

Welcome to the SMS Splunk App for SAP Plant Maintenance (PM)

Using this app you can import SAP PM data into Splunk. This overview will walk you through configuring the Splunk portion of the app.

Configure the SAP Login Credentials

The first thing you need to do is configure the credentials required to connect to SAP.

1. Navigate to Apps → Manage Apps → SMS App for SAP PM → Set up
2. Enter the Configuration Name. By default this is "sap", and the UI always shows the default "sap" configuration. Use "sap_dev" or another name to support different SAP environments with separate URLs and username/passwords. You can then select what environment to use in the data input and alert configurations (details below)
3. Note SAP uses Basic Authentication. Enter the username and password
4. Click Save. This will take you to a Settings page in Splunk, and this confirms the setting was configured. If you need to change these settings, go back to "Set up" and re-enter them.

Import SAP Data Into Splunk

The app can import SAP business objects into Splunk. Below are the steps required to import this data.

1. Navigate to Settings → Data inputs
2. Find "SMS App for SAP PM" and click "+ Add new"
3. Name the Connection (ex. SAP_WO)
4. Configure the SAP URL to poll (ex. https://sap_instance.com/esr/api/eam/v1/GetAsset)
5. Configure the Query Parameters. These provide a filter when querying SAP for data. See the section below for more details
 - ex. LASTCHANGEDATE=20000131
6. Configure the time attribute. Set this to the SAP time field (ex. ERDAT) you want to use for the Splunk event index time. Leave this blank if you want the Splunk index time to be the time of import
7. Configure the Polling Interval. This is either in seconds (ex. 10 is 10 seconds) or a cron syntax. When using seconds, Splunk will poll SAP as soon as the input is enabled, and then wait X seconds and poll again. When using cron, Splunk will wait for the first cron to expire before polling SAP. Once polled, Splunk will continue to poll SAP until all the data for the object is retrieved. At this point, Splunk will wait for the next cron to expire before polling again.
8. Configure the SAP Environment. Leave this blank to use the default "sap" environment or change this to the name of the environment you wish to use. This controls what credentials the data input will use
9. Note that all imported data is indexed in Splunk using the server time that the data was imported.
10. To confirm data is importing, go to Apps → Search & Reporting and search for the data you imported

11. If you don't see data importing, see the troubleshooting section below

Query Parameter Fields

- **LASTCHANGEDATE:** Only import records newer than this date. The date is in YYYYMMDD format or YYYYMMDDhhmm for Work Orders which support date and time

Creating Work Orders From Splunk

The app can create work orders in SAP using Splunk alerts/triggers. Below are the steps for creating a work order.

1. Create an alert in Splunk by going to the "Settings -> Searches, reports, alerts". Click "New Alert" in the top right.
2. Set the Alert Type to Realtime and define the Search using the Kepware tag (ex. "source="kepware" tagName="motor.d1.inbound_bearing_temp" tagValue>30 | head 1)
3. Under "Triggered Actions" add the SAP action. Enter the SAP URL (ex. <https://sapinstance.com/esr/api/eam/v1/WorkOrder>) for the GET and POST requests
4. Enter the Inputs for the POST request. This must include the asset, but can also include the location, priority, and work order type (ex. asset=UNIMOG-19&description=\$result.Tag\$&priority=1&wotype=PM02). If not included, priority defaults to 1 and wotype defaults to PM02. Description defaults to tagname=tagvalue
5. Use Kepware to change the tag value to trigger an alert.
6. Search SAP for the work order, using the asset information. The description will be "tagname" or the description you provided in INPUTS
7. Note the app will not allow multiple work orders to be created for the same condition. The app will query the asset for open work orders that have the same tagname in the description. If it finds one, a new work order is not created.

Troubleshooting

If you're having issues with importing SAP data, go to search and enter the following to see any errors being generated by the script.

- `index=_internal ExecProcessor sms_sap.py // for all logs`
- `index=_internal ExecProcessor error sms_sap.py // for error logs`

If you're having issues creating work orders go to "Settings | Alert actions" and look for "SMS - Create SAP Work Order". Click "View log events" to the right to see all the logs for the alert scripts.

- `index=_internal sourcetype=splunkd component=sendmodalert action="sms_sap_alert"`

Here are example SAP objects you can import and their query parameters and time fields.

- **ASSET**
 - `https://sap_instance.com/esr/api/eam/v1/GetAsset`

- LASTCHANGEDATE=20000131
- LOCATION
 - https://sap_instance.com/esr/api/eam/v1/GetLocation
 - LASTCHANGEDATE=20000131
- WORKORDER
 - https://sap_instance.com/esr/api/eam/v1/GetWorkOrder
 - LASTCHANGEDATE=200001310000

Self-signed Certificates

If the SAP instance uses a self-signed certificate for https you'll need to place the .pem file in the sms_sap/bin/cert directory. Create the directory if it does not exist. The filename does not matter but it must contain the SAP public server certificate and the public certificates for the entire trust chain. This certificate will then be used to validate the SAP server during requests. You can also disable certificate validation in the app settings, although this approach is not recommended.

SAP Environments

The add-on supports multiple SAP environments through the main setup page. Enter the name of the environment along with the configuration (username/password, etc) and the information is saved to the local/sap.conf and local/passwords.conf files under the configuration name you provide. The data inputs and alerts include a "SAP Environment" field to enter the name of the environment you wish to use.