

Universal Task Documentation

Universal Automation Center support for importing SAP Calendar

ut-sap-import-calendar-csv-linux

Associated Activities:

Date: 26 June 2018

Author: Nils Buer

Revision: 02

CONFIDENTIALITY INFORMATION

Distribution list: Marketplace

Revision	Date	Author	Changes
00	20180917	Nils Buer	Initial Document (WIP)
01	20180918	Nils Buer	Update for Redhat
02	20181018	Nils Buer	Update for Windows and import all Calendar

Abstract:

This Universal Tasks allows to import the SAP Factory Calendar and the related Holiday Calendar into the Universal Controller. You can either import a user defined list of SAP calendar or all valid SAP calendar.

Contents

1 Disclaimer 3

2 Scope 3

3 Introduction..... 3

4 Installation..... 4

 4.1 Software Requirements 4

 4.2 Installation Steps 5

 4.2.1 Installation Steps Linux 5

5 Universal Task Configuration 7

6 Test Cases 13

7 Document References..... 15

1 Disclaimer

No support and no warranty are provided by Stonebranch GmbH for this document and the related Universal Task. The use of this document and the related Universal Task is on your own risk.

Before using this task in a production system, please perform extensive testing.

Stonebranch GmbH assumes no liability for damage caused by the performance of the Universal Tasks

2 Scope

This document provides a documentation how to install and use the Universal Tasks for SAP Calendar Import.

3 Introduction

This Universal Tasks allows to import the SAP Factory Calendar and the related Holiday Calendar into the Universal Controller. You can either import a user defined list of SAP calendar using a csv file or all valid SAP calendar.

Some details about the Universal Tasks for SAP Calendar Import:

- The Universal Task imports either a user defined csv-list or all SAP Factory- and related Holiday Calendar into the Universal Controller.
- The csv list is saved incl. Versioning into the Universal Controller script library
- The Universal task is based on python. It runs on Linux as well as Windows agents
- The required Python language can be installed during the Universal Agent upgrade or new install
- The calendar export is done using the SAP certified XBP-RFC interface
- The calendar import to Universal Controller is using the Stonebranch Express Conversion Tool kit "XCT".
- SAP is always considered as the Master, meaning Calendars are always export from SAP, never import to SAP.
- All Calendar functionalities are support incl. Factory, Holiday and "Special Rules"
- You can set different log-levels for the Universal task, providing you more information in case of issues

4 Installation

4.1 Software Requirements

Universal Task name: *ut-sap-import-calendar-csv-linux*

Related UAC XML Files for template and task: *Github repository*

Software used:

- Python 3.6 – can be installed as part of the Universal Agent
 - For Python the following modules are required:
 - *os, for linux command execution*
 - *datetime and time to compare file timestamps*
 - *logging, for python loglevel support*
 - *csv, to handle csv files*
 - *subprocess to execute os commands*
- Note: None of the modules needs to be added via python installer as they all belong to the standard python modules***
- Universal Controller V6.4.7.0 or higher
 - Universal Agent V6.5.0.0 or higher installed on a Linux Server or Windows Server
 - Stonebranch Express Conversion Toolkit XCT 6449 (will be provided on request by Stonebranch)

4.2 Installation Steps

4.2.1 Installation Steps Linux

The following describes the installation steps:

1. Install JAVA JDK (example is for RedHat)

Check the java version on you server: `java -version`

If you do not have oracle jdk8 (**Note: Open JDK will not work due to missing JAVA FX Libraries**)

download the Oracle Java jdk8 rpm from the oracle homepage:

<http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html>

Install the rpm:

`rpm -ivh jdk-8u181-linux-x64.rpm` (or use your package installer)

Check that you have GTK2 installed:

`rpm -q gtk2-2.24.31-1.el7.x86_64`

if not download it from the Red Support page and install rpm:

Link at REDHAT support portal

https://access.redhat.com/downloads/content/gtk2/2.24.31-1.el7/x86_64/fd431d51/package

`rpm -ivh gtk2-2.24.31-1.el7.x86_64`

The SAP calendar export Universal Task has an option to Point to this new JAVA (or an existing one)

2. Install Conversion Toolkit XCT

- **Copy the installation files:** `unzip xct6449.zip` to folder e.g. `/sbranch/CTK/`
- **Unzip the installation files:** `unzip xct6449.zip`

Result: The jar file for the XCT is available in the folder: `/sbranch/CTK/XpressConversionToolkit.jar`

In addition, the folder will be created: `/sbranch/CTK/sap/caldef`

3. Check the current Python Version

`python -V` (Note: Captial "V")

If your Version is Python 3.6 or later all is fine. If a no python or a lower Version has been installed upgrade your python Version or install the Universal Agent with the Python binding option (`--python yes`). This option will install python 3.6. along with your universal agent.

e.g.

```
sudo sh ./unvinst --network_provider oms --oms_servers 7878@192.168.88.12 --oms_port 7878  
--oms_autostart no --ac_netname OPSAUTOCONF --opscli yes --python yes
```

NOTE: the above install string does not work in case you did a user mode install

Official Download link: <https://www.python.org/downloads/>

Note: To check the current Python Version type in a shell: python -V (capital V)

4. Add the required python modules

It is assumed that the modules csv, logging, sys, datetime are already available. If not install them via pip.

In a command shell run as sudo or root:

(Example install module csv)

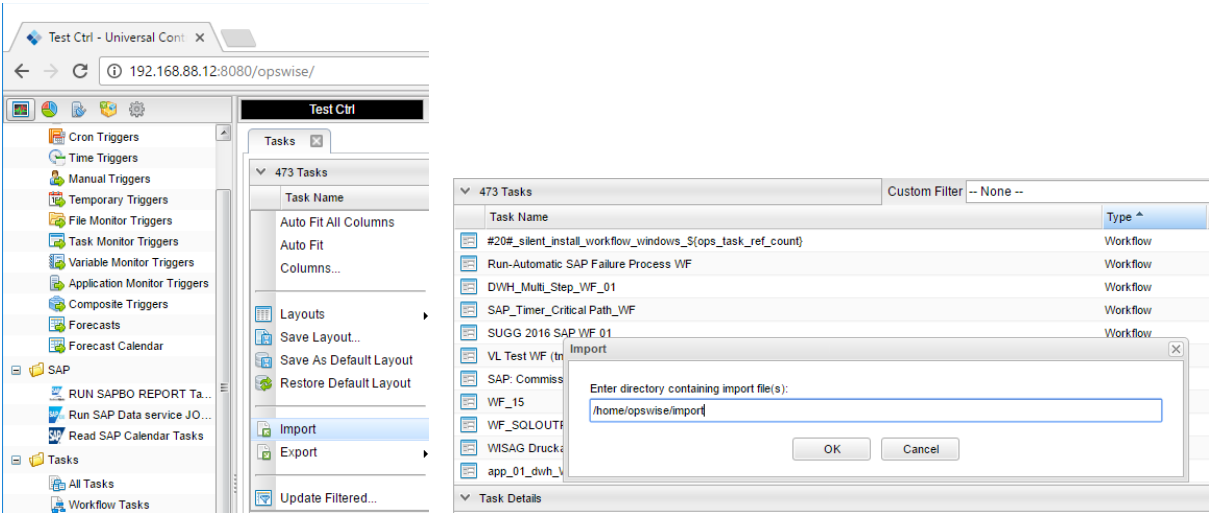
pip install csv

or in case of universal Agent with python binding:

/opt/universal/python3.6/bin/python3 -m pip install csv

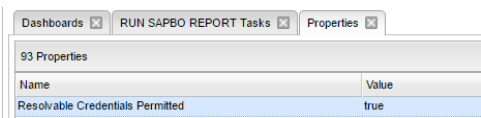
5. Import the Universal Task including the Universal Template to your Controller

Go to “All Tasks” and load via the Import functionality the Universal Task configuration into the Controller.



5 Universal Task Configuration

1. Activate: Resolvable Credentials in Universal Automation Center properties:



2. Fill Out the Universal Task for SAP Calendar Import:

ut_import_sap_calendar_csv Task Details: import sap calendar winagt - ashost connection

Update Launch Task View Parents Copy Delete Refresh Close

ut_import_sap_calendar_csv Task Variables Actions Virtual Resources Mutually Exclusive Instances Triggers Notes Versions

General

Task Name: import sap calendar winagt - ashost connection Version: 13

Task Description:

Member of Business Services:

Resolve Name Immediately: ☐ Time Zone Preference: -- System Default --

Hold on Start: ☐

Virtual Resource Priority: 10 Hold Resources on Failure: ☐

Further Info's:

System:

ut_import_sap_calendar_csv Details

Agent: \${SAP_AGENT} Agent Cluster:

Agent Variable: ☒ Agent Cluster Variable: ☐

Credentials: Cluster Broadcast:

Credentials Variable: ☐ Run with Highest Privileges: ☐

python log level: INFO sapnwrfdi: C:\Program Files\Universal\UAGSrv

dest: ashost: 192.168.88.12

sid: NSP client: 001

sapcred: SAP_CRED_WIN7_BCUSER opsciurl: 127.0.0.1:8080/opwise/

xtcred: XCT Credentials javabin:

sapout: C:\work\CTK\isap\caldef\ sap sysnr: 00

Conversion Tool: C:\work\CTK\XpressConversionToolkit.jar usap log level: info

calendar_csv: Import all Calendar: Yes

SAP Credentials:

Credential Details: SAP_CRED_WIN7_BCUSER

Update Convert... Delete Refresh Close

Credential Versions

Details

Name: SAP_CRED_WIN7_BCUSER Version: 5

Type: Resolvable

Runtime User: BCUSER

Runtime Password:

Description:

Express Conversion Tool Credentials XCT:

Credential Details: XCT Credentials

Update Convert... Delete Refresh Close

Credential **Versions**

Details

Name : Version :

Type :

Runtime User :

Runtime Password :

3. Create the CVS file to import SAP Calendar if not all calendar should be imported

You can copy and paste the CSV to the script library or load a CSV from an external file.

The CSV file has the following structure:

NOTE: If a factory calendar has no holiday calendar, then leave the field empty e.g. 02, means extract factory calendar 02 without a holiday calendar.

factory_calid,holiday_calid

01,08

02,

AJ,04

Example:

Script Details: sap_calendar_npl_001

Update Upload Script Copy Delete Refresh Close

Script **Tasks** **Notes** **Versions**

Details

Script Name : Version :

Description :

Script Type : Resolve UAC Variables : ☒

factory_calid,holiday_calid
01,08
02,
AJ,04

Update Upload Script Copy Delete Refresh Close

Task Output:

```

2018-09-17 13:58:18,102 - INFO - ##INFO# SAP destination: WIESLOCH
2018-09-17 13:58:18,102 - INFO - ##INFO# SAP ASHOST:
2018-09-17 13:58:18,102 - INFO - ##INFO# SAP SID: NPL
2018-09-17 13:58:18,102 - INFO - ##INFO# SAP Client: 001
2018-09-17 13:58:18,102 - INFO - ##INFO# SAP User: developer
2018-09-17 13:58:18,102 - INFO - ##INFO# SAP Password: ****
2018-09-17 13:58:18,102 - INFO - ##INFO# Controller url: 127.0.0.1:8080/****/
2018-09-17 13:58:18,102 - INFO - ##INFO# Export Process from SAP started
2018-09-17 13:58:18,102 - INFO - ##INFO# exporting factory calendar with ID: 01
2018-09-17 13:58:18,103 - INFO - ##INFO# exporting holiday calendar with ID: 08
2018-09-17 13:58:18,103 - INFO - ##INFO# using destination server connection
2018-09-17 13:58:18,775 - INFO - ##INFO# Export Process from SAP finished

```

Result in Universal Controller:

After the import the calendar are imported in the Universal Controller.

Example: NPL_001_01

Means Factory Calendar 01 has been imported from SAP SID: NPL Client 001

The imported Calendar consists of CustomDays List of Type workday and holiday.

The screenshot shows the Stonebranch Universal Controller interface. The left sidebar contains a navigation menu with categories like Task Instances, Triggers, Tasks, S3, Universal Tasks, and Other. The main area displays the 'Calendars' section for the 'WIESLOCH' system. A table lists various calendars, including 'NPL_001_01' (Germany (Standard) HolidayId: 08). Below this, the 'Calendar Details' section shows '18 Calendar Custom Days' with a table of custom days and their descriptions.

Custom Day	Description
CustomDays2024BusinessdayNPL_001_01	converted: 249 dates
CustomDays2020BusinessdayNPL_001_01	converted: 251 dates
CustomDays2017BusinessdayNPL_001_01	converted: 249 dates
CustomDays2022HolidayNPL_001_01	converted: 16 dates
CustomDays2016HolidayNPL_001_01	converted: 16 dates
CustomDays2024HolidayNPL_001_01	converted: 16 dates
CustomDays2018BusinessdayNPL_001_01	converted: 248 dates

Description:

Field	Required	Description
Agent	Yes	Linux Universal Agent to run the USAP commands and bash shell script.
Agent Cluster	optional	Optional Agent Cluster for load balancing
Client	Yes	SAP Client to connect to e.g. 100
dest	Yes	SAP destination in the file: <i>/opt/universal/uagsrv/sapnwrfc.ini</i>
Ashost	Optional	If this Parameter is provided the connection is done via an application server connection using the info provided in the fields client, sysnr and ashost. If this Parameter is not provided the connection is done using the destination configured in the SAP destination in the file: <i>/opt/universal/uagsrv/sapnwrfc.ini</i>
XCT credential	Yes	Universal Controller REST API credentials. (User Credentials with the rights to use the REST API). These credentials are used by XCT to create the calendar in UC via REST command)
Sapcred	Yes	Credentials of the SAP System
Opscliurl	Yes	url of the Universal Controller e.g. http://192.168.88.12:8080/opswise or for cloud controller: <a href="https://<customer>.stonebranch.cloud">https://<customer>.stonebranch.cloud
Java bin	Yes	Path to the Java bin folder: Example: <i>/usr/bin/</i>
Conversion Tool	Yes	Full path to the conversion tool jar file. Example: <i>/sbranch/CTK/XpressConversionToolkit.jar</i>
Usap loglevel	Yes	Python log level INFO, DEBUG, WARN, ERROR, CRITICAL
Calendar_csv	Yes	CSV file You can copy and paste the CSV to the script library or load a CSV from an external file. The CSV file has the following structure:

Field	Required	Description
		<p>NOTE: If a factory calendar has no holiday calendar, then leave the field empty e.g. 02, means extract factory calendar 02 without a holiday calendar.</p> <p><i>factory_calid,holiday_calid</i></p> <p><i>01,08</i></p> <p><i>02,</i></p> <p><i>AJ,04</i></p>
Import All Calendar [Yes No]	Yes	Defines if all calendar should be imported from SAP. If set to "Yes" any assigned csv file is ignored and all valid calendar are imported.

6 Test Cases

The following basic test cases has been performed:

Case#	Assumed behavior	Result
Import SAP Calendar: <i>factory_calid,holiday_calid</i> 01,08 02, AJ,04	Three factory calendars are imported. The factory calendar 02 does not contain a holiday calendar	Correct
Import SAP Calendar a second time <i>factory_calid,holiday_calid</i> 01,08 Check that the new calendar overrides the old one. (Note: no new version is created, because the master should always be the SAP system.)	The new imported calendar has overridden the existing one.	Correct
Import calendar that does not exist: <i>factory_calid,holiday_calid</i> 01,08 <i>xx,xx</i> 02,	Task Fails: UNV5869E Retrieving factory calendars failed: (267) : Factory calendar xx does not exist UNV0627E SAP RFC error: UspRfcSetInt, RFC_INVALID_PARAMETER UNV0627E SAP RFC error: UspRfcSetInt, field 'LIMIT_PAGES' not found UNV0616E Universal Connector ending unsuccessfully with exit code 202. 2018-09-17 16:57:52,110 - ERROR - ##ERROR# Error Code: 202 Note: Only the first calendar is creates, when the error happens (xx,xx) the program fails with error 202.	Correct
Wrong java bin path	sh: /usr/bin/djava: No such file or directory	Correct

Case#	Assumed behavior	Result
	/bin/sh: /usr/bin/djava: No such file or directory 2018-09-17 17:06:02,636 - ERROR - ##ERROR# Error Code: 127	
Wrong conversion tool path	Error: Unable to access jarfile /sbranch/CTKs/XpressConversionToolkit.jar 2018-09-17 17:06:43,834 - ERROR - ##ERROR# Error Code: 1	Correct
Wrong client	UNV0629E SAP logon error: Client 002 is not available in this system UNV0616E Universal Connector ending unsuccessfully with exit code 202. 2018-09-17 17:08:48,213 - ERROR - ##ERROR# Error Code: 202	Correct
Wrong destination	UNV0629E SAP logon error: Parameter ASHOST, GWHOST or MSHOST is missing. UNV0616E Universal Connector ending unsuccessfully with exit code 202. 2018-09-17 17:09:41,295 - ERROR - ##ERROR# Error Code: 202	Correct
Application server connection	2018-09-17 17:10:51,059 - INFO - ##INFO# using application server connection	Correct
Import all Calendar set to yes	All valid SAP Calendar have been imported	Correct

7 Document References

There are no document references.