Shopfloor Connectivity

Version 5.11

Manual

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	Author: Ali Egilmez

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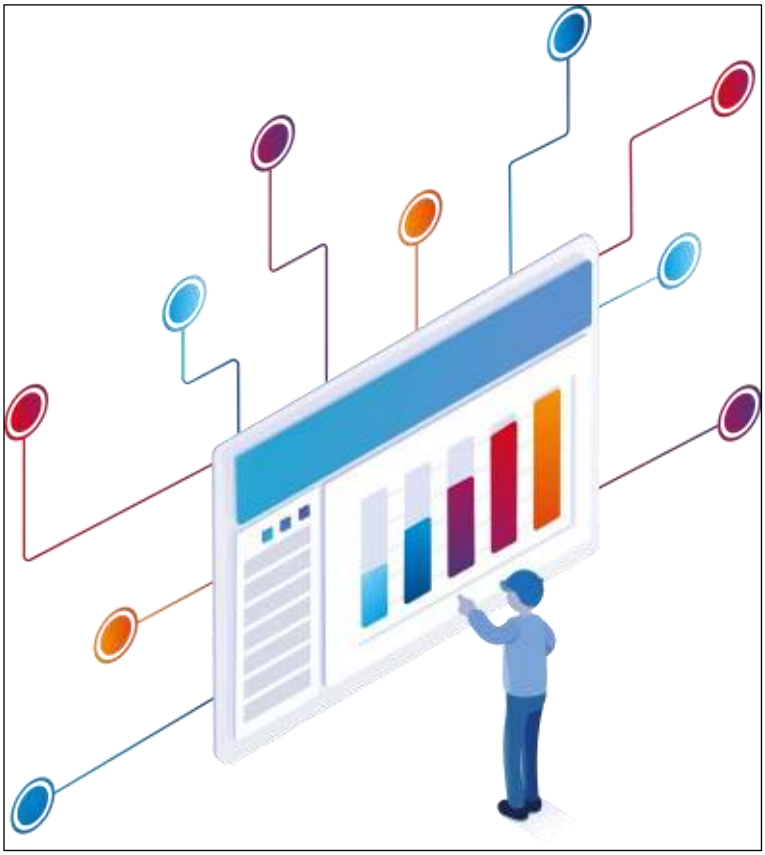
1 Concept

The **Shopfloor Connectivity** module of FORCAM FORCE IIOT lets you publish customer-specific endpoints via BridgeAPI. This is an extension of the standard interfaces provided via BridgeAPI. The FORCAM internal SQL database serves as the underlying data for an individual endpoint. This means that any data present there can be made available on the BridgeAPI via an endpoint.

ⓘ Data from the traceability environment, which are located in the document-oriented database MONGODB, are excluded.

This manual will guide you through the configuration of this tool and give examples. Knowledge of how to use FORCAM's BridgeAPI is prerequisite.
The configuration can be done completely in the **Webservice Editor** tab so this manual will only cover this tab. The other tabs in this module, such as SQL Browser or Filter Criteria, are for support only, for example, to look up necessary data or to adjust the configuration accordingly.

ⓘ To utilize this manual, in-depth knowledge of SQL programming as well as of FORCAM FORCE IIOT database structures is required. If necessary, it is recommended to contact FORCAM's Professional Service for assistance.



2 Configuration

Path: System Administration > Shopfloor Connectivity > Webservice Editor

Endpoints for webservices are created in the Webservice Editor.
It takes several steps with substeps to create an endpoint. The following instruction is therefore divided into general configuration, filters, SQL and items. However, the endpoint cannot be saved until at least SQL and items have been configured.

To create a new endpoint:

1. Click on **+ New** .
2. Enter a resource name in the **Editor** tab (mandatory field).
   Used for unique identification of the endpoint. If possible, use a name that describes the endpoint's function.
   The name may not have any blank spaces.
3. Enter sub-resource name.
   Provides a clearly arranged overview in the webservices. For each endpoint in the navigator, the resource is listed first and the sub-resource is added after a slash. E.g. standardreports/qualityreportmaterial.
   The sub-resource name must be different from the resource name.
4. Enter a description of the endpoint.
5. Add filter.
6. Enter the desired SQL statement.
7. Add items.
8. Save.
9. Switch to the Webservice tab and click on the refresh icon.
   ➔ Requests and responses are generated based on the configuration of the endpoint.

the endpoint is generated after successful configuration in the **Webservice** tab.
The **GET request** contains a URL that can be used to call the interface.
The **Response** area will show a sample response of the newly created interface. It shows how the data is returned.

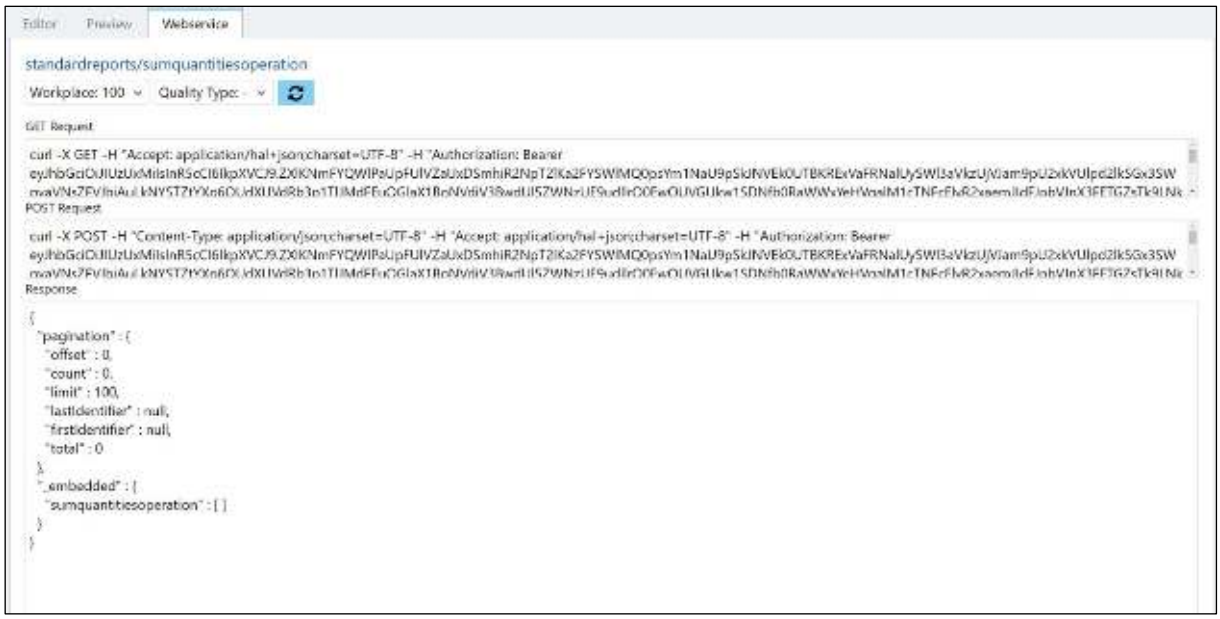


Fig. 1: Webservice endpoint generated by Shopfloor Connectivity

3 Filter

To add a filter:

1. In the Filter area, click the add icon at the right.
2. At the top of the subsequent dialog, select whether a custom filter or a default filter should be used.
   When **Use default filter** is selected, the editor is disabled in the dialog and a previously defined filter can be selected from the drop-down menu. Filters are already included for standard objects in FORCAM FORCE IIOT (e.g. shift, workplace, etc.).
   If **Define custom filter** is selected, the drop-down menu is disabled and a custom filter can be configured in the editor. The next steps are based on this selection.
3. At the top right of the dialog, enter a filter identifier for the API.
   Determines what the filter in the URL is named. Blank spaces and special characters are not allowed.
4. Enter the name (mandatory field) and a description of the filter in the editor.
5. Enter filter identifier.
   This is used to uniquely identify the filter.
6. Select data type in the drop-down menu.
   Specifies which type of data is to be displayed (e.g. number, string, etc.).
7. Declare filter as mandatory field.
   If **Mandatory** is checked, the filter criteria must be specified in the report for it to run.
8. Click on **Add**.

In the following example, a filter is configured to filter the workplace name.

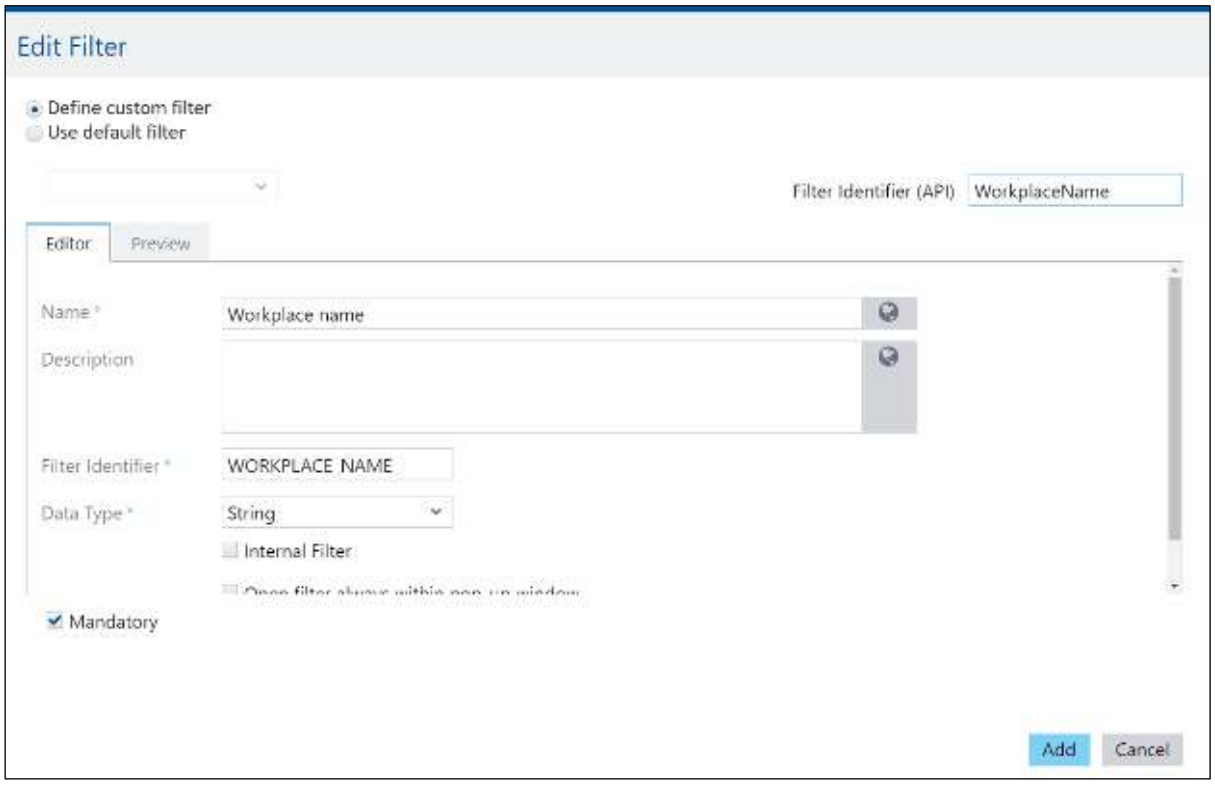


Fig. 2: Sample filter by workplace name

When the filter is expanded in the preview, it contains a free input field. Here you can search for a workplace by entering any string of characters.

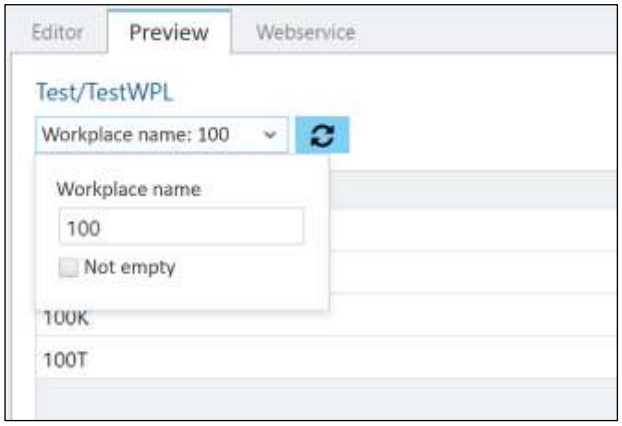


Fig. 3: Applied workplace filter

4 SQL

The following example shows a simple SQL statement that is to export the workplace name:

```
SELECT NAME
FROM FR_MD_WORKPLACE
WHERE @WORKPLACE_NAME(NAME)
```

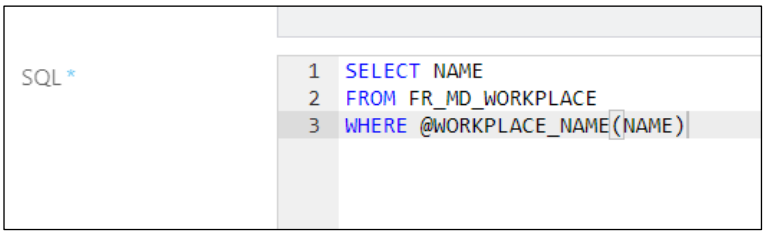


Fig. 4: SQL statement for the workplace name

The SQL field to be filtered or referenced is entered in the parentheses, in this example the name of the workplace. This is the relevant column in the database table.
For example if "100" is entered in the filter to search for a workplace that has this in its name, the SQL statement is supplemented. NAME becomes NAME=100 within the system.

The GET request exports a URL through which the endpoint can then be available externally. The name of the endpoint and the time zone, as well as the current filter (here: 100) can be read from it.

Fig. 5: Filter by workplace name in the URL from the GET request

5 Items

Column identifiers from the database table are inserted in the **Items** area. By clicking on the “Generate” icon in the upper right corner, all columns are taken from the SQL statement and automatically listed in the “Items” area. Items can be added manually using the “Add” icon directly below the “Generate” icon.

Fig. 6: Item NAME automatically generated from SQL statement