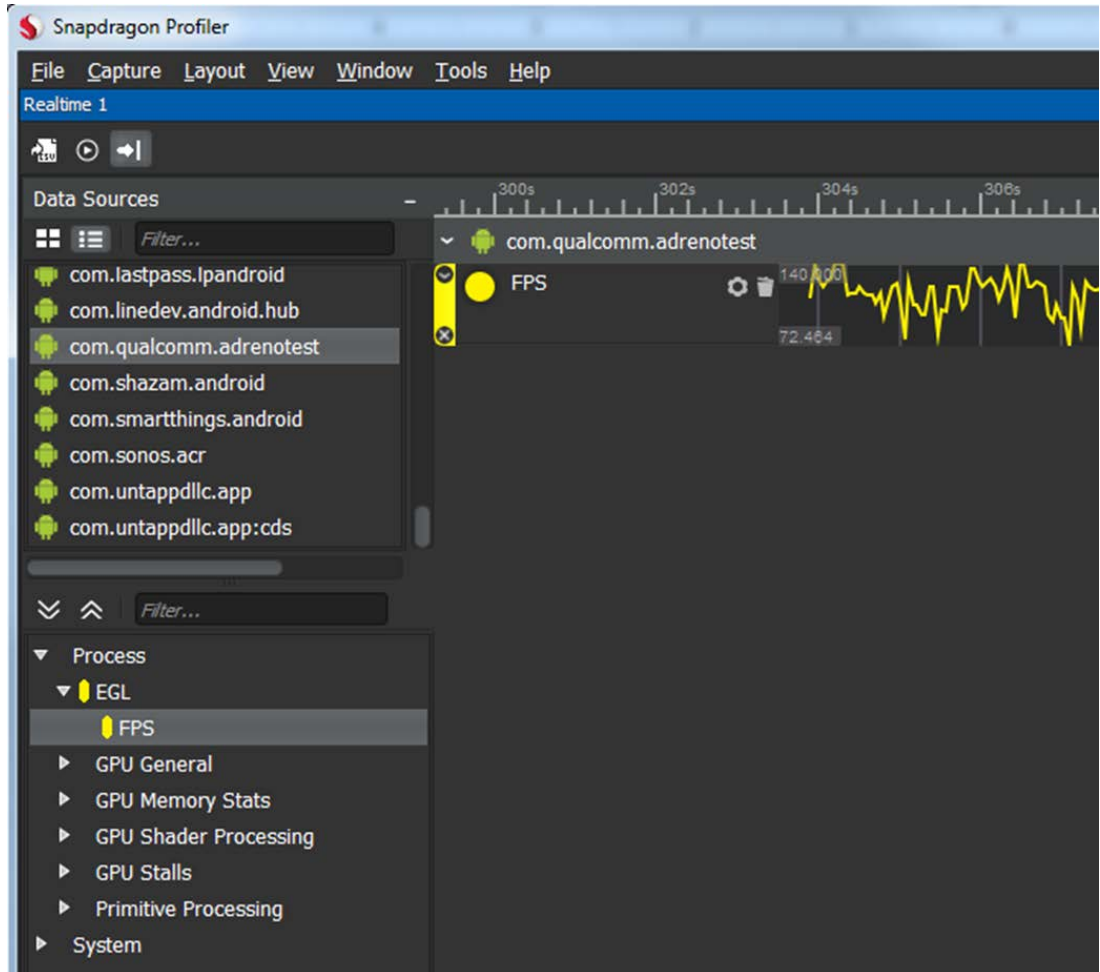
2. On the left of the **Realtime** tab, **System** metrics can be selected from the **Metrics** tree view in the **Data Sources** panel.

To add a new metric graph, double-click the category (to add all the metrics in a category) or an individual metric, or drag-and-drop the category or metric into the **Graph** pane on the right:



3. Application, or per-process, metrics can be viewed by first clicking on a process in the **Process** list shown in the top area of the **Data Sources** panel. The **Process** list shows all active user processes. When a process is selected, metrics available for that process appear in the **Metrics** list.

Adding process metrics to the **Graph** pane is the same as with system metrics – double-click, or drag-and-drop, the category or an individual metric into the pane.



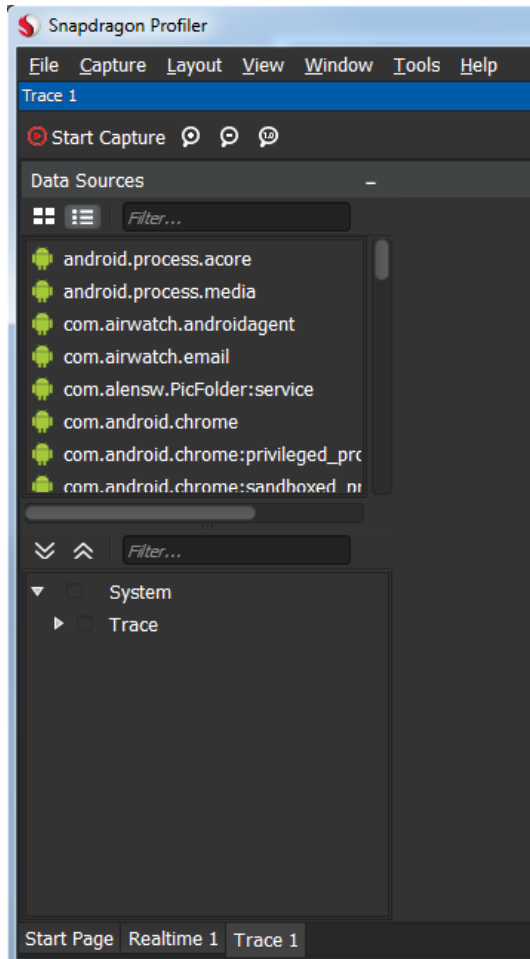
4. System and process metrics can be viewed in the **Graph** pane at the same time. Multiple processes can also be viewed. The more metrics selected and displayed, the more intrusive Snapdragon Profiler is on application performance.



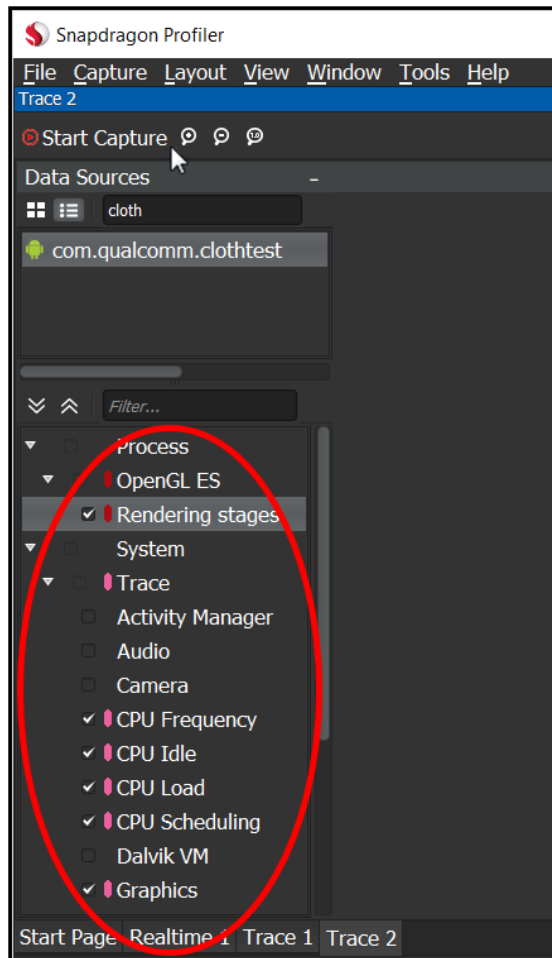
Use Trace Capture Mode

1. From the *Start Page*, click **New Trace Capture** or choose **Capture > New Trace** to view trace-level performance data for the application or device.

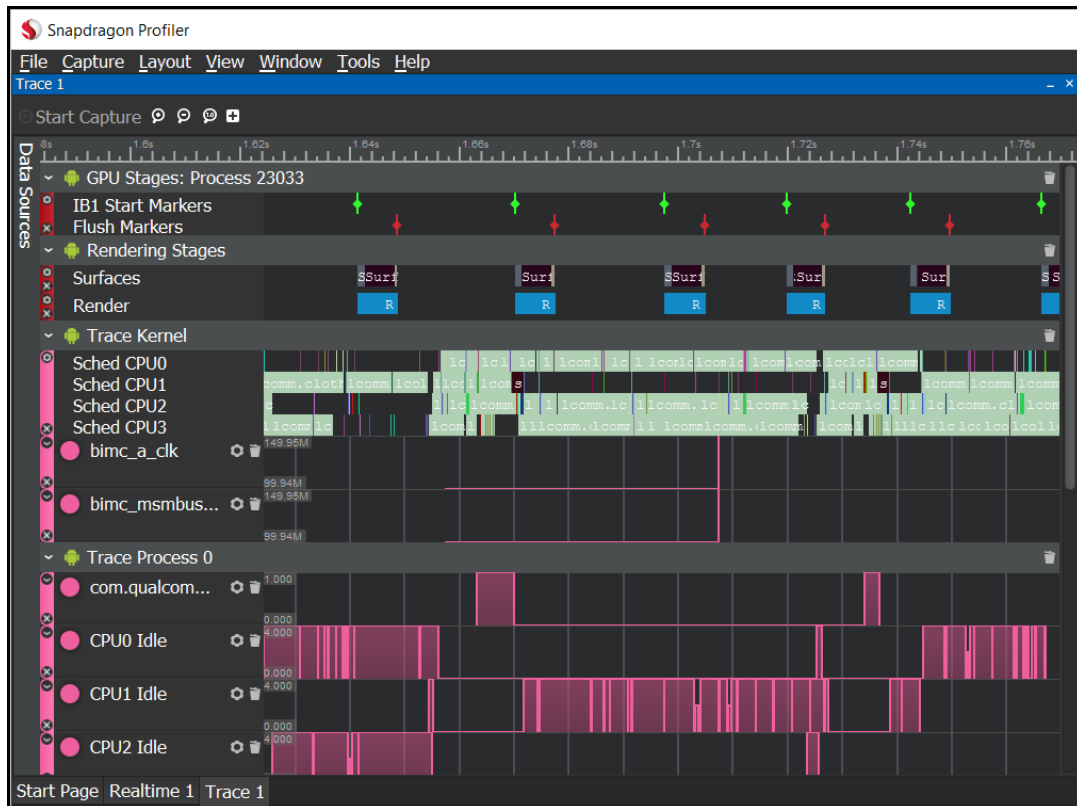
A new **Capture** tab is created. When this tab is selected, a view similar to **Realtime** is displayed except traces have **Start Capture** and **Stop Capture** buttons.



2. From the **Data Sources** panel, choose the metrics to view. Choose a process from the **Process** list to view metrics specific to that process, if any exist.
3. Once the metrics are selected, click **Start Capture** to start the trace capture.



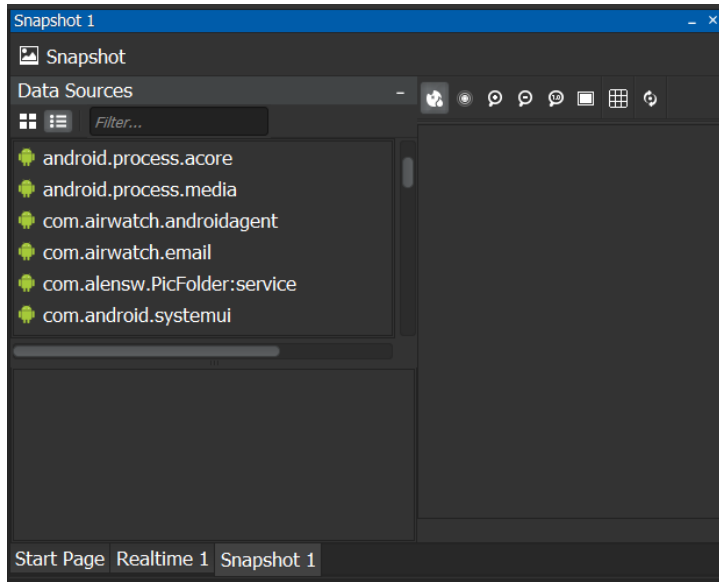
4. Click **Stop Capture** to stop the trace capture. Note that Snapdragon Profiler does not allow trace captures longer than 10 seconds.



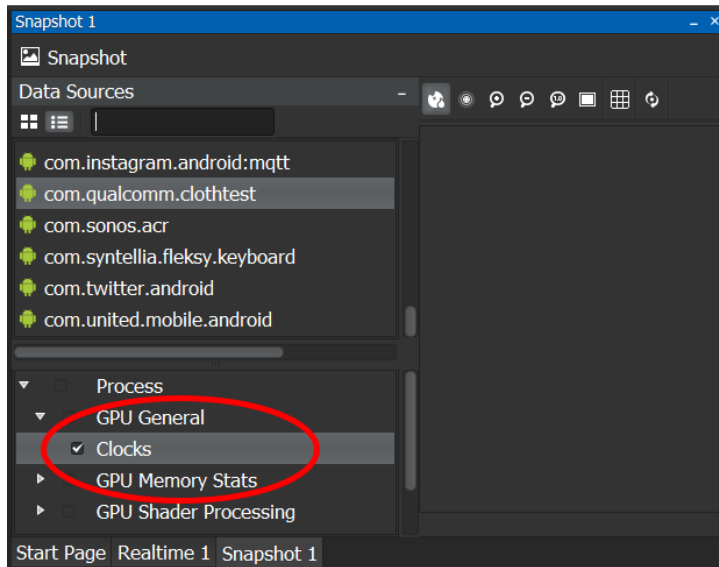
Use Snapshot Capture Mode

1. From the *Start Page*, click **New Snapshot Capture** or choose **Capture > New Snapshot** to open a view that allows a single frame of the graphics application to be captured. A new **Snapshot** tab is displayed:

NOTE: Snapdragon Capture mode currently works only on mobile devices with a Qualcomm Snapdragon 805 (or later) processor and Android 6.0 (or later)



2. From the **Snapshot** tab, scroll through the **Data Sources** list and choose a process. The metrics available for the process appear in the **Processes** list on the lower left:



- Click the metrics to view in the snapshot, then click **Snapshot Capture** to capture the frame. Once captured, view the captured data and step through the frame rendering drawcall-by-drawcall.

