Universal Task Documentation

Universal Automation Center support for importing SAP Calendar using a CSV file

ut-sap-import-calendar-csv

Associated Activities:

Date: 16 May 2019

Author: Nils Buer

Revision: 00

CONFIDENTIALITY INFORMATION

Distribution list: Stonebranch Customer

Revision	Date	Author	Changes
00	20190516	Nils Buer	Initial Document (WIP)

Abstract:

This Universal Task allows to mass import SAP calendar into Universal Automation Center. The SAP calendar to import are first extracted from SAP using an SAP Function module and then loaded to the Universal Controller via the Rest API. After the import the SAP calendar are available as Universal Automation Center Calendar with custom days for holidays and business days.

Contents

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 Introduction

This Universal Task allows to mass import SAP factory and related holiday calendar into Universal Automation Center. The SAP calendar to import are first extracted from SAP using an SAP Function module and then loaded to the Universal Controller via the Rest API. After the import the SAP calendar are available as Universal Automation Center Calendar with custom days of type holidays and business days.

Some details about the Universal Task to import SAP calendar:

- The Universal Tasks allows to import all SAP factory and holiday Calendar related to a given SID and Client. Optionally only a selected list of calendar ids can be imported. The list can be provided by a csv file uploaded to the script library.
- The import can be scheduled via a Time Trigger e.g. import every day the sap calendar.
- It can be configured which calendar years are imported e.g. current year + 2 additional years
- The Universal Task is based on a Python script template,
- no python needs to be installed; in case the Universal Agent has been installed with python binding option (parameter –python yes)
- The Universal Task extracts the SAP calendar via the SAP certified UASP connector calling the "calendars" function.
- The Universal Task imports the extracted SAP Calendar by calling the Universal Controller Rest API.
- The Universal Task supports both Universal Agent for Linux/Unix and Windows
- You can select different log-levels e.g. Info and debug
- All Passwords are encrypted using Controller Credentials

3 Installation

3.1 Requirements for Linux/Windows Agent

Universal Template name: ut-import-sap-calendar-csv

Related UAC XML Files for template and task: [1]:

Requirements to remotely connect from a Windows or Linux agent to an SAP System to extract the SAP factory and related holiday calendar:

- Universal Agent 6.5.x or higher
- Universal Agent SAP Connector license added to the Universal Agent
- Universal Agent installed with Python Option enabled
- Universal Controller 6.5. or higher
- For Python the following modules are required:

  - *logging, for python loglevel support*
  - *sys*
  - *csv*
  - *time*
  - *datetime*
  - *os, for linux command execution*
  - *shutil*
  - *subprocess*
  - *io*
  - *unicodedata*
  - *json*
  - *requests, to call Universal Controller REST API*

Note: Only the module **requests** need to be added via python installer pip. All other modules are available when installing the agent with the python option.

3.2   Installation Steps

The following describes the installation steps:

1. **Check the current Python binding Version of the Universal Agent**

   /opt/universal/python3.6/bin/python3 -V (note Captial "V")

   Example:

   ```
   walldorf:/home/stonebranch/SAP/caldef # /opt/universal/python3.6/bin/python3 -V
   Python 3.6.5
   ```

   If your Version is Python 3.6.x or later all is fine. If no python or a lower Version has been installed update your agent with the Universal Agent 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**

2. **Add the required python modules**

   The Universal Task requires the module **requests.** This can be added via Python Package Installer *pip*.

   Windows Agent:
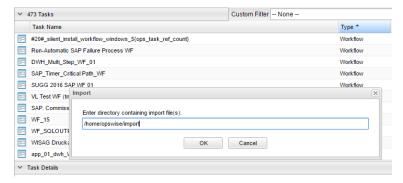   *C:"\Program Files\Universal\Python36\python.exe" -m pip install requests*

   Linux Agent:
   sudo /opt/universal/python3.6/bin/python3 -m pip install requests

   Note: pip requires access to the Internet. If that is not available Stonebranch can provide the module as pre-configured python site-packages.
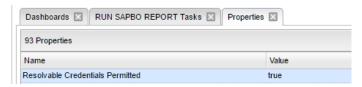

3. **Import the Universal Task including the Universal Template to your Controller**

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

4   Universal Task Configuration

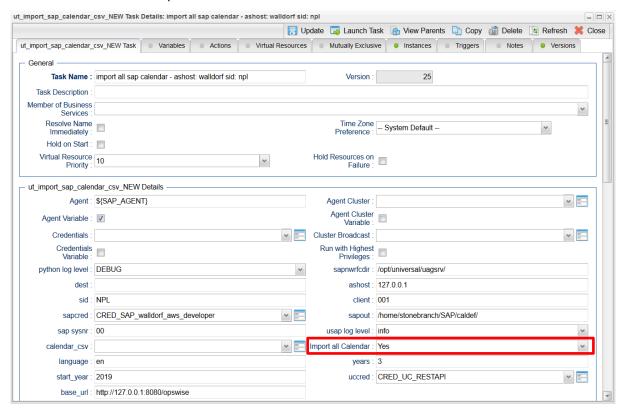**1   Activate: Resolvable Credentials in Universal Automation Center properties:**

2   Import all Calendar or only a selected list

The Universal Tasks allows to import all SAP factory and holiday Calendar related to a given SID and Client. Optionally only a selected list of calendar ids to be imported. The list can be provided by a csv file uploaded to the script library.

2.1   Import all Calendar

If you want to import all Calendar belong to a certain Sap SID and Client, then fill out the SID and Client, and select the list field: Import all Calendar = "Yes".

2.2   Import a selected list of Calendar

If you only want to import only certain calendar, create a CVS file containing the SAP factory and related holiday Calendar which you want to import to Universal Controller.

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. AJ, means extract factory calendar AJ without a holiday calendar.
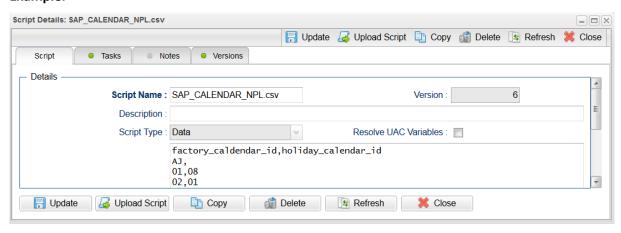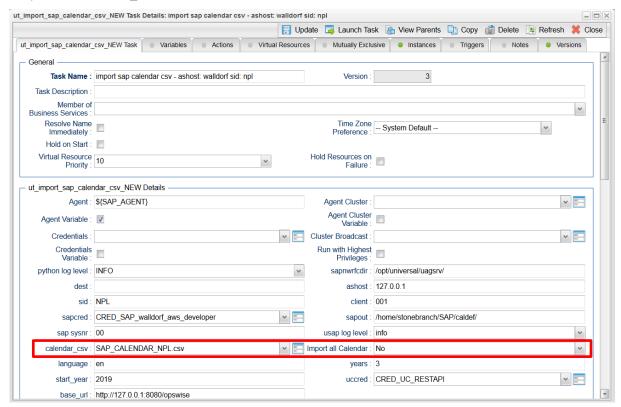
factory_calid,holiday_calid

AJ,

01,08

02,01

Example:

If you want to import all Calendar contained in the provided cvs file belong to a certain Sap SID, and then fill out the SID, Client, select the list field: Import all Calendar = "No" and select the csv file in the script field: *calendar_cvs*
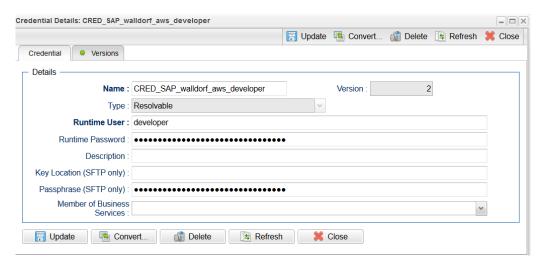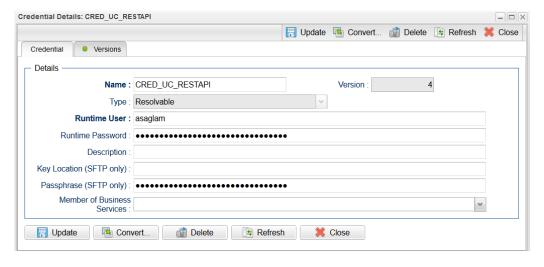
3 Credential for Universal Task

The following credentials are used:

- SAP Connection Credentials to extract the Calendar from SAP via RFC connection
- Rest API Credentials to create the Calendar in Universal Controller

3.1 SAP Connection Credentials:

3.2 REST API Credentials:

4 Sample Task Output

```
UNV3224I SAP system kernel release: 753
UNV3225I Local RFC version: 721
UNV0669I CPI-C Conversation ID = (23119867)
UNV0670I XMI Session ID = (AC1F1602271A5CDD640F090B)
UNV3031I Requesting interface: XBP 3.0
UNV3032I Using interface: XBP 3.0
UNV0672I RFC connection successfully established.
 2019-05-16 13:22:24,055 - INFO - Export Process from SAP finished
 2019-05-16 13:22:24,252 - INFO - 4 Calendar have been imported from SAP
```

5   Result in Universal Controller

After successful execution of the Universal Task the SAP factory calendar are imported in the Universal Controller.

Example: NPL_001_01

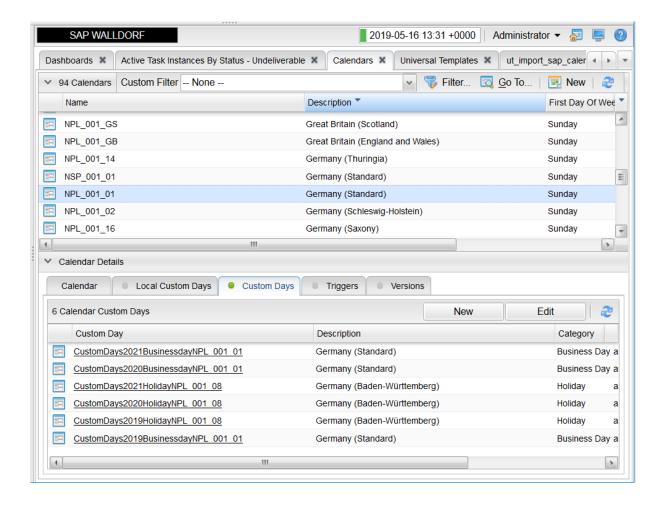Means Factory Calendar 01 has been imported from SAP SID: NPL Client 001

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

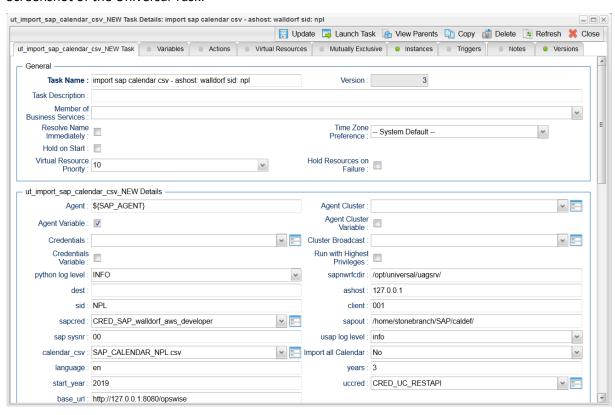The custom days of type "workdays" are the business days in the SAP factory calendar.

The custom days of type "holidays" are the entries on the SAP Holiday calendar.

(Note: SAP special rules are reflected in the custom days of type "workdays")

5 Description of the Universal Task fields

Screenshot of the Universal Task:

Field	Required	Description
Agent	Yes	Linux or Windows Universal Agent to run the USAP commands and python template script
Agent Cluster	optional	Optional Agent Cluster for load balancing
Client	Yes	SAP Client to connect to e.g. 100
dest	Optional	SAP destination configured in the SAP config file: /opt/universal/uagsrv/*sapnwrfc.ini* If destination ashost is provided this field is ignored
ashost	Optional	If this Parameter is provided the connection is done via an application server connection using the info provided in the field's client, Sap sysnr and ashost. If this Parameter is not provided the connection is done using the destination configured in the SAP destination in the file: /opt/universal/uagsrv/*sapnwrfc.ini*
sid	Yes	SAP SID from where the calendar is extracted
client	Yes	SAP Client from where the calendar is extracted

Field	Required	Description
Sap sysnr	Yes	SAP RFC connection Parameter System Number
sapnwrfcdir	Yes	Only used in case destination connection is used.
years	Yes	Provide the number of calendar years you want to extract. Example: years = 3 and year = 2019 means calendar from 2019, 2020 and 2021 are extracted.
year	Yes	From this year on the calendar are extracted. Example: years = 3 and year = 2019 means calendar from 2019, 2020 and 2021 are extracted
Sapcred	Yes	Credentials of the SAP System
Usap loglevel	Yes	UASP connector log level INFO, DEBUG, WARN, ERROR, CRITICAL
Python loglevel	Yes	Python log level INFO, DEBUG, WARN, ERROR, CRITICAL
base_url	Yes	URL of the Controller, where the calendar should be generated.
sapout	Yes	Directory where the SAP Calendar export files are written. Read and write access is required for this folder.
language	no	SAP language e.g. de, en ..
Import all calendar	no	Import all Calendar = "Yes", means import all Calendar belonging to a certain Sap SID and Client. The field Calendar_csv is ignored in that case. Import all Calendar = "No" Means import all Calendar contained in the provided cvs file belong to a certain Sap SID, Client
Calendar_csv	no	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: NOTE: If a factory calendar has no holiday calendar, then leave the filed empty e.g. 02, means extract factory calendar 02 without a holiday calendar. *factory_calid,holiday_calid* *01,08* *02,* *AJ,04*

6 Test Cases

The following basic test cases has been performed:

Case#	Assumed behavior	Result
Import SAP Calendar: *factory_calid,holiday_calid* *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 *factory_calid,holiday_calid* *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: *factory_calid,holiday_calid* *01,08* ***xx,xx*** *02,*	Task Fails: UNV5869E Retrieving factory calendars failed: (267) : Factory calendar xx does not exist UNV0616E Universal Connector ending unsuccessfully with exit code 202. **Note:** Only the first calendar is creates, when the error happens (xx,xx) the program fails with error 202.	Correct
Wrong client	UNV0629E SAP logon error: Client 002 is not available in this system UNV0616E Universal Connector ending unsuccessfully with exit 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.	Correct
Application server connection	INFO - ##INFO# using application server connection	Correct

7   Document References

This document references the following documents:

Ref#	Description
[1] XML extract of Universal Task	UAC XML extract of the Universal Template • ops_unv_tmplt_9dbf3f6a4524480396ffb5712d22b7ba.xml