Monitoring and Troubleshooting Structure Usage

The best way to check statistics on Structure usage, see structure sizes and assess load time is to check the Performance Audit Log (PAL). To open it, go to **Administration | Structure | Support | View Performance Audit Log**.

> ⚠️ If you have a Data Center instance, you will need to collect and analyze the Performance Audit Log from every node. When a user opens a structure while being on a certain node, structure will execute all the required operations on that node.

There is no built-in parser, but you can write a simple script to parse the PAL files, search for a structure in the file based on the criteria you need and send alerts if certain problems are found.

Reading the Performance Audit Log

The following breaks down how the PAL file is structured.

Basic Instance Information

Lists the version of Jira and Structure.

Structures Descriptions

This section contains descriptions of structures, which includes:

- Structure names and IDs
- Generators with all their parameters
- Synchronizers with all their parameters
- If Manual Adjustments are enabled for a structure, information on such adjustments
- If any saved filters are used in the generators or synchronizers, the JQLs for such filters

Forest Caches

This section details recently accessed structures. It includes the following information:

- structureId - id of the structure
- count of rows - total number of items in the structure, including generators and folders
- unique items count - number of unique items
- item types - number of items by type (how many of the items are issues, generators, folders or loop markers)
- counts on depths - number of items on each level with the first number being the top level

When reviewing the Forest Caches, you should look for:

- The sizes of structures. Larger structures (tens of thousands of rows) can impact performance and are often avoidable. If you're seeing a lot of large structures, or frequent use of large structures, it might make sense to check with the users and see if there is an easier (or more efficient) way to view the same information. See Building Efficient Structures With Automation.
- The number of rows vs unique items. If the number of rows is much bigger than the number of unique items, it means there are multiple duplicates in this structure. Sometimes this is necessary, but in many cases it indicates the structure was built incorrectly or inefficiently. See Building Efficient Structures With Automation.
- In the types section, you may see "type-loop-marker" records. This indicates that the generators in a structure are producing a loop. This could simply be the result of visualizing a link relationship where there is a cyclical link. Or it could indicate a larger problem with the data or an incorrect configuration, which could result in multiple loop markers. In such cases, it's a good idea to check why they are there. If 5-10% of all items are loop markers, it is recommended that you carefully review the structure configuration.

Forest Changes Updates

This section shows the time in ms it took to load a structure or update the one already open. Full update means the structure was fully reloaded. Incremental update means some changes happened in Jira, and a part of the structure was adjusted.

We recommend carefully monitoring loading times. If these times become very large, it's an indication that these structures may require attention. Larger structures will naturally require more loading time (sometimes over a minute for very big and complex structures), but you should still monitor for any changes - if loading times suddenly became much longer, this may indicate a problem.

Attribute Service

This section contains some technical information used by ALM Works for further troubleshooting.

Saved Filters with S-JQL

If you are using S-JQL in any saved filters, such filters will be listed here.

Whenever an S-JQL query is executed, the structure it references must be generated. This means every time the saved filter is used (either explicitly or, for example, on the Agile board), the associated structure is generated, whether users are actually opening the structure or not. This may affect performance, particular if the S-JQL is referencing large structures.

Gantt Settings

This section lists those structures that have Gantt charts configured and the configuration details.