Module: 5 Instance Maintenance

5.1 Tracking logs issues

There can be multiple reasons for tracking logs not being forwarded. We recommend that you check the following information:

- **Does the Tracking workflow have errors?**
  
  Refer to [Monitoring technical workflows](#).

- **Is the module trackinglogd running on the server?**
  
  Refer to [Log files](#).

- **Have changes been made?**
  
  They can trigger a loss of connection to the servers using the tracking alias.
5.2 Log precision

You can apply this process to all Adobe Campaign modules to increase log precision.

It involves relaunching the processes with a higher level of logs.

IMPORTANT

This procedure cancels the services in progress on this module.

Adobe Campaign can operate with two levels of log:

1. The **Verbose** mode is the first level after the standard level. The following command activates it:

   ```
   nlserver restart <MODULE_NAME> -verbose
   ```

   Check that the error actually occurred, and then restart the process in the normal way:

   ```
   nlserver restart <MODULE_NAME> -noconsole
   ```

   The **TraceFilter** mode, which lets you save the greatest number of logs. It is activated by the following command:

   ```
   nlserver stop <MODULE_NAME>; nlserver <MODULE_NAME> -verbose -tracefilter:*
   ```

NOTE

If you use `tracefilter:*`, all log types are activated: ncm, rdr, nms, jst, timing, wdbc, ldap, soap, xtk, xtkquery, session, xtkwriter, network, pop3, inmail

The most useful log types are: **wdbc** (displays all SQL queries), **soap** (displays all SOAP calls), **ldap** (displays all LDAP queries after authentication), **xtkquery** (displays the list of all the querydef).

You can use them individually (**tracefilter:soap,wdbc** for example). You can also activate them all and choose to exclude certain others: **-tracefilter:*,!soap**

Check that the error actually occurred, and then restart the process in the normal way:
IMPORTANT

The logs of these commands are stored in the log file of the module.

Here is an example specific to the Web module. The other modules operate as indicated above.

Before sending this command, check that no job in progress will be affected:

```
nlserver pdump -who
```

Next, shut down and restart the module in **TraceFilter** mode:

```
nlserver stop web; LD_PRELOAD=libjsig.so nlserver web -tomcat -verbose -tracefilter:* -tracefile:web_debug@default
```

Another example:

```
nlserver stop mta@<INSTANCE_NAME>; nlserver mta -instance:<INSTANCE_NAME> -tracefilter:* -tracefile:mta_debug@<INSTANCE_NAME>
```

**NOTE**

The **Tracefile** mode lets you save the logs. In the examples above, the logs are saved in the `var/<instance-name>/mta_debug.log` and `var/default/web_debug.log` files.

**IMPORTANT**

In Windows, do not add the LD_PRELOAD option. The following command suffices:

```
nlserver web -tomcat -verbose -tracefilter:*
```

Check that the problem occurs again, and then restart the module:

```
nlserver restart web -tomcat -noconsole
```

All information is available in the file `/usr/local/neolane/nl6/var/default/log/web.log`. 
5.3 Workflow HeatMap

Campaign Workflow HeatMap consists in a color-coded graphical representation of all the workflows that are currently running. It is only available to Campaign Administrators.

Discover additional ways to monitor Campaign processes in this page.

Get started with the Workflow HeatMap

By providing a quick overview on the number of concurrent workflows, the Workflow HeatMap enables the Adobe Campaign platform administrators to monitor the load on the instance and plan workflows accordingly.

More precisely, it helps the platform administrators to:

- See and understand concurrent workflows
- Filter workflows by duration to see which workflows may encounter issues
- Filter activities by duration to see which activities may encounter issues
- Easily find individual workflows and all related activities (with their duration)
- Filter by workflow type: technical workflows or campaign workflows
- Look for a specific workflow to analyze

NOTE

In addition to the Workflow Heatmap, you can create a workflow that will let you monitor the status of a set of workflows and send recurring messages to supervisors. For more on this, refer to the dedicated section.

Using the Workflow HeatMap requires to have a good understanding of the following concepts: Workflows, Activities and Workflow Best Practices.

Customize the Workflow HeatMap

NOTE

If no data is displayed in the Workflow HeatMap, click the Load data button.

1. Go to Monitoring and click the Workflow HeatMap link to display the Campaign Workflow HeatMap page.
2. Click the calendar to select a day.

   By default, the page shows the workflow activity for the current day. You can change it and select any day in the past.

   **NOTE**

   Only the workflows that have not been deleted by the **Database cleanup** workflow are visible. For more on the Database cleanup workflow, refer to this section. By default, the Workflow HeatMap time zone is the one defined for the current administrator user. For example, you may want to change it if you are not in the same area as the marketing users you are working with.

3. Click the **Filters** button.
4. Use the slider to set the minimum duration from 0 second to 1 hour. This enables you to search only workflows running for more than a certain number of seconds or minutes.
5. You can also choose a specific workflow from the Workflows drop-down list.

NOTE

The Min duration filter is applied. If you cannot find a specific workflow, reset the minimum duration to 0 so that all workflows are displayed in the list.
6. You can also filter on the **Workflow type**:
   - **Technical**: Only *out-of-the-box technical workflows* and *data management workflows* are displayed.
   - **Marketing**: Only workflows linked to a marketing campaign, known as *campaign workflows*, are displayed.

7. To search a specific workflow by name, you can also use the **Workflow name filter** field.

8. If you edited some workflows in the time between, click the **Reload data** button to refresh the data that are displayed in the grid.

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**Interpret the Workflow HeatMap**

The Campaign Workflow HeatMap is a grid naturally readable from upper left to bottom right, allowing to find the “hot zones” with a green to red color-coded range.

- The darker red cells correspond to periods when a high number of workflows are running at the same time.
- The grey cells correspond to periods when no workflow is running.

To learn how the color code is applied and how to navigate the HeatMap, click the **Help** button.

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**Campaign Workflow HeatMap**

*Select a day*: 2021-05-15  GMT

*Filters...* | *Help...* | *Load data*

**Controls**:
- Arrows: Navigate through the HeatMap
- Shift + arrows: Jump to next non-empty cell
- Ctrl + arrows: Go to next or previous day

**Color legend**: 1 2 3 5 8 12 18 24 30 38 50

Each row represents an hour of the day and each cell represents 5 minutes of that hour.

The grid shows all the workflows that are running at the same time for each of these 5-minute periods.

In the example below, between 8am and 8:05am, three workflows are running (no matter their individual duration):
1. Click a colored cell to display the details of all concurrent workflows running during this period.

For each workflow, all the activities that it contains are listed, with their duration.

2. Click the workflow ID or name to directly open a workflow.
3. To go back to the Campaign Workflow HeatMap view, click the Home button.

Use cases: use the HeatMap to take actions

There are two main cases where the Campaign Workflow HeatMap can be useful.

Reduce the number of concurrent workflows

As a Campaign administrator, the Workflow HeatMap can help you to understand the load on the instance and plan existing or new workflows at appropriate times.

1. From the Campaign Workflow HeatMap view, click the Filters button.
2. Set duration to a few seconds or a few minutes.
3. Exclude the shortest workflows that are not significant by increasing the duration filter.

<table>
<thead>
<tr>
<th>Min duration (seconds):</th>
<th>3 minutes (189)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workflows</td>
<td>all (all)</td>
</tr>
<tr>
<td>Workflow type</td>
<td>all</td>
</tr>
<tr>
<td>Workflow name filter</td>
<td></td>
</tr>
</tbody>
</table>

4. Explore the results to understand the load on the instance and take appropriate actions:
   - If you encounter performance issues and if one or more red cells are displayed in the grid, consider changing several workflows’ starting times. Ask the marketing users to move manually workflows from busy (“hot”) periods to more available time slots. This should maintain a stable level of activity along the day.
   - To avoid peaks and prevent the instance from overload, look at the HeatMap before planning new workflows and choose the best time. Consider time slots corresponding to grey or green cells in the grid to start new workflows.

Find long-running workflows that impact performances

As a Campaign administrator, the Workflow HeatMap helps you to find the longest workflows which can slow down the activity.

1. From the Campaign Workflow HeatMap view, click the Filters button.
2. Set duration to 1 hour.
3. Include more results by decreasing the **Min duration** filter.
4. Explore the results to find the longest workflows, who can potentially have more impact on the server and database resources (CPU, RAM, network, IOPS, and so on).
5. Take appropriate actions:
   - Advise marketing users to split the longest workflows to reduce processing time.
   - Start a deeper analyze on specific workflows and specific activities (such as JavaScript, import, export, and so on) to isolate the issues and solve them more easily.

**Use the HeatMap to improve workflow planning**

The example below shows how planning can be more efficient and how performance can be improved when using the Adobe Campaign Workflow HeatMap.

In this case, many users are complaining about workflow performance. You need to check what is slowing down the activity and how to solve the problem.

1. Go to **Monitoring** and click the **Workflows** link to display the Campaign Workflow HeatMap page.
2. Set the **Min duration** filter to 5 minutes.
3. Set the **Workflow type** filter to **Marketing**.
4. From the HeatMap grid, observe the following:
- Fifty long-lasting (more than 5 minutes) campaign workflows are running at 10am.
- Most of them have a pending state (by default, the concurrency limit is set to 20).
- The pending workflows need to be manually restarted every day.
- Performance is low.

5. Instead of having fifty workflows starting at 10am, distribute the workflows’ starting times evenly throughout the rest of the day.

6. Go back to the **Campaign Workflow HeatMap** page and click the **Reload data** button.

7. Now observe the following:
- Only eighteen long-lasting campaign workflows are still running at 10am.
- No more workflows are in pending state (the concurrency limit is still set to 20).
- Workflow starting times are evenly distributed throughout the day.
- No more users are complaining about performance issues.