SAP PowerConnect Java Installation Instructions

Introduction

This document details the installation instructions for the SAP PowerConnect Java monitoring agent.

Prerequisites

SAP PowerConnect Java has the following requirements:

- SAP NetWeaver 7.3 and above
- 100 MB free disk space
- Administrator access to the SAP NetWeaver system

Installation

The installation has the following high level steps:

1. Installation of the software
    a. Sap PowerConnect Java monitoring agent
    b. Sap PowerConnect configuration GUI
2. Configuration of Splunk
3. Initialization of database table to store configuration
4. Granting JMX security permissions
5. Configuration of Sap PowerConnect Agent

Installing the Sap PowerConnect Java monitoring agent

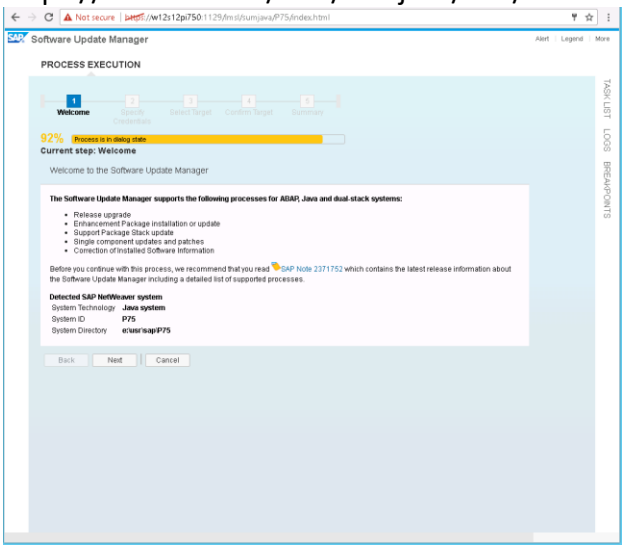
To install the Sap PowerConnect Java monitoring agent perform the following steps:

1. Acquire the PowerConnect agent from file from sap-powerconnect-java-X.X.sca BNW Consulting

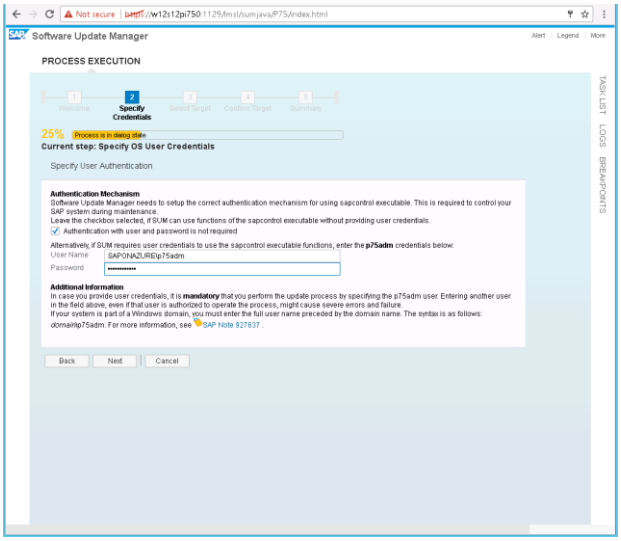
2. Deploy the .SCA using SAP Software Update Manager (SUM) and ensure its listening on port 1129

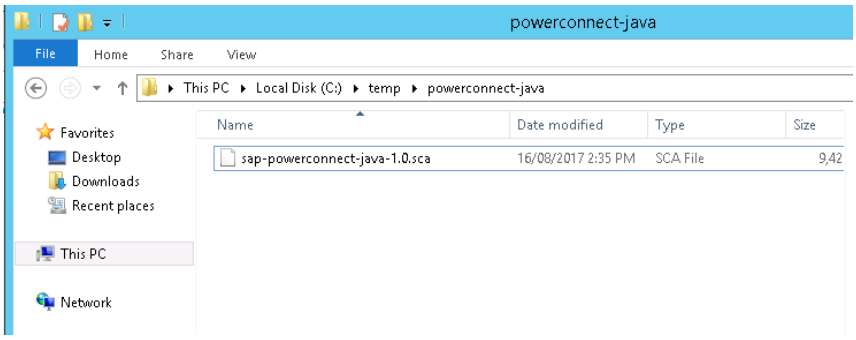
```
C:\temp\SUM>STARTUP.BAT configurehostagent P75
**** The SID: P75 is detected from <SID>ADM user. ****
**** Configuring SUM Java ... ****
**** Base Dir: C:\temp\SUM ****
**** SID: P75 ****
**** Modified Base Dir: C:\temp\SUM ****
**** Registering sumjava operation in SAP Host Agent... ****
**** Creation of file C:\Program Files\SAP\hostctrl\exe\operations.d\sumjava.con
f ****
**** Additional arguments: "configurehostagent" "P75"  ****
**** Registering sumjava description in SAP Host Agent... ****
**** Creation of file C:\Program Files\SAP\hostctrl\exe\descriptors.d\sumjava.lm
sldesc ****
**** Configuring SUM Observer ... ****
**** Creation of file C:\Program Files\SAP\hostctrl\exe\operations.d\sumobserver
.conf ****
**** Creation of file C:\Program Files\SAP\hostctrl\exe\descriptors.d\sumobserve
r.lmsldesc ****
**** Configuring SUM Abap: cmd.exe /c C:\temp\SUM\abap\SUMSTART.BAT confighostag
ent RESTARTSHA=no ****
Base Dir: C:\temp\SUM\abap
SID: P75
Username: saponazure\${SID:#required#tolowerladm
Modified Base Dir: C:\temp\SUM\abap
Registering SUM in SAP Host Agent...
Creation of file C:\Program Files\SAP\hostctrl\exe\operations.d\sumabap.conf
Creation of file C:\Program Files\SAP\hostctrl\exe\descriptors.d\sumabap.lmsldes
c
Creation of file C:\Program Files\SAP\hostctrl\exe\operations.d\dualabap.conf
Creation of file C:\Program Files\SAP\hostctrl\exe\descriptors.d\dualabap.lmslde
sc
Creation of file C:\Program Files\SAP\hostctrl\exe\operations.d\migtool.conf
Creation of file C:\Program Files\SAP\hostctrl\exe\descriptors.d\migtool.lmsldes
c
**** SUM ABAP: https://W12S12PI750:1129/lmsl/sumabap/P75/doc/sluigui ****
**** SUM benchmark tool: https://W12S12PI750:1129/lmsl/migtool/P75/doc/sluigui *
***

**** SUM Java: https://W12S12PI750:1129/lmsl/sumjava/P75/index.html ****
**** SUM Dual stack: https://W12S12PI750:1129/lmsl/sumjava/P75/dual.html ****
**** SUM Observer: https://W12S12PI750:1129/lmsl/sumobserver/P75/monitor/index.h
tml ****
**** Restarting SAP Host Agent ****
**** Restarting ... ****
**** SAP Host Agent has been restarted ****
**** SAP Host Agent configured, start the UI from the browser now ****
**** You are using SAP Host Agent version: ****
**** hostagent release: 7.21 ****
**** hostagent patch number: 29 ****
**** Please check the central SUM note whether this SAP Host Agent version is su
fficient for SUM operation ****

C:\temp\SUM>netstat -ano|findstr 1129
  TCP    0.0.0.0:1129           0.0.0.0:0              LISTENING       2940

C:\temp\SUM>_
```

Open a browser and connect to theJava SUM control page
https://<host>:1129/lmsl/sumjava/P75/index.html

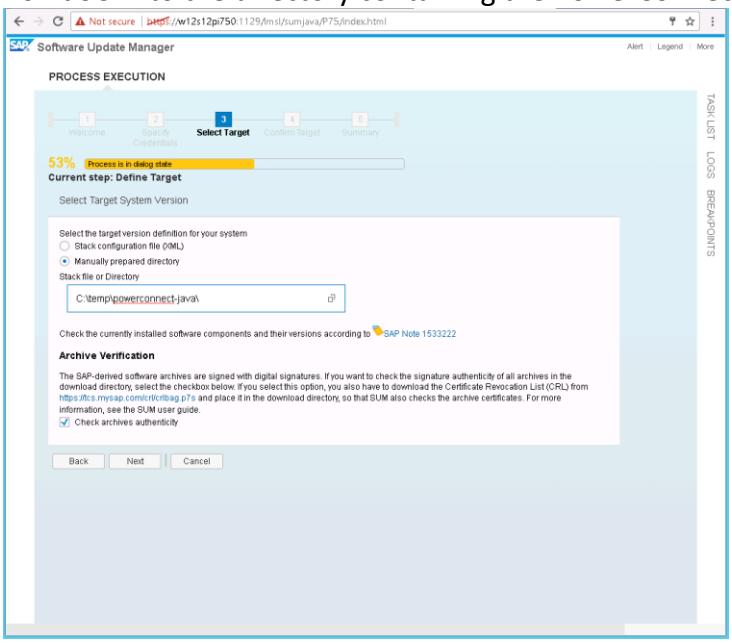


Enter <sid>adm credentials

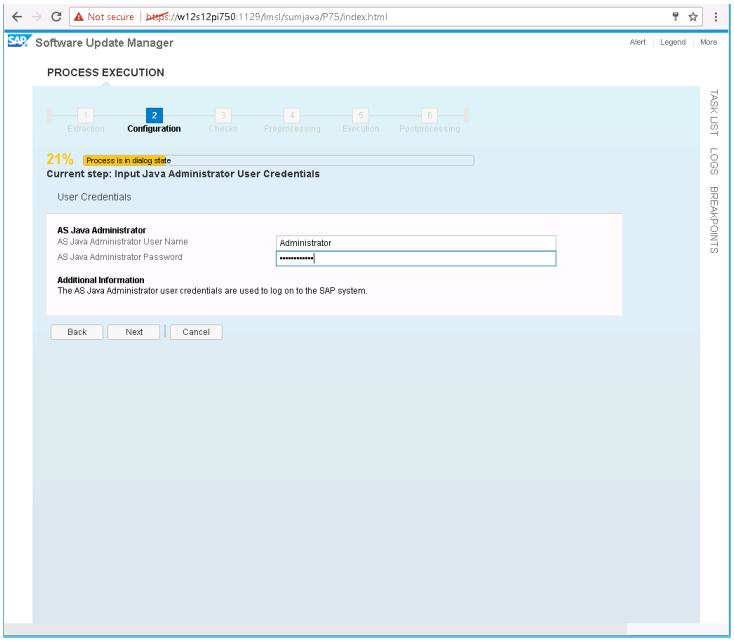


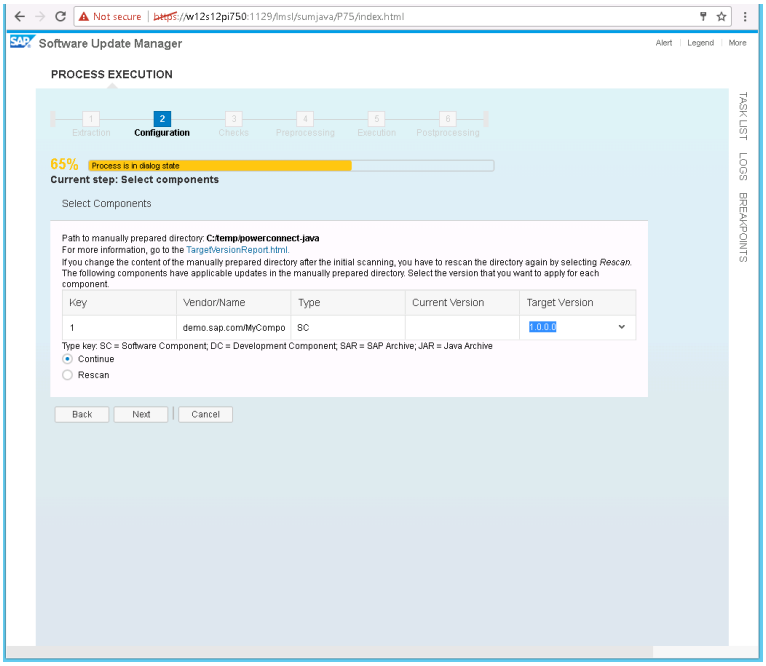


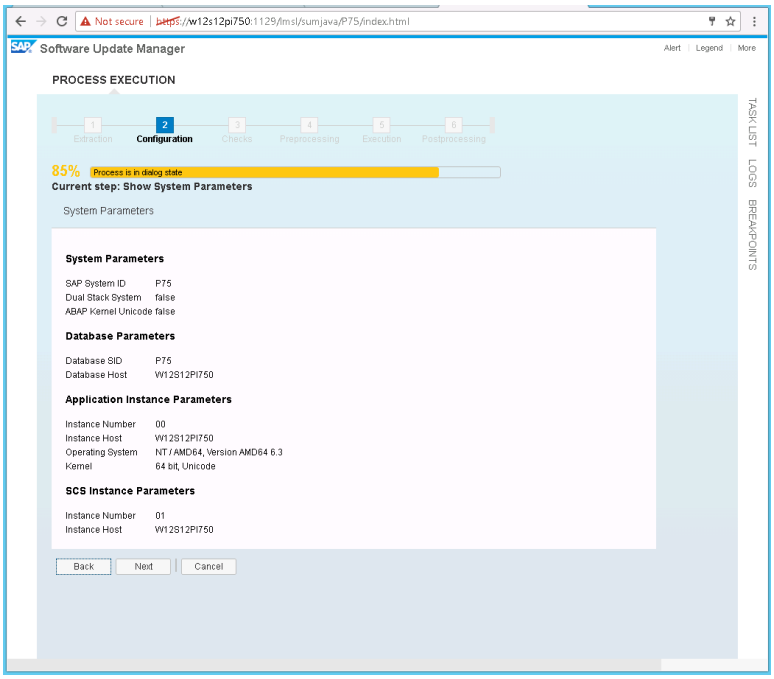
Point SUM to the directory containing the PowerConnect for Java code

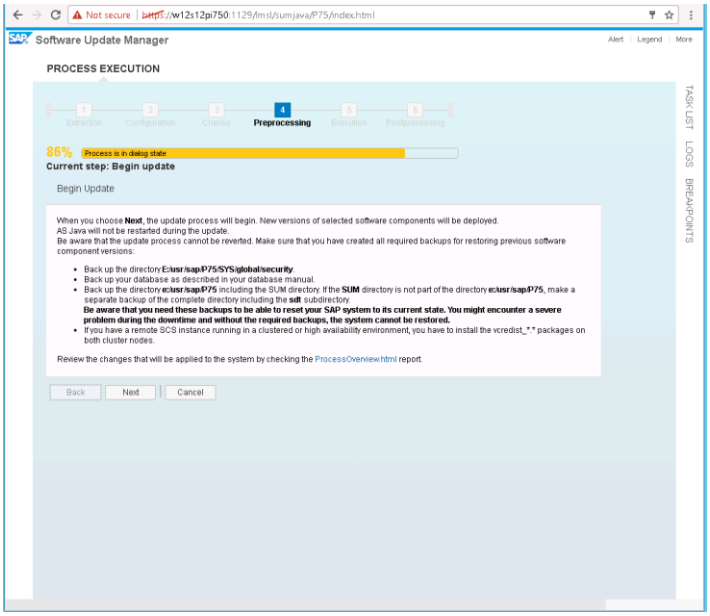


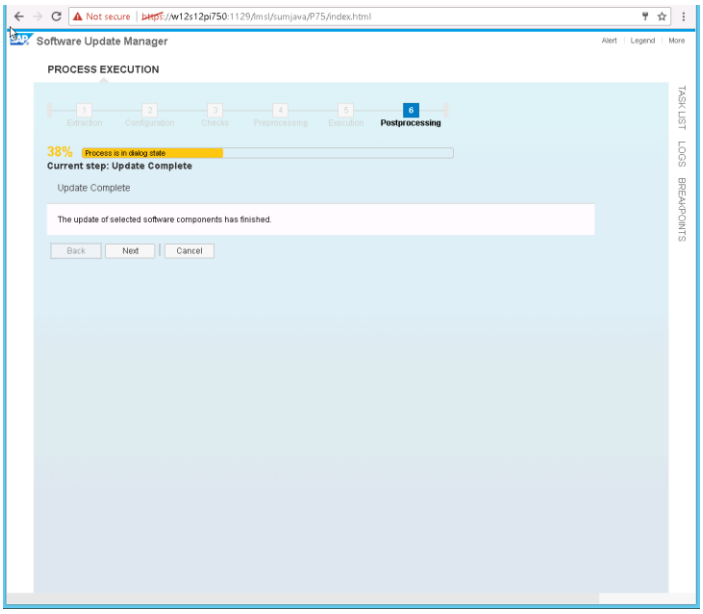
Enter J2EE administrator credentials




Not secure | https://w12s12pi750:1129/lmsl/sumjava/P75/index.html
Software Update Manager
Alert | Legend | More
PROCESS EXECUTION
1 Extraction
2 Configuration
3 Checks
4 Preprocessing
5 Execution
6 Postprocessing
65% Process is in dialog state
Current step: Select components
Select Components
Path to manually prepared directory: C:/temp/powerconnect-java
For more information, go to the TargetVersionReport.html.
If you change the content of the manually prepared directory after the initial scanning, you have to rescan the directory again by selecting Rescan.
The following components have applicable updates in the manually prepared directory. Select the version that you want to apply for each component.
Key
Vendor/Name
Type
Current Version
Target Version
1
demo.sap.com/MyCompo
SC
1.0.0.0
Type key: SC = Software Component; DC = Development Component; SAR = SAP Archive; JAR = Java Archive
Continue
Rescan
Back
Next
Cancel
TASK LIST
LOGS
BREAKPOINTS


Not secure | https://w12s12pi750:1129/lmsl/sumjava/P75/index.html
Software Update Manager
Alert | Legend | More
PROCESS EXECUTION
1 Extraction
2 Configuration
3 Checks
4 Preprocessing
5 Execution
6 Postprocessing
85% Process is in dialog state
Current step: Show System Parameters
System Parameters
System Parameters
SAP System ID P75
Dual Stack System false
ABAP Kernel Unicode false
Database Parameters
Database SID P75
Database Host W12S12PI750
Application Instance Parameters
Instance Number 00
Instance Host W12S12PI750
Operating System NT / AMD64, Version AMD64 6.3
Kernel 64 bit, Unicode
SCS Instance Parameters
Instance Number 01
Instance Host W12S12PI750
Back
Next
Cancel
TASK LIST
LOGS
BREAKPOINTS


Not secure | http://w12s12pi750:1129/msl/sumjava/P75/index.html
Software Update Manager
Alert | Legend | More
PROCESS EXECUTION
1 Extraction
2 Configuration
3 Checks
4 Preprocessing
5 Execution
6 Postprocessing
86%
Process is in dialog state
Current step: Begin update
Begin Update
When you choose Next, the update process will begin. New versions of selected software components will be deployed.
AS Java will not be restarted during the update.
Be aware that the update process cannot be reverted. Make sure that you have created all required backups for restoring previous software component versions:
Back up the directory E:\usr\sap\P75\SYS\global\security.
Back up your database as described in your database manual.
Back up the directory e:\usr\sap\P75 including the SUM directory. If the SUM directory is not part of the directory e:\usr\sap\P75, make a separate backup of the complete directory including the sdt subdirectory.
Be aware that you need these backups to be able to reset your SAP system to its current state. You might encounter a severe problem during the downtime and without the required backups, the system cannot be restored.
If you have a remote SCS instance running in a clustered or high availability environment, you have to install the vcredist_*.* packages on both cluster nodes.
Review the changes that will be applied to the system by checking the ProcessOverview.html report.
Back
Next
Cancel
TASK LIST
LOGS
BREAKPOINTS


Not secure | http://w12s12pi750:1129/msl/sumjava/P75/index.html
Software Update Manager
Alert | Legend | More
PROCESS EXECUTION
1 Extraction
2 Configuration
3 Checks
4 Preprocessing
5 Execution
6 Postprocessing
38%
Process is in dialog state
Current step: Update Complete
Update Complete
The update of selected software components has finished.
Back
Next
Cancel
TASK LIST
LOGS
BREAKPOINTS

Not secure | https://w12s12pi750:1129/lmsl/sumjava/P75/index.html

Software Update Manager

Alert | Legend | More

PROCESS EXECUTION

1 Welcome | 2 Specify Credentials | 3 Select Target | 4 Confirm Target | 5 Summary

37% Process is in dialog state

Current step: Summary and Evaluation of the Update Process

Summary of the Update Process

Summary

The process has finished successfully. For more information, see the ProcessOverview.html report.

System ID	**P75**
Process Runtime	**00 h 10 min**
System Update	**00 h 00 min**

☐ Reuse this SUM directory for future maintenance activities and backup the current execution artifacts to the

C:/temp/SUM/sdt/archive/execution_2017_08_17_00_13_51 directory.

Once you exit SUM you can later start it the same way as described in described in chapter "Starting the Software Update Manager" of the SUM guide.

Back | Next | Cancel

TASK LIST | LOGS | BREAKPOINTS

Not secure | https://w12s12pi750:1129/lmsl/sumjava/P75/index.html

Software Update Manager

Alert | Legend | More

PROCESS EXECUTION

Feedback to SAP

Evaluation Form

SAP SE's aim is to provide fast and efficient procedures. To evaluate the procedure you just carried out, we need information generated by the tool during process execution and your experience with the tool itself. The below form contains a simple questionnaire and XML data generated during the procedure. The XML data comprises only technical information and statistics about the executed steps as well as the product and system context in which the steps have been carried out. There is no business, personal or other sensitive data included. The questionnaire and the XML data are solely used for improving performance, quality, and behavior of the procedure. Thus, they will not be used for any marketing or sales purposes.
Once your feedback has been analyzed and followed up, your email address (if you decide to provide it to us) will be deleted. If you have specific questions or problems, please report an incident at SAP Service Marketplace.
After having accepted the legal statement below, you will be able to send the questionnaire and the XML data to SAP.

☑ **I accept the following:**

1. In order for SAP SE to utilize the feedback provided in the questionnaire, I grant to SAP SE a non-exclusive, perpetual, irrevocable, worldwide, royalty-free license, with the right to sublicense to SAP SE's affiliates, licensees and customers, to use, publish, and disclose such feedback in any manner SAP SE chooses and to display, perform, copy, make, have made, use, sell, and otherwise dispose of SAP SE's and its affiliates' or sublicensee's products or services embodying my feedback in any manner and via any media SAP SE chooses, without reference to the source. SAP SE shall be entitled to use my feedback for any purpose without restriction or remuneration of any kind.
2. I agree that SAP SE may use my email address to contact me regarding the information I provided in the questionnaire.
SAP SE (i) will process the email address in Germany and/or Bulgaria and/or India, (ii) only as long as it is required to evaluate the information that I provided in the questionnaire and (iii) will not use my email address for any other purpose. In case you want to have your email address corrected or deleted, please contact lm_analytics@sap.com.
3. I agree not to enter into any free fields of the questionnaire any information which could be a trade secret, personal data (other than my email address), proprietary or otherwise confidential for me, my employer or any third party.

SEND TO SAP

This send button submits the evaluation of your maintenance process and the form below to SAP SE.
Please send this to SAP SE even if you do not fill in the form below.

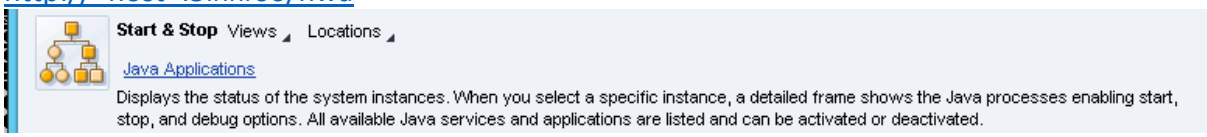
What kind of system did you run the process on?
- ○ Development system
- ○ Quality system
- ○ Production system

Did you run the process on the actual system or a copy of it (i. e. test process)?
- ○ Actual system
- ○ Test on copy of the system

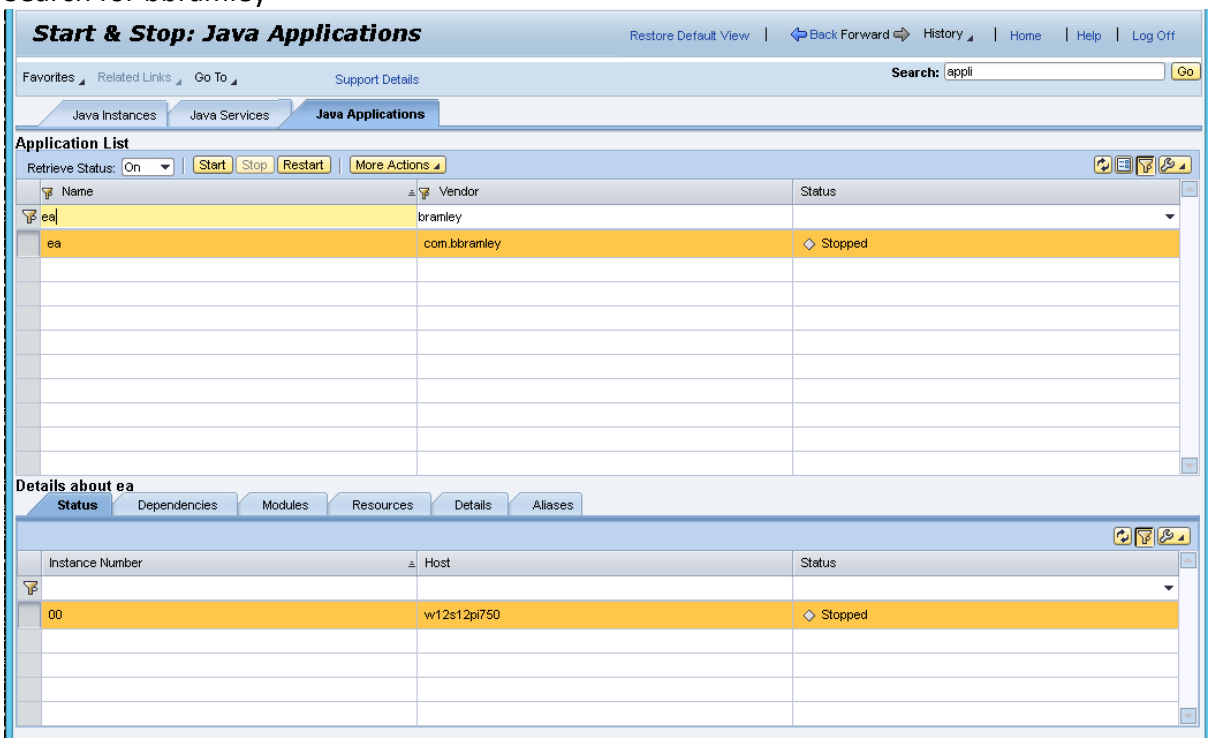
How many times did you contact SAP SE for help with your process (customer calls or incidents)?

Close

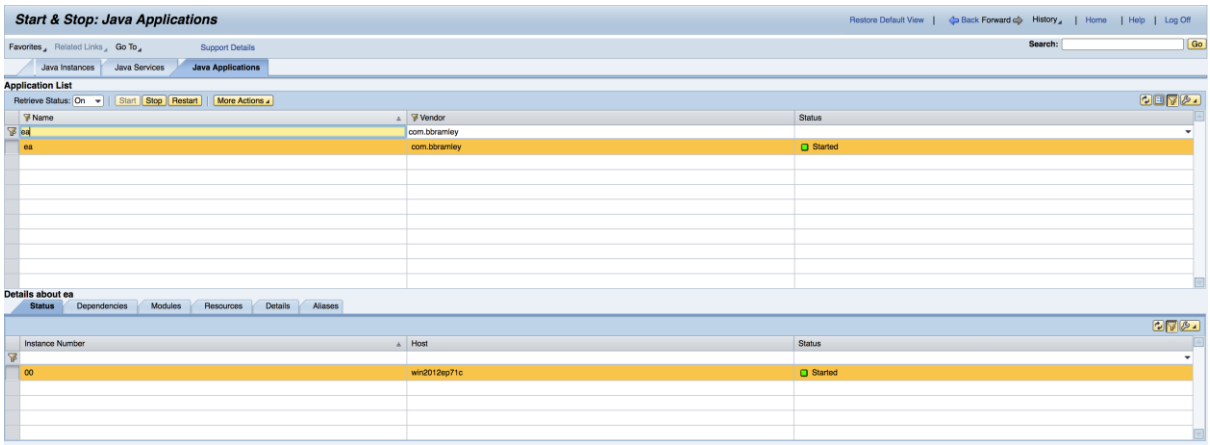
3. Once deployed the application should be visible in the SAP Netweaver console: http://<host>:5###00/nwa



Search for bbramley



And start the service



Configuration of Splunk

The SAP PowerConnect monitoring agent sends its metrics and events to Splunk using the Splunk HTTP Event Collector.

To configure the Splunk HTTP Event Collector (HEC) follow the documentation on the Splunk website here:

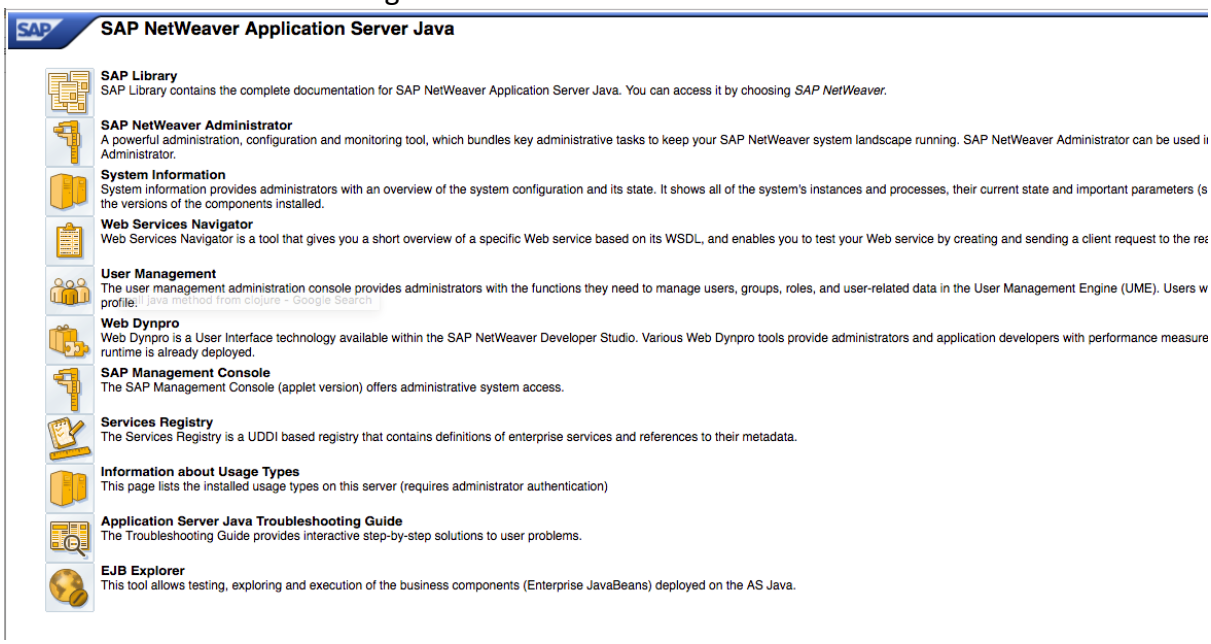
http://docs.splunk.com/Documentation/SplunkCloud/6.6.0/Data/UsetheHTTPEventCollector

This should result in creating a HEC token for the SAP PowerConnect monitoring agent to use in the next section.

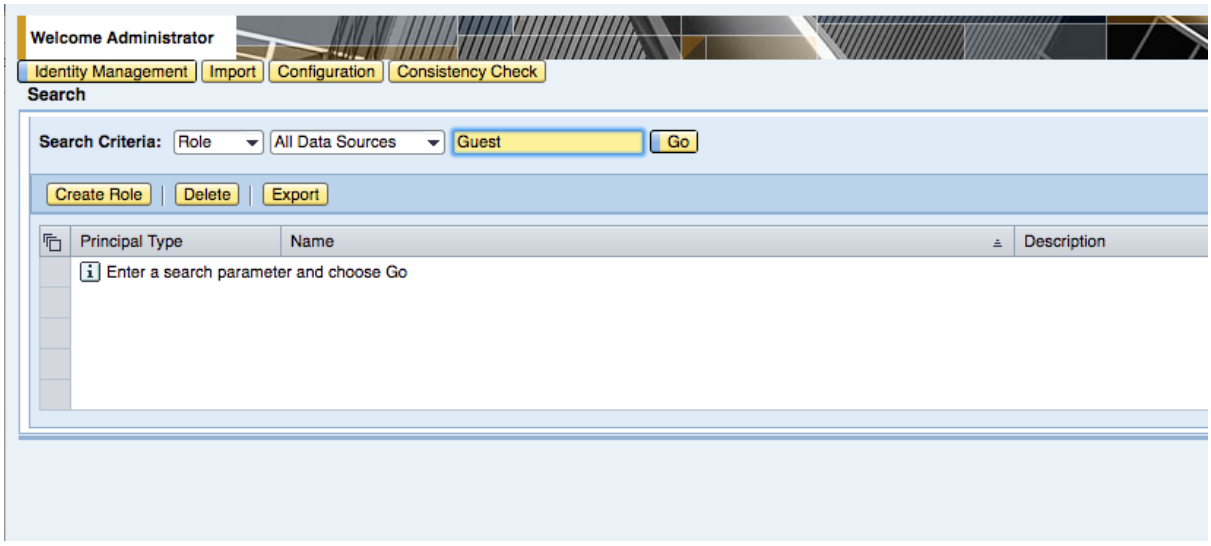
Granting JMX security permissions to the Sap PowerConnect Agent (NetWeaver 7.5)

If you are using NetWeaver 7.5 the Guest user account needs to have read permissions to JMX in order to consume metrics from SAP specific JMX beans.

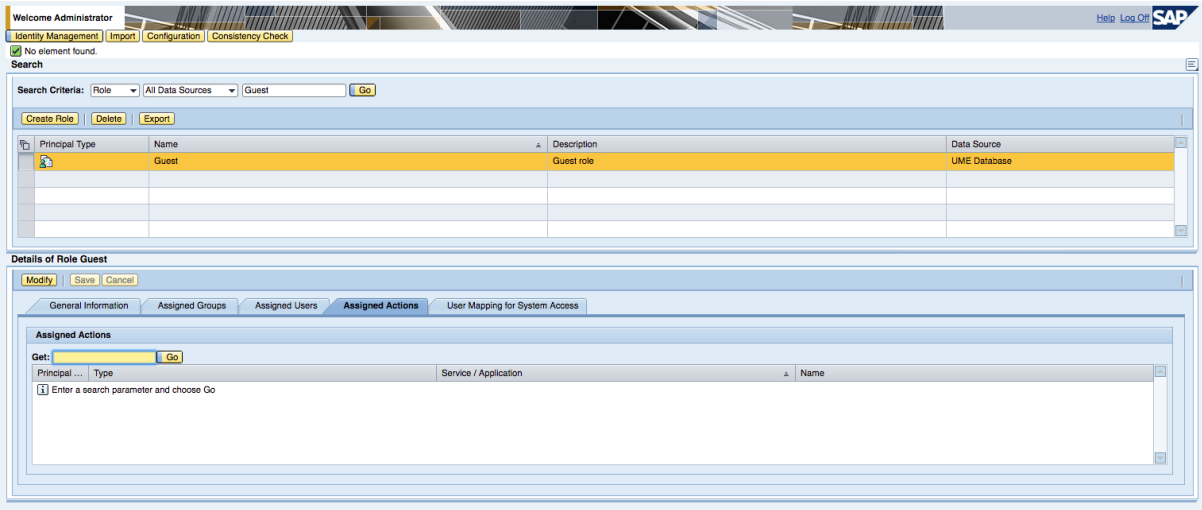
To do this use the User Management section in the SAP Netweaver UI:



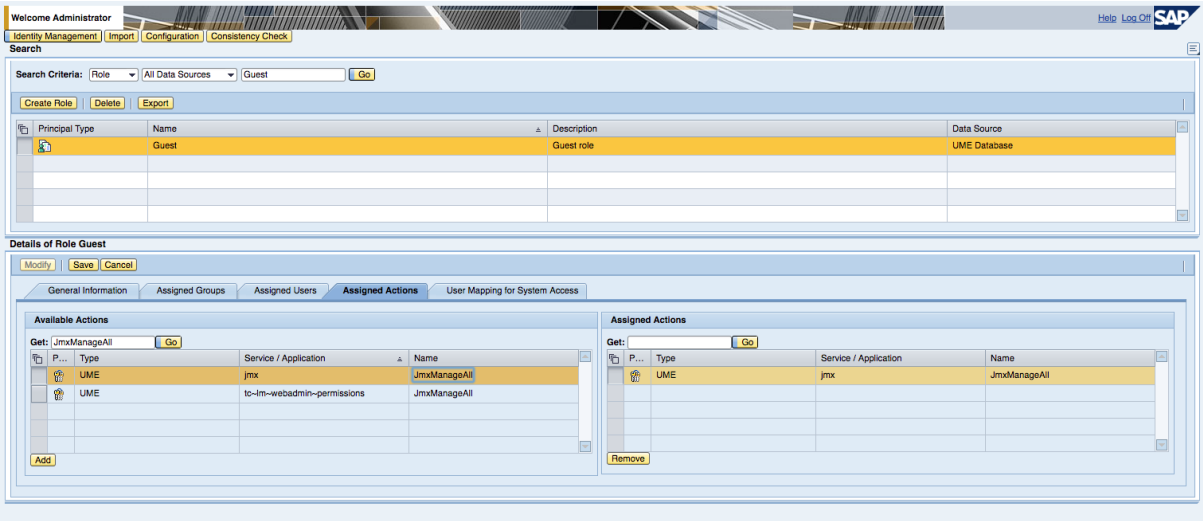
In the Search Criteria dropdown choose Role then enter Guest and click Go:



Click on the Guest user in the table and click on the Assigned Actions tab:



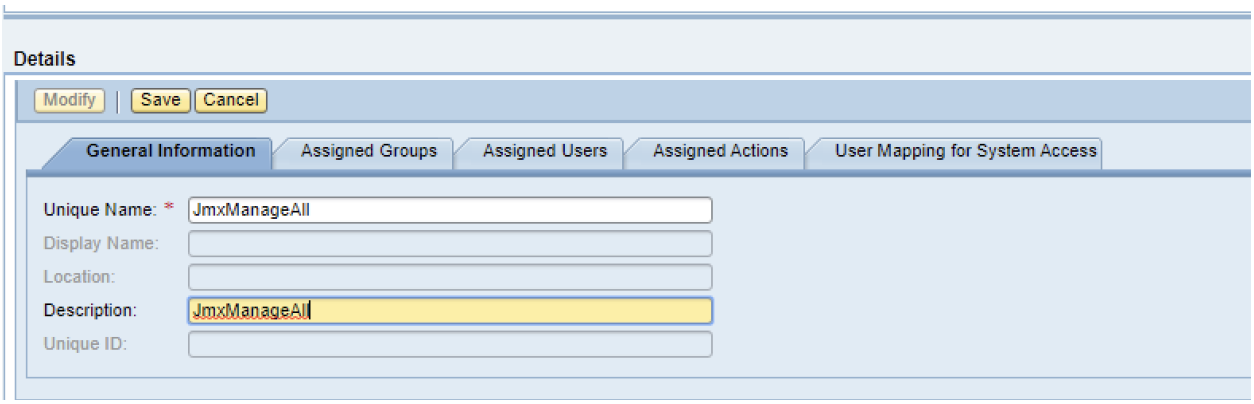
Click Modify and in the text box enter “JmxManageAll” then click Go.



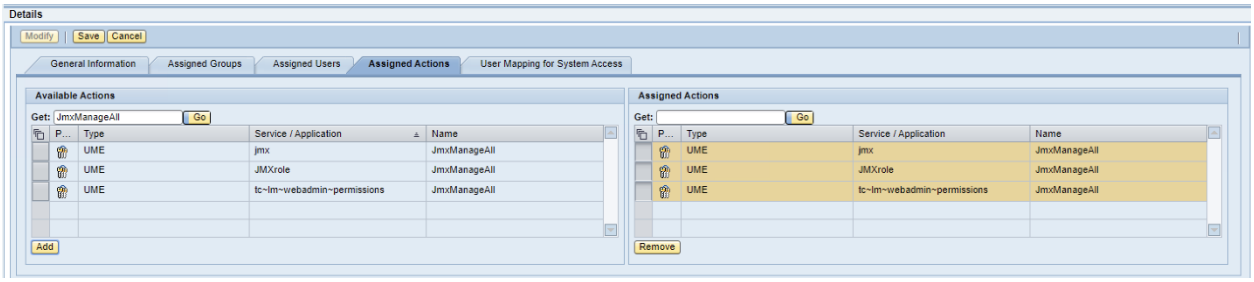
Select the JmxManageAll action at the top of the table and click Add, then Save.

Create JMXManageAll role

1. Create a role called JMXManageAll

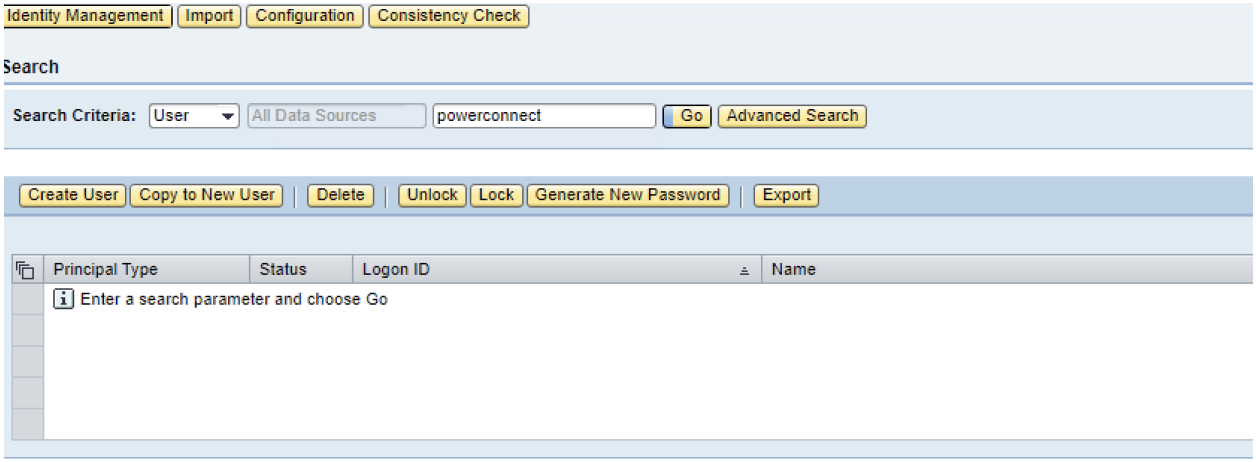


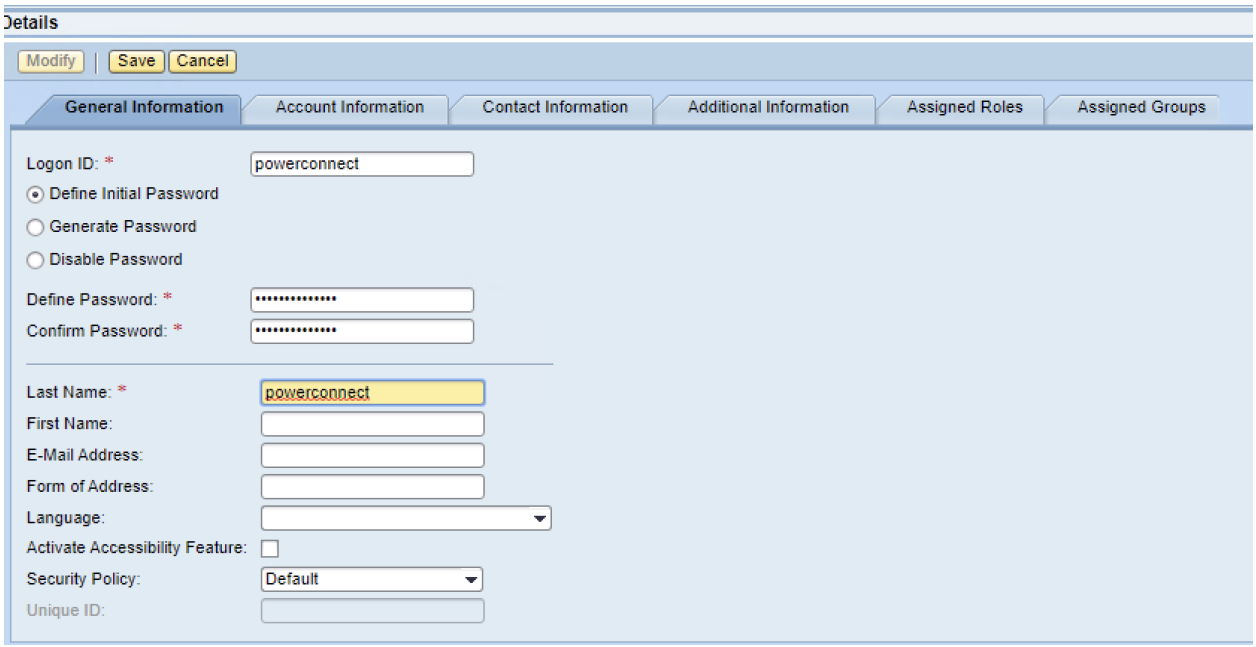
2. Add all the ***actions*** under jmxmanageall that you can find



3. Click Save

Create User

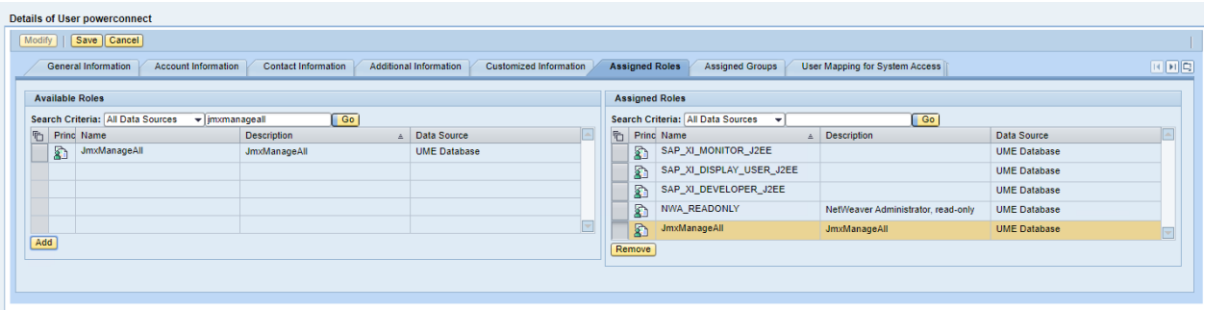




Make it a technical user *important*

Add the following 5 roles to the user

- SAP_XI_API_DEVELOP_J2EE (PI only)
- SAP_XI_API_DISPLAY_J2EE (PI only)
- NWA_READONLY (all)
- SAP_XI_MONITOR_J2EE (PI only)
- JmxManageAll



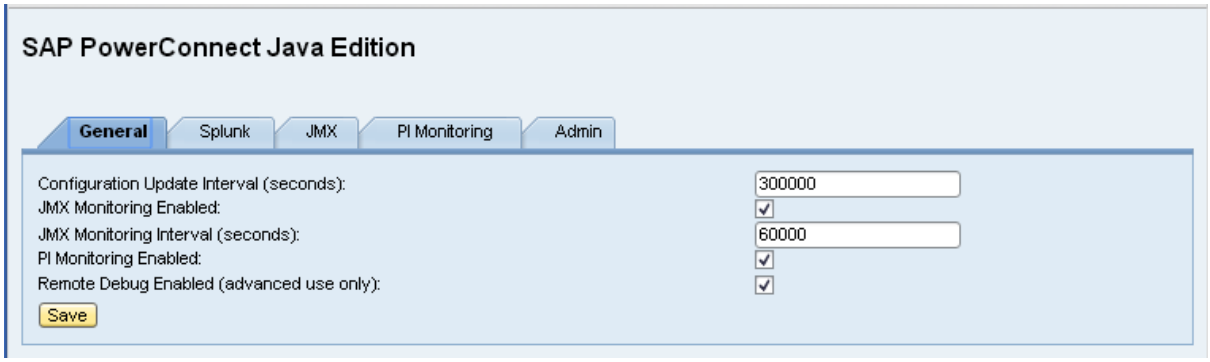
Configuration of Sap PowerConnect Agent

The final step is to use the Sap PowerConnect UI to configure the agent.

The URL to view the UI is:

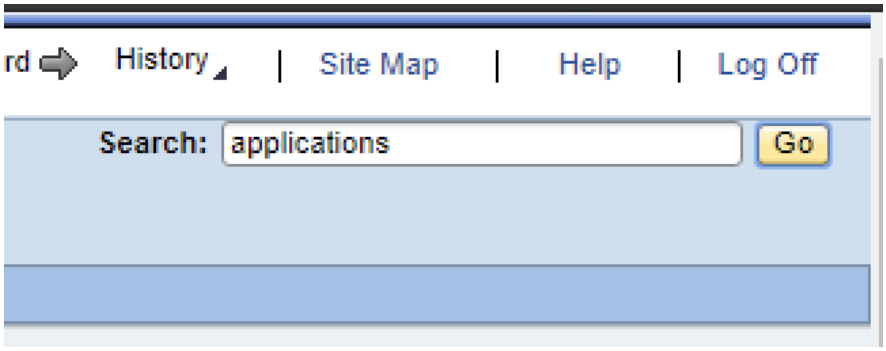
http://<server>:<port>/webdynpro/resources/com.powerconnect5/spcj_wd/SapPowerConnectJava

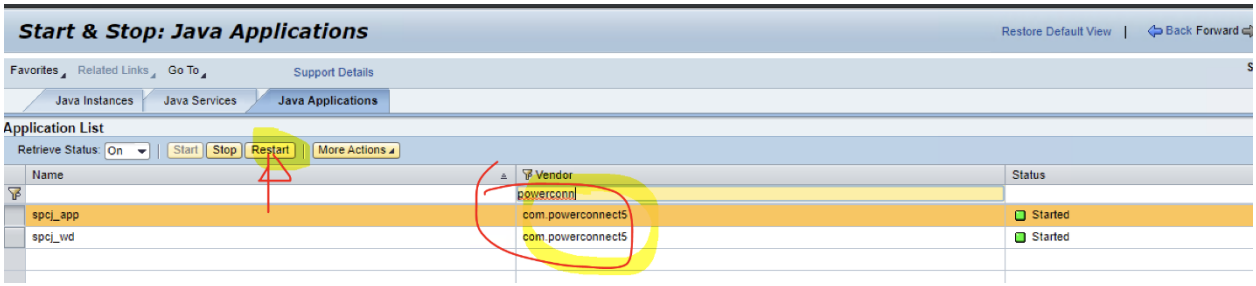
The UI should look like this:

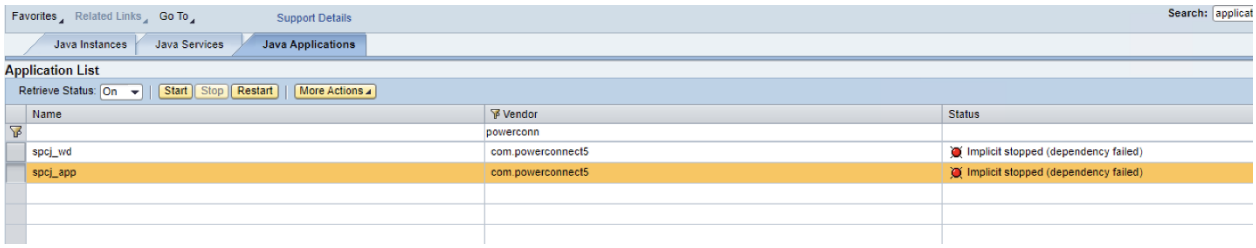


If you get ERROR returned check that the Java services are running

1. Restart the application

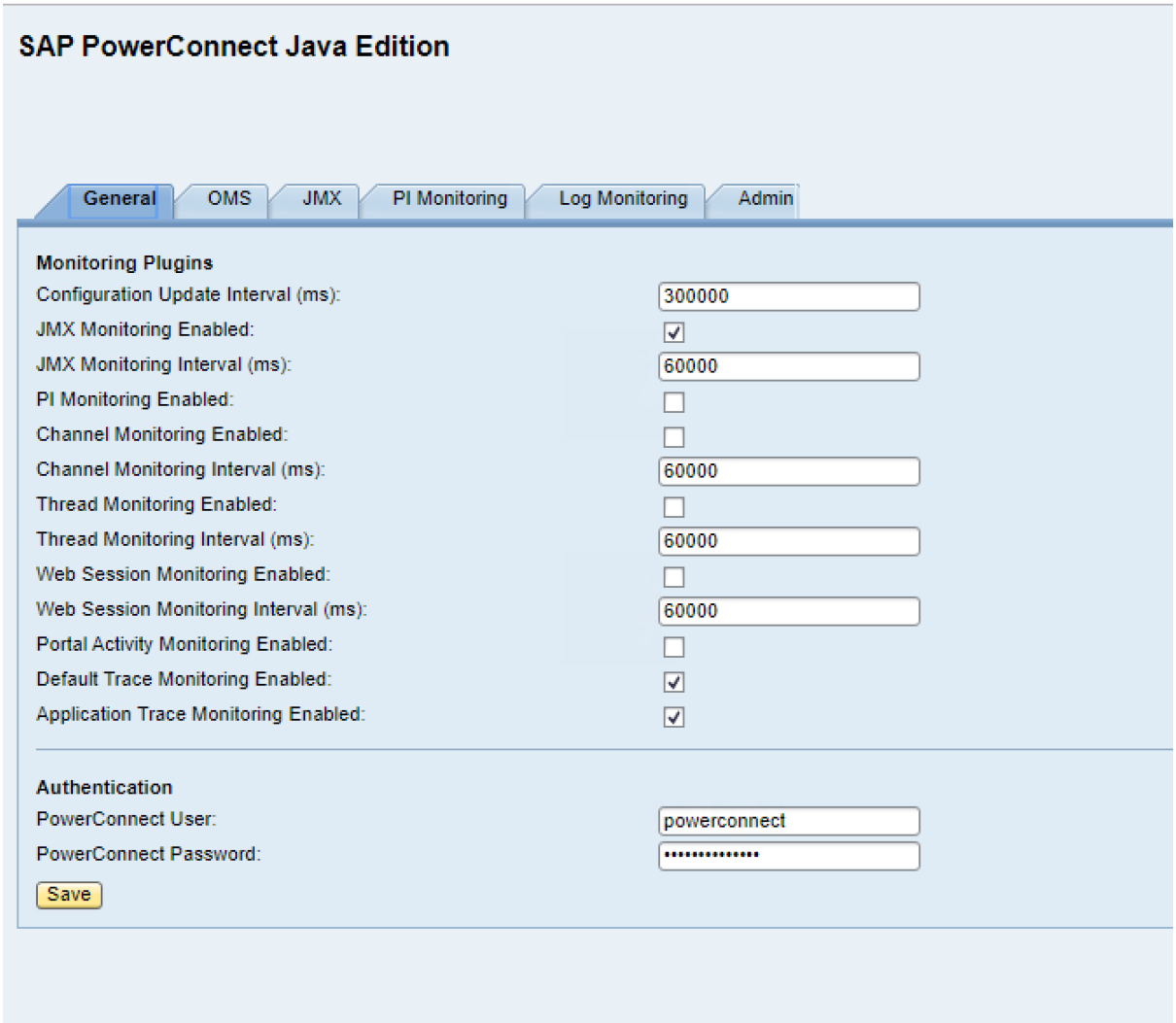






General Tab

The configuration under the General tab can normally be left as default options.



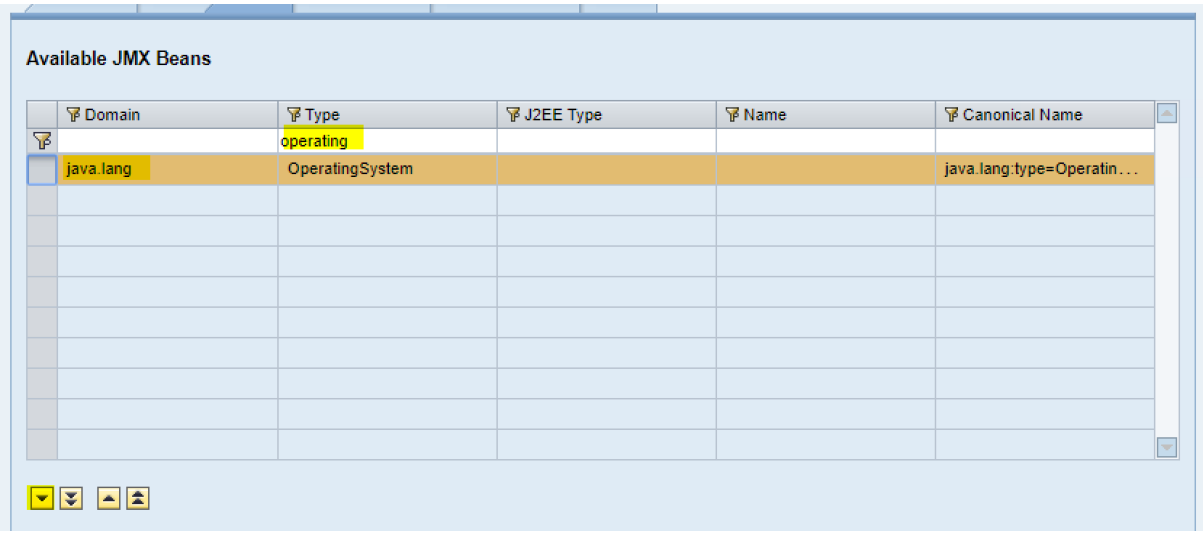
Splunk Tab
Click the Splunk tab and configure the Splunk HEC details:

Configuration Key	Description
Splunk HEC Key	The token that you generated when configuring Splunk
Splunk HEC URL	The host and port of where the Splunk HEC is listening e.g. http://localhost:8088
Splunk Index	The name of the index where you would like to store the SAP PowerConnect monitoring data
Splunk Sourcetype	The name you would like give to identify the SAP PowerConnect monitoring events (should usually be left as default)

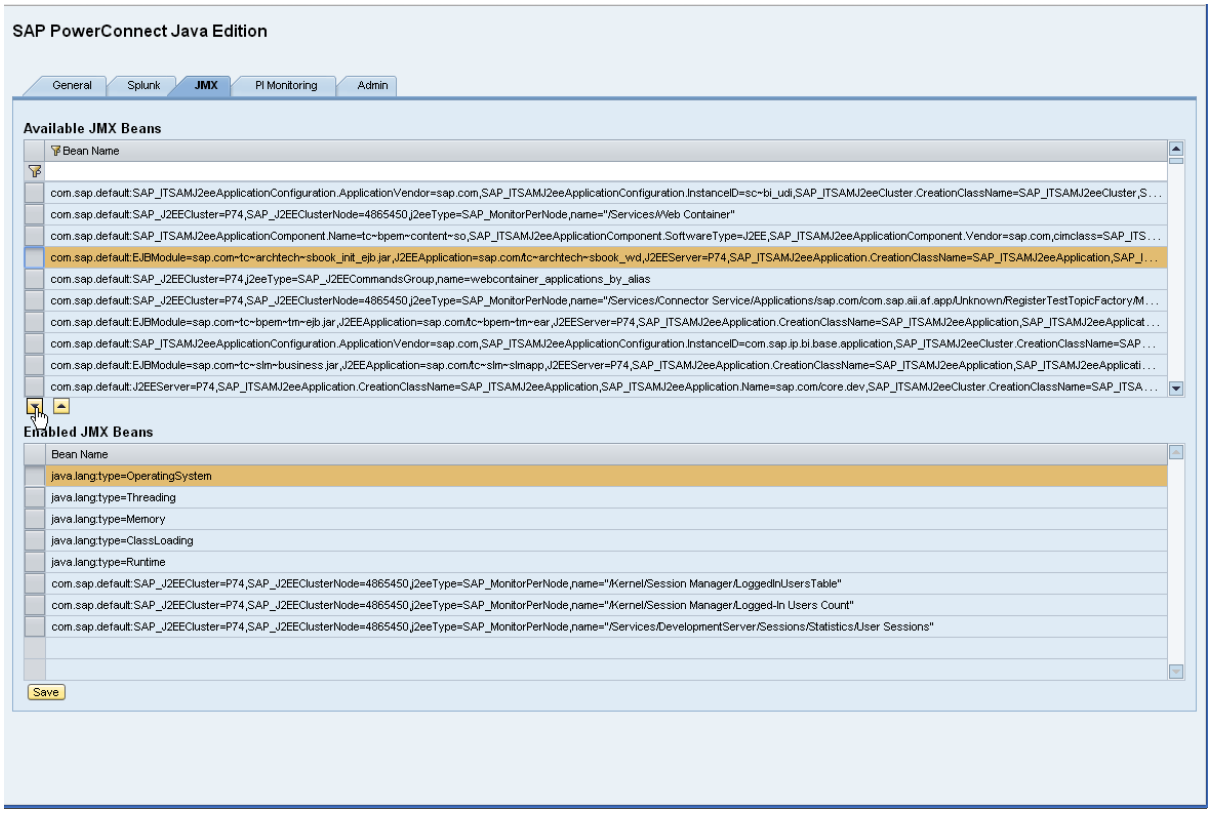
Click the Save button.

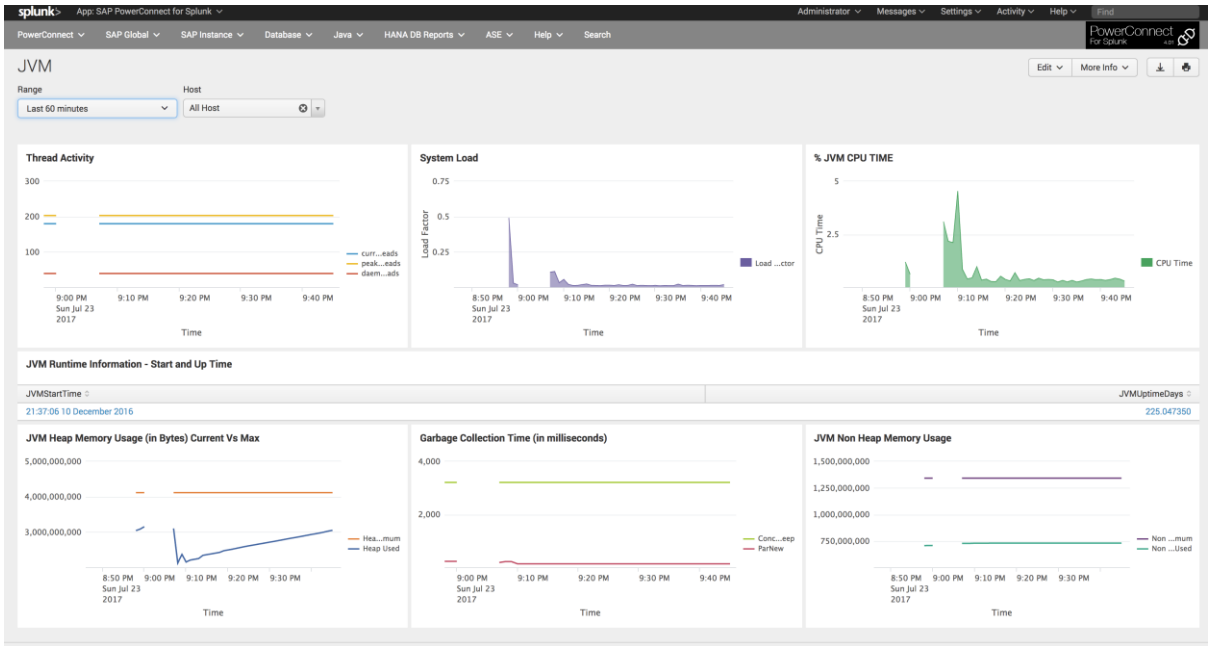
Click the JMX tab to pick the events you would like to collect from the SAP Netweaver system. By default the java.lang domain beans are collected.

Once configured events should start to appear in the JVM tab of the SAP PowerConnect for Splunk app:
JMX Tab
Here you can define the JMX beans you want to monitor, search for an select the bean in the top table,



and then use the down triangle to move it to the list of **Enabled Mbeans**





JMX Tab

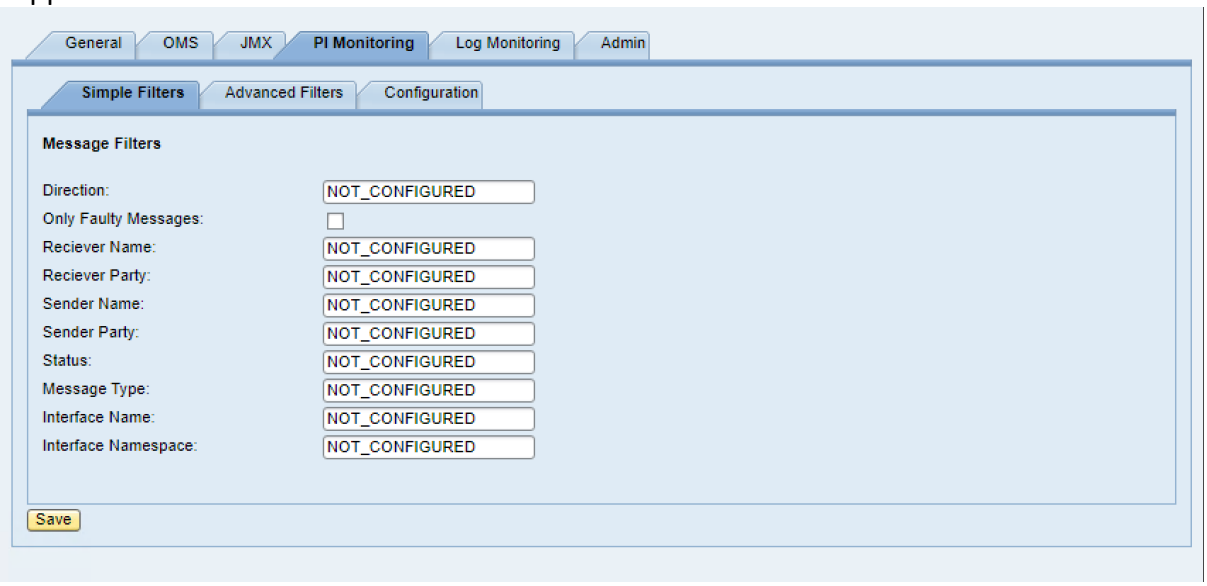
To enable monitoring of a specific JMX object simply search for the object and once you have it in the top table, click on the down triangle to move it to the list of monitored jmx objects and click save.

PI Monitoring Tab

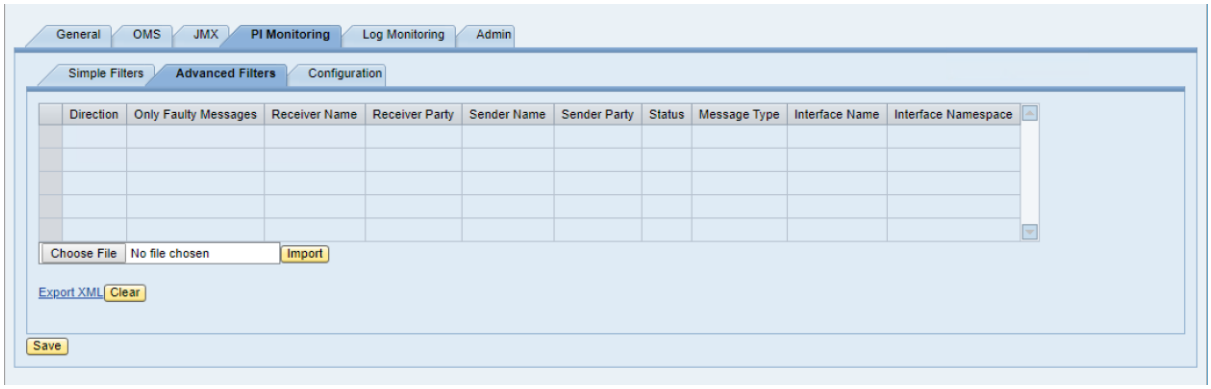
To monitor a specific PI channel in the PI monitoring tab you can enter the following information

direction - "OUTBOUND,"INBOUND" or leave as NOT_CONFIGURED to monitor both directions
onlyFaultyMessages - <leave cleared>
recieverName – Enter the receiver name, or leave NOT_CONFIGURED to monitor all receivers
recieverParty - Enter the receiver party name, or leave NOT_CONFIGURED to monitor all receivers
senderName - Enter the sender name, or leave NOT_CONFIGURED to monitor all senders
senderParty - Enter the sender party name, or leave NOT_CONFIGURED to monitor all senders
status – Can be one of the following values “success”, “toBeDelivered”, “waiting”, “holding”, “delivering”, “systemError”, “canceled”, or leave NOT_CONFIGURED to monitor all statuses
messageType - Enter the message type name, or leave NOT_CONFIGURED to monitor all senders

Use the simple monitor for specifying a single filter (1 only). NOT_CONFIGURED means no filter and equals ‘*’ or match anything. The below filter matches all messages, as there is no filter. Enter a matching string for filtering by one of the below fields, wildcards are supported i.e. ReceiverName = “testReceiver*”.



Use the advanced filter for multiple filters.



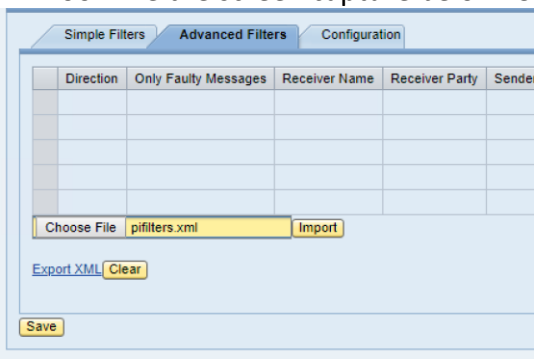
The default format is below. For a single filter

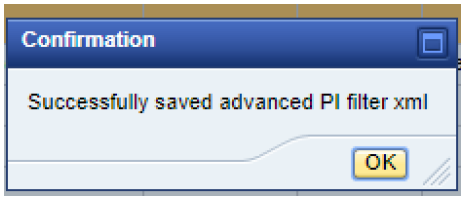
```
<?xml version="1.0" encoding="UTF-8"?>
<PIFilters>
        <PIFilter>
                <direction></direction>
                <interfacename></interfacename>
                <namespace></namespace>
                <messagetype></messagetype>
                <onlyfaultymessages>false</onlyfaultymessages>
                <receivername></receivername>
                <receiverparty></receiverparty>
                <sendername></sendername>
                <senderparty></senderparty>
                <status></status>
        </PIFilter>
</PIFilters>
```

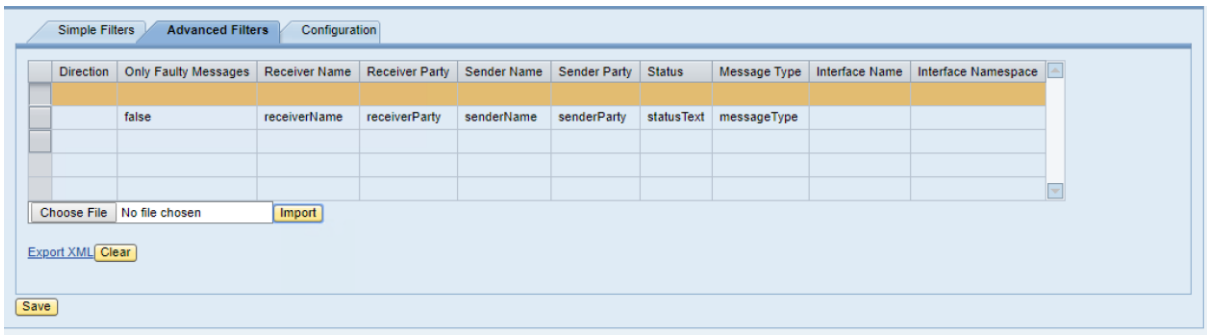
For multiple filters you can repeat the <PIFilter> section multiple times.

```
<?xml version="1.0" encoding="UTF-8"?>
<PIFilters>
        <PIFilter>
                <direction></direction>
                <interfacename></interfacename>
                <namespace></namespace>
                <messagetype>messageType</messagetype>
                <onlyfaultymessages>false</onlyfaultymessages>
                <receivername>receiverName</receivername>
                <receiverparty>receiverParty</receiverparty>
                <sendername>senderName</sendername>
                <senderparty>senderParty</senderparty>
                <status>statusText</status>
        </PIFilter>
        <PIFilter>
                <direction></direction>
                <interfacename></interfacename>
                <namespace></namespace>
                <messagetype></messagetype>
                <onlyfaultymessages>false</onlyfaultymessages>
                <receivername></receivername>
                <receiverparty></receiverparty>
                <sendername></sendername>
                <senderparty></senderparty>
                <status></status>
        </PIFilter>
</PIFilters>
```

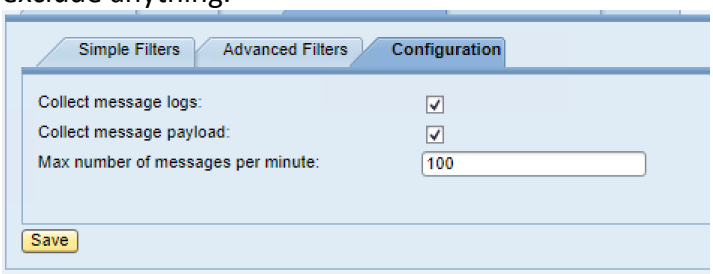
Edit this filter, and save it in a document as an .xml file and then upload it, once uploaded it will look like the screen capture below. Click on **Choose File** -> select the file -> click **Import**







Filters are *inclusive* – you can include anything in the filter, but you can not set a filter to exclude anything.



The configuration tab allows you to specify
Collect message logs - Collects the PI/PO processing logs connected to each message
Collect message payload - Collects the PI/PO message payload
Max number of messages per minutes – Maximum number of messages per server nodes (there may be more than 1 server node per SAP instance. If you have 2 instances, with 2 server nodes each, then this is 100 messages / min / node which in this case is 2 x 2 x 100 = 200 messages per minute.

Log Monitoring
This tab allows you to enable SAP Java log monitoring for
Portal Activity – This allows you to read and ingest the Portal Activity data which feeds the portal Page Hits/ and Page response time dashboards
Default Trace – This ingests the SAP Java defaultTrace logs
Application Trace - This ingests the SAP Java defaultTrace logs

These logs are read and any changes to these files (similar to a unix tail command) are identified and sent to Splunk.

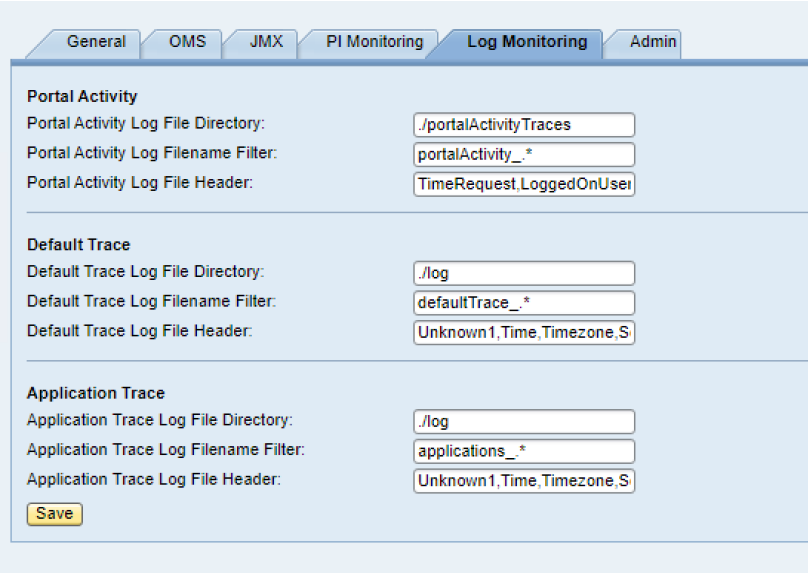
The input for these is variable, these is generally no need to adjust these.
Log File Directory - The directory the log file is written to by SAP
Log Filename Filter - The filename mask for the log file written to by SAP

Log File Header- These are the headers to assign the columns that are contained in the logfile. These are pre-mapped but you can change them, they are comma delimited, and are mapped to the fields in the file in the sequence they appear in this field.

Portal Activity: TimeRequest,LoggedOnUser HASH,iView PCD HASH,Header of Request HSSH,HURL Query String HASH,Time to Process Request,ServerNode,TimeToProcessRequest,HTTPSessionID,NavigationPath,ObjectType,ServerHost,UniqueID,URLQueryString

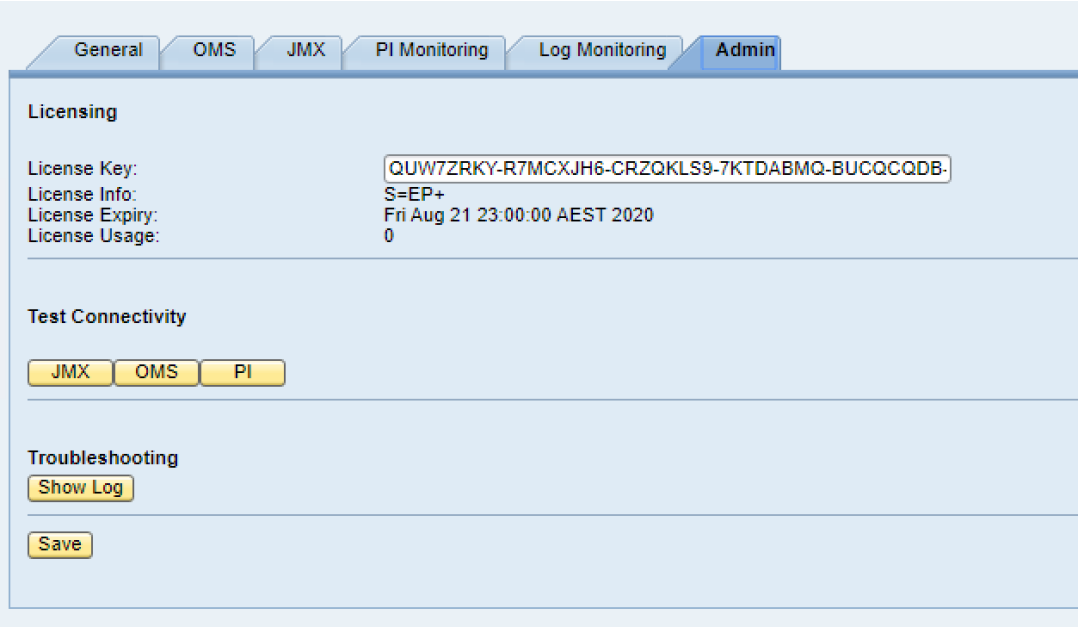
Default Trace:
Unknown1,Time,Timezone,Severity,SourceName,Unknown2,CSNComponent,DCComponent,Unknown3,CorrelationID,Application,Location,User,Session,Transaction,DSRRootContextID,DSRTransaction,DSRConnection,DSRCounter,ThreadName,Unknown4,Unknown5,Text

Application Trace:
Unknown1,Time,Timezone,Severity,SourceName,Unknown2,CSNComponent,DCComponent,Unknown3,CorrelationID,Application,Location,User,Session,Transaction,DSRRootContextID,DSRTransaction,DSRConnection,DSRCounter,ThreadName,Unknown4,Unknown5,Text



Admin Tab

This tab shows the license key, license validity volume of data sent to Splunk today. The 3 test buttons should be used to confirm these 3 functions can be successfully executed.



JMX – Checks that the user specified in the **General** tab has the necessary permissions to read the JMX data.
Splunk - Checks and confirms connectivity from SAP Java to Splunk.
PI - Checks that the user specified in the **General** tab has the necessary permissions to read the JMX data from the J2EE engine.

The **Show Log** button will display the powerconnect log which is written to the same directory as the defaultTrace/applicationTrace directory, and there is 1 log per server node.