To capture profile data, your Google Cloud project must have the Profiler API enabled and you must have a role that allows you to modify the project.

If the Profiler API isn't enabled, a message similar to the following is displayed:

To resolve this situation, enable the API. For instructions, see the instructions in Before you begin (/profiler/docs/samples#before_you_begin).

If you don't have the permission to write profiling data, a message similar to the following is displayed:

To resolve this situation, ask your administrator to grant you additional permissions. For a detailed list of the required permissions and roles, see Access control (/profiler/docs/iam).

If you aren't running on Google Cloud, you must create a service account and link the Profiler agent to your Google Cloud project. For more information, go to Profiling outside of Google Cloud (/profiler/docs/profiling-external).

If you are running on Google Cloud and deploying a container on Compute Engine, you need to specify your Google Cloud project ID in the Profiler agent `start` command. For instructions, go to Linking the agent to a Google Cloud project (/profiler/docs/profiling-external#linking_the_agent_to_a_project).

If you click a frame, the flame graph is redrawn and changes how the graph is displayed. Clicking a frame doesn't change any settings:

- To restore a standard flame graph to its original state, select the root (top) frame (/profiler/docs/interacting-flame-graph#frame-click).
- To restore a focused flame graph to its original state, select the frame that displays the value of the **Focus** filter (/profiler/docs/focusing-profiles#frame-click). For example, if your filter bar contains `Focus: Sort`, click the frame with the label `Sort`.

When you click **Now** a new range of time is defined. Your graph might change because Profiler identifies all of the available profiles that meet the new range of time and randomly selects 250 for analysis.

For more information, go to Range of time (/profiler/docs/selecting-profiles#time-config).

For a discussion and an example of these three features, go to Focused graph explained (/profiler/docs/focusing-profiles#focused_graph_explained).

In the context of profiling, total and self identify what functions contribute to the metric value. For example, the total CPU time of a function is the CPU time used by the function and includes the CPU time used by its children. In contrast, the self CPU time of a function excludes the contribution of the function's children.