

Universal Controller 7.0.x

Available Integrations

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Built-In Universal Templates

- Introduction
- Available Built-In Universal Templates

Introduction

Specific Universal Templates are delivered with the Universal Controller installation package.

These Built-in Universal Templates are delivered READ ONLY; if you require changes to a Built-In Universal Template, you have to copy the Built-in Universal Template to create a new Universal Template, which you then can edit with the ops_universal_template_admin security role. Stonebranch does not provide support or updates for new Universal Templates created from the Built-in Universal Templates.

To use a Built-In Universal Template, you first must load it from the List/Load Built-In Universal Templates Server Operation.

Open source Universal Templates will continue to be made available via the Stonebranch Marketplace. Customers can access the the Stonebranch Marketplace from the Stonebranch Customer Portal.

Available Built-In Universal Templates

The following tabled identifies the Built-In Universal Templates that are available for Universal Controller release 6.9.0.0.

The Name of each Universal Template is a link to a separate page containing detailed information about that template.

(For additional information about Universal Templates, see Universal Templates.)

Name	Description	Available from Release
UAC - SSH Tasks	Execute Command or Script on Remote SSH Server with no UC Agent Installed, Remote Server Requires an SSH Server.	UC 6.8.0.0
UAC - UDM Gateway Tasks	UDM Gateway Integration Tasks.	UC 6.8.0.0
UAC - Docker Image	Universal Task to manage Docker Images, Build, Remove, Pull, Push, and Tag Functions.	UC 6.9.0.0
UAC - Docker Container	Universal Task to manage Docker Containers, Run, Create, Start, Stop and Remove Functions.	UC 6.9.0.0
UAC - Docker Compose	Universal Task for Docker Compose Functions, Build, Up, Down, Start, Stop Functions.	UC 6.9.0.0
UAC - Powershell	Universal Task to Run Powershell Scripts.	UC 6.9.0.0
UAC - Kubernetes	Kubernetes List (Get), Create, Delete and Replace Functions.	UC 6.9.0.0
UAC - UA Install	Install UA via SSH Server, Download UA install from SB Website.	UC 6.9.0.0
UAC - Remote Controller	Run Task or Workflow on a Remote Universal Controller.	UC 6.9.0.0
UAC - UC Report	Run a Universal Controller report and deliver output to a specified server and file location.	UC 6.9.0.0

Universal Controller 7.0.x Available Integrations

UAC - SSH Tasks

- Overview
- Example Output
- Universal Task Details Fields

Overview

Universal Task to run a command or Universal Controller "data" script on a remote ssh server.

Enables the execution of commands and scripts from the Universal Controller script library on a remote Unix. Linux, or Windows SSH server.

- The Universal Task will end with the exit code from the remote command / script.
- Both stdout and stderr from the remote task are returned to the Universal Task's stdout. Stderr is used for messages from the Universal Task itself.
- Requires Python 3.6 or higher with the ssh2-python module installed. Tested with the Universal Agent bundled Python distribution.
- You can set different log-levels for the Universal task, providing you more or less information to suit your needs.

An SSH task is unable to provide the following functionality that is available for tasks that execute on a Universal Agent.

- No Agent visibility, status, or alerting is available
- The remote command or script cannot be cancelled from the controller UI, cancelling the SSH task will only cancel the Universal Task Python script that is initiating the SSH session
- No fault tolerant functionality
- No clustering, load balancing, or broadcast functionality

The Universal Task performs the following:

- 1. Connects to the Remote SSH Server
- 2. Authenticates to the Remote SSH Server via Userid and Password or SSH Public Key.
- 3. Execute Command on SSH Server or Transfer UC Data Script to Remote SSH Server and Execute.

Example Output

Type :	STDERR	Attempt : 1
	2020-03-23 14:27:09,652 - INFO 2020-03-23 14:27:09,662 - INFO 2020-03-23 14:27:09,684 - INFO 2020-03-23 14:27:09,742 - INFO	 Connect to Host = 10.0.75.1 on Port = 7822 Connected (version 2.0, client OpenSSH_7.6p1) Authentication (password) successful! RunCommand Exit status = 0
put :		

Type :	STDOUT	Attempt : 1
	total 20 drwx 1 root root 4096 Mar 16 16:24 drwxr-xr-x 1 root root 4096 Mar 16 16:24 -rw-rr 1 root root 3106 Apr 9 2018 drwx 2 root root 4096 Mar 16 16:24 -rW-rr 1 root root 148 Aug 17 2015	.bashrc .cache
Output :		

Universal Task Details Fields

Remote SSH Server :			Remote SSH Port :	22	
Remote SSH Credential :		× 10			
Command or Script :	Command	÷			
Command :					
Logging Level :	NotSet	m			

Field Label	el Description		Required
Remote SSH Server	Specify the Hostname for the Remote SSH Server		Y
Remote SSH Port			Y
Remote SSH Credential			Y
	If the Credential specifies a Key Location, Public Key Authentication will be performed.		
Command or Script	Specify whether to execute a Command, or Transfer and Execute a UC Data Script.		Y

Command	Command To be Executed on the Remote SSH Server	ls -la	Y (If Command or Script = Command)
Script	UC Data Script to be transferred and Executed on the Remote SSH server		Y (If Command or Script = Script)

UAC - UDM Gateway Tasks

- Overview
 - Example Output
 - Universal Task Details Fields

Overview

For integration of WLA / Job Scheduling with the UDM Gateway File Transfer solution. Universal Controller customers can implement the provided Universal Task.

- Universal Task (requires Universal Controller version 6.7.0.0 or higher).
- Uses the UDM Gateway Rest API (requires UDM Gateway Version 11 or higher).
- Requires Python 3.6 or higher with the requests module installed. Tested with the Universal Agent bundled Python distribution.
- Stdout returns information from the UDM Gateway. Stderr is used for messages from the Universal Task / Script itself.
- You can set different log-levels, providing you more or less information to suit your needs.

The Universal Task can automate the following UDM Gateway functions:

- PGP Encrypt
- PGP Decrypt
- Run a UDM Gateway Trigger
- SFTP File Upload
- SFTP File Download
- Trading Partner File Upload
- Trading Partner File Download
- Trading Partner File Upload using a Regex or Generic Filename Pattern
- Trading Partner File Download using a Regex or Generic Filename Pattern

The Universal Task performs the following:

- 1. Login to UDM Gateway Server
- 2. Check UDM Gateway Server Version
- 3. Create Temporary UDM Gateway Trigger with a unique name to perform the desired action. Except Run Trigger which copies the existing trigger to the temporary trigger.
- 4. Run Temporary UDM Gateway Trigger.
- 5. Get Temporary UDM Gateway Trigger Status
- 6. Delete Temp Trigger
- 7. Retrieve Trigger Log
- 8. Close UDM Gateway Session

Example Output

pe ;	STDERR	Attempt : 1
put :	2019-04-10 14:37:02,745 - INFO 2019-04-10 14:37:03,043 - INFO 2019-04-10 14:37:03,9046 - INFO 2019-04-10 14:37:03,393 - INFO 2019-04-10 14:37:03,393 - INFO 2019-04-10 14:37:03,505 - INFO 2019-04-10 14:37:03,505 - INFO 2019-04-10 14:37:03,513 - INFO 2019-04-10 14:37:06,671 - ERROR 2019-04-10 14:37:06,673 - INFO 2019-04-10 14:37:06,684 - INFO 2019-04-10 14:37:06,684 - INFO 2019-04-10 14:37:14,702 - INFO 2019-04-10 14:37:14,702 - INFO 2019-04-10 14:37:14,739 - INFO 2019-04-10 14:37:14,739 - INFO 2019-04-10 14:37:14,751 - INFO 2019-04-10 14:37:14,752 - INFO	 Accessing UDM Gateway server UDM Gateway Login Successful for User ccocksedge Getting UDM Gateway Server Version UDM Gateway Get Version Successful. Version = 11.1.7.297 Creating Temporary UDM Gateway Trigger UDM Gateway Trigger = 215942219052766007844971137023441993136 Run Temporary UDM Gateway Trigger UDM Gateway Run Trigger Successful, Trigger = 215942219052766007844971137023441993136 Retrieving Temporary Trigger Status Trigger FALLED, Trigger = 215942219052766007844971137023441993136 Deleting UDM Gateway Trigger Trigger Trigger 215942219052766007844971137023441993136 Deleting UDM Gateway Trigger Log UDM Gateway Start Log Search Successful UDM Gateway Log Search Complete UDM Gateway Delete Log Search Successful UDM Gateway Logoff Successful for User ccocksedge

Type	STDOUT	Attempt 1
	"trigger queued" "trigger=215942219052766007844971137023441993136; eventId=ff732174-a716-4	581-aee7-5bf08df2c0ff"
	"trigger started" "trigger=215942219052766007844971137023441993136; eventId=ff732174-a716-	4581-aee7-5bf08df2c0ff"
	"action started" "trigger=215942219052766007844971137023441993136; eventId=ff732174-a716-4	581-aee7-5bf08df2c0ff; action=com.jscape.inet.mft.workflow.actions.TradingPartnerFileUploadAction"
	"action failed" "trigger=215942219052766007844971137023441993136; eventId=ff732174-a716-45	81-aee7-5bf08df2c0ff; action=com.jscape.inet.mft.workflow.actions.TradingPartnerFileUploadAction; message=Connection refused: connect"
	"trigger error" "trigger=215942219052766007844971137023441993136; eventId=ff732174-a716-45	81-aee7-5bf08df2c0ff; action=com.jscape.inet.mft.workf1ow.actions.TradingPartnerFi1eUpToadAction; message=Connection refused: connect"
	"trigger completed" "trigger=215942219052766007844971137023441993136; eventId=ff732174-a71	6-4581-aee7-5bf08df2c0ff"

Universal Task Details Fields

Function = PGP Encrypt

UDM Gateway Server :			UDM Gateway Credential :	*
UDM Gateway Domain :				
Function :	PGP Encrypt	~		
Encrypted File Name :				
Plain Text File Name :				
PGP Key :				
Delete Source File :	E.		Compress :	
Logging Level :	Info	*		

Field Label	Description	Example	Required
UDM Gateway Server	Specify the URL for the UDM Gateway Server	https://localhost:11880	Y
UDM Gateway Credential	Select the Credential Definition to access the UDM Gateway Server		Y
UDM Gateway Domain	UDM Gateway Server Domain	Local	Y
Function	Select the PGP Encrypt Function		Y
Encrypted File Name	The name of the target encrypted file	/demo/my-data.pgp	Y
Plain Text File Name	The name of the source plaintext file	/demo/my-data.txt	Y
PGP Key	PGP Key to use for encryption	secret: LocalDemo <stonebranch.demo@stonebranch.com></stonebranch.demo@stonebranch.com>	Y
Delete Source File	Specify if the source plaintext file is deleted		Y
Compress	Specify if the target encrypted file is compressed		Y
Logging Level	Controls messages issues from the Universal Task Script None Info Debug Warning Critical 	None	Y

Function = PGP Decrypt

UDM Gateway Server :			UDM Gateway Credential :	
UDM Gateway Domain :				
Function :	PGP Decrypt	*		
Encrypted File Name :				
Plain Text File Name :				
PGP Key :				
Delete Source File :				
Logging Level :	Info	×		

Field Label	Description	Example	Required
UDM Gateway Server	Specify the URL for the UDM Gateway Server	https://localhost:11880	Y
UDM Gateway Credential	Select the Credential Definition to access the UDM Gateway Server		Y
UDM Gateway Domain	UDM Gateway Server Domain	Local	Y
Function	Select the PGP Decrypt Function		Y

Encrypted File Name	The name of the target encrypted file	/demo/my-data.pgp	Y
Plain Text File Name	The name of the source plaintext file	/demo/my-data.txt	Y
PGP Key	PGP Key to use for encryption	secret: LocalDemo <stonebranch.demo@stonebranch.com></stonebranch.demo@stonebranch.com>	Y
Delete Source File	Specify if the source plaintext file is deleted		Y
Logging Level	Controls messages issues from the Universal Task Script None Info Debug Warning Critical 	None	Y

Function = Run Trigger

UDM Gateway Server : UDM Gateway Domain :			UDM Gateway Credential :	× 📰
Function :	Run Trigger	~		
Trigger Name :				
Logging Level :	Info	*		

Field Label	Description	Example	Required
UDM Gateway Server	Specify the URL for the UDM Gateway Server	https://localhost:11880	Y
UDM Gateway Credential	Select the Credential Definition to access the UDM Gateway Server		Y
UDM Gateway Domain	UDM Gateway Server Domain	Local	Y
Function	Select the Run Trigger Function		Y
Trigger Name	Provide the name of an existing UDMG Trigger	Test Trigger	Y
Logging Level	Controls messages issues from the Universal Task Script None Info Debug Warning Critical 	None	Y

Function = SFTP Upload

UDM Gateway Server :			UDM Gateway Credential :	× 5-
UDM Gateway Domain :				
Function :	SFTP Upload	*		
SFTP Host :			SFTP Port : 22	
SFTP Credential :		*		
Local File Name :				
Remote Directory :				
Transfer Mode :	Binary	*	Overwrite If File Exists :	
Retry Limit :	0		Retry Interval : 60	
Logging Level :	Info	~		

Field Label	Description	Example	Required
UDM Gateway Server	Specify the URL for the UDM Gateway Server	https://localhost:11880	Y
UDM Gateway Credential	Select the Credential Definition to access the UDM Gateway Server		Y
UDM Gateway Domain	UDM Gateway Server Domain	Local	Y
Function	Select the SFTP Upload Function		Y
SFTP Host	Remote SFTP server Host Name or IP	127.0.0.1	Y
SFTP Port	Remote SFTP server port	22	N
SFTP Credential	Select the Credential Definition to access the remote SFTP server		Y
Local File Name	Location of the Local File	/demo/my-data.pgp	Y
Remote Directory	Remote SFTP Server Directory	/	Y
Transfer Mode	Transfer Mode (Ascii, Binary, Auto)	Ascii	N
Overwrite if File Exists	Overwrite destination file(s) if it exists		N
Retry Limit	Maximum Retry Attempts	0	N
Retry Interval	Interval in Seconds Between Retries	60	N
Logging Level	Controls messages issues from the Universal Task Script None Info Debug Warning Critical 	None	Y

Function = SFTP Download

UDM Gateway Server :		UDM Gateway Credential :
UDM Gateway Domain :		
Function :	SFTP Download	
SFTP Host :		SFTP Port : 22
SFTP Credential :	×	
Local File Name :		
Remote File Name :		
Transfer Mode :	Binary 👻	
Retry Limit :	0	Retry Interval : 60
Logging Level :	Info	

Field Label	Description	Example	Required
UDM Gateway Server	Specify the URL for the UDM Gateway Server	https://localhost:11880	Y
UDM Gateway Credential	Select the Credential Definition to access the UDM Gateway Server		Y
UDM Gateway Domain	UDM Gateway Server Domain	Local	Y
Function	Select the SFTP Download Function		Y
SFTP Host	Remote SFTP server Host Name or IP	127.0.0.1	Y
SFTP Port	Remote SFTP server port	22	N
SFTP Credential	Select the Credential Definition to access the remote SFTP server		Y
Local File Name	Location of the Local File	/demo/my-data.pgp	Y
Remote File Name	Remote SFTP File	/my-data.pgp	Y
Transfer Mode	Transfer Mode (Ascii, Binary, Auto)	Ascii	N
Retry Limit	Maximum Retry Attempts	0	N
Retry Interval	Interval in Seconds Between Retries	60	N
Logging Level	Controls messages issues from the Universal Task Script None Info Debug Warning Critical	None	Y

Function = Trading Partner Upload

UDM Gateway Server :			UDM Gateway Credential :	*
UDM Gateway Domain :				
Function :	Trading Partner Upload			
Trading Partner :	1			
Local File Name :				
Remote Directory :				
Transfer Mode :	Binary	>	Passive Mode :	
Retry Limit :	0		Retry Interval : 60	
Logging Level :	Info	×		

Field Label	Description	Example	Required
UDM Gateway Server	Specify the URL for the UDM Gateway Server	https://localhost:11880	Y
UDM Gateway Credential	Select the Credential Definition to access the UDM Gateway Server		Y
UDM Gateway Domain	UDM Gateway Server Domain	Local	Y
Function	Select the Trading Partner Upload Function		Y
Trading Partner	UDM Gateway Trading Partner definition	Customer A	Y
Local File Name	Location of the Local File	/demo/my-data.pgp	Y
Remote Directory	Remote Trading Partner Directory	1	Y
Transfer Mode	Transfer Mode (Ascii, Binary, Auto)	Ascii	N
Passive Mode	Passive Mode (true, false)		N
Retry Limit	Maximum Retry Attempts	0	N
Retry Interval	Interval in Seconds Between Retries	60	N
Logging Level	Controls messages issues from the Universal Task Script None Info Debug Warning Critical	None	Y

Function = Trading Partner Download

UDM Gateway Server :			UDM Gateway Credential :	× 23
UDM Gateway Domain :				
Function :	Trading Partner Download	~		
Trading Partner :				
Local File Name :				
Remote File Name :				
Transfer Mode :	Binary	*	Passive Mode : 📃	
Retry Limit :	0		Retry Interval : 60	
Logging Level :	Info	*		

Field Label	Description	Example	Required
UDM Gateway Server	Specify the URL for the UDM Gateway Server	https://localhost:11880	Y
UDM Gateway Credential	Select the Credential Definition to access the UDM Gateway Server		Y
UDM Gateway Domain	UDM Gateway Server Domain	Local	Y
Function	Select the Trading Partner Download Function		Y
Trading Partner	UDM Gateway Trading Partner definition	Customer A	Y
Local File Name	Location of the Local File	/demo/my-data.pgp	Y
Remote File Name	Remote Trading Partner File	/my-data.pgp	Y
Transfer Mode	Transfer Mode (Ascii, Binary, Auto)	Ascii	N
Passive Mode	Passive Mode (true, false)		N
Retry Limit	Maximum Retry Attempts	0	N
Retry Interval	Interval in Seconds Between Retries	60	N
Logging Level	Controls messages issues from the Universal Task Script None Info Debug Warning Critical 	None	Y

Function = Trading Partner RegEx Upload

UDM Gateway Server :		UDM Gateway Credential		¥ 📰
UDM Gateway Domain :				
Function :	Trading Partner RegEx Upload	~		
Trading Partner :				
Regular Expression / Wildcard :		Expression Type	Regular Expression	*
Local Directory :				
Remote Directory :				
Transfer Mode :	Binary	Y Passive Mode	:	
Fail If No Files Found :		Delete On Success	: 🗖	
Retry Limit :	0	Retry Interval	: 60	
Logging Level :	Info	~		

Field Label	Description	Example	Required
UDM Gateway Server	Specify the URL for the UDM Gateway Server	https://localhost:11880	Y
UDM Gateway Credential	Select the Credential Definition to access the UDM Gateway Server		Y
UDM Gateway Domain	UDM Gateway Server Domain	Local	Y
Function	Select the Trading Partner RegEx Upload Function		Y
Trading Partner	UDM Gateway Trading Partner definition	Customer A	Y
Regular Expression / Wildcard	Specify the Regular Expression or Wildcard	*.txt	N
Expression Type	Select either "Regular Expression" or "Widlcard"		Y
Local Directory	Location of the Local File	/demo	Y
Remote Directory	Remote Trading Partner Directory	1	Y
Transfer Mode	Transfer Mode (Ascii, Binary, Auto)	Ascii	N
Passive Mode	Passive Mode (true, false)		N
Fail if No Files Found	Specify whether the task should fail if no files match the specified expression (Regular Expression or Wildcard)		N
Delete on Success	Specify whether files should be deleted after successful transfer		N
Retry Limit	Maximum Retry Attempts	0	N
Retry Interval	Interval in Seconds Between Retries	60	N
Logging Level	Controls messages issues from the Universal Task Script None Info Debug Warning Critical	None	Y

Function = Trading Partner RegEx Download

UDM Gateway Server : UDM Gateway			UDM Gateway Credential :	× 1
Domain :		101		
Function .	Trading Partner RegEx Download	~		
Trading Partner :				
Regular Expression / Wildcard :			Expression Type : Wildcard	¥
Local Directory :				
Remote Directory :				
Transfer Mode :		~	Passive Mode :	
Fail If No Files Found :		C	Delete On Success :	
Retry Limit :	0		Retry Interval : 60	
Logging Level :	Info	*		

Field Label	Description	Example	Required
UDM Gateway Server	Specify the URL for the UDM Gateway Server	https://localhost:11880	Y
UDM Gateway Credential	Select the Credential Definition to access the UDM Gateway Server		Y
UDM Gateway Domain	UDM Gateway Server Domain	Local	Y
Function	Select the Trading Partner RegEx Download Function		Y
Trading Partner	UDM Gateway Trading Partner definition	Customer A	Y
Regular Expression / Wildcard	Specify the Regular Expression or Wildcard	*.txt	Y
Expression Type	Select either "Regular Expression" or "Widlcard"		Y
Local Directory	Location of the Local File	/demo	Y
Remote Directory	Remote Trading Partner Directory	1	Y
Transfer Mode	Transfer Mode (Ascii, Binary, Auto)	Ascii	N
Passive Mode	Passive Mode (true, false)		N
Fail if No Files Found	Specify whether the task should fail if no files match the specified expression (Regular Expression or Wildcard)		N
Delete on Success	Specify whether files should be deleted after successful transfer		N
Retry Limit	Maximum Retry Attempts	0	N
Retry Interval	Interval in Seconds Between Retries	60	N

Logging Level	Controls messages issues from the Universal Task Script	None	Y
	 None Info Debug Warning Critical 		

UAC - Docker Image

- Universal Task to Manage Docker Images; Run, Create, Start, Stop, and Remove Functions
- Example Output
- Universal Task Details Fields
 - Docker Function = Build
 - Docker Function = Remove
 - Docker Function = Pull
 - Docker Function = Push
 - Docker Function = Tag

Universal Task to Manage Docker Images; Run, Create, Start, Stop, and Remove Functions

This Universal Task can automate the following Docker Image functions:

- Build
- Remove
- Pull
- Push
- Tag

Example Output

Type :	STDERR	Attempt : 1	
	2020-06-16 10:19:46,557 - INFO - 2020-06-16 10:22:51,719 - INFO -	Build Docker Image ssh-server:lat (<image: 'ssh-server:latest'="">, <i< td=""><td>est tertoolstee object at 0x0</td></i<></image:>	est tertoolstee object at 0x0
Output :			
- apart			
	4		•

Type :	STDOUT			Atterr	ipt :	1	
	(<image:< td=""><td>'ssh-server:late</td><td>st'>, <itertool< td=""><td>stee objec</td><td>t at 0x0000019</td><td>95477D2F08>)</td><td></td></itertool<></td></image:<>	'ssh-server:late	st'>, <itertool< td=""><td>stee objec</td><td>t at 0x0000019</td><td>95477D2F08>)</td><td></td></itertool<>	stee objec	t at 0x0000019	95477D2F08>)	
Output :							
Output .							

Universal Task Details Fields

Docker Function = Build

Docker Function :	Build	*	
Image Name :		Dockerfile :	* 🖂
			0 0
Image Build	Build Argument	Build Argument Value	
Arguments :		No items to show.	
Remove :		Pull :	
Logging Level :	None	~	
Runtime Directory :			

Field Label	Description	Example
Image Name	Docker Image Name (including tag)	myimage:latest
Dockerfile	Select the required dockerfile from the UC script library	
Image Build Arguments	Specify options to pass to the docker image build	
Remove	Always remove intermediate containers, even after unsuccessful builds	
Pull	Always attempt to pull a newer version of the base image	
Logging Level	Controls messages issued from the Universal Task: None Info Debug Warning Critical 	None
Runtime Directory	Will be used as the build context	/docker/builds/myimage

Docker Function = Remove

ocker Function :	Remove	~
Image Name :		
Logging Level :	None	v

Force :

Field Label	Description	Example
Image Name	Docker Image Name (including tag)	myimage:latest
Force	Force the removal of a running container or image	
Logging Level	Controls messages issued from the Universal Task: None Info Debug Warning Critical 	None

Docker Function = Pull

Docker Function :	Pull	×
Image Name :		
Logging Level :	None	~

Field Label	Description	Example
Image Name	Docker Image Name (including tag)	stonebranch/universal-agent:latest
Logging Level	Controls messages issues from the Universal Task: None Info Debug Warning Critical 	None

Docker Function = Push

Docker Function : Push	~		
Image Name :		Repository Credential :	*
Logging Level : None	*		

Field Label	Description	Example
Image Name	Docker Image Name (including tag)	stonebranch/universal-agent:latest
Repository Credential	Docker Repository Credential	
Logging Level	Controls messages issues from the Universal Task: None Info Debug Warning Critical 	None

Docker Function = Tag

Docker Function :	Tag	×		
Image Name :			Target Image Tag :	
Logging Level :	None	*		
Runtime Directory :				

Field Label	Description	Example
Image Name	Docker Image Name (including tag)	universal-agent:6.8.0.0
Target Image Tag	Target Image that refers to source image	universal-agent:latest
Logging Level	Controls messages issues from the Universal Task: None Info Debug Warning Critical 	None

UAC - Docker Container

- Universal Task to Manage Docker Container; Run, Create, Start, Stop and Remove Functions
- Example Output
- Universal Task Details Fields
 - Docker Function = Run
 - Docker Function = Create
 - Docker Function = Start
 - Docker Function = Stop
 - Docker Function = Remove

Universal Task to Manage Docker Container; Run, Create, Start, Stop and Remove Functions

The Universal Task can automate the following Docker Container functions:

- Run
- Create
- Start
- Stop
- Remove

Example Output

Type :	STDERR	Attempt :	1	
	2020-08-17 11:58:19,301 - INFO - Run 2020-08-17 11:58:20,333 - INFO - <co< td=""><td>Docker Container ntainer: 819e3a3c</td><td>r test-ut-ua from cdf></td><td>image ccocksedge/ua:lat</td></co<>	Docker Container ntainer: 819e3a3c	r test-ut-ua from cdf>	image ccocksedge/ua:lat
Output :				
	٩			



Universal Task Details Fields

Docker Function = Run

Field Label	Description	Example
Image Name	Docker Image Name (including tag)	myimage:latest
Container Name	Docker Container Name	mycontainer
Hostname	Docker Container Hostname	myhost
Detach	Run Container in background and print Container ID	
Remove	Automatically remove the container	
Command	Command to Run in the Container	echo "Hello World"
Container Environment Variables	Set Container Environment Variable Values	
Container Port Mapping	Specify specific Container ports to map to specific Host ports	

Logging Level	Controls messages issues from the Universal Task:	None
	 None Info Debug Warning Critical 	

Docker Function = Create

Field Label	Description	Example
Image Name	Docker Image Name (including tag)	myimage:latest
Container Name	Docker Container Name	mycontainer
Hostname	Docker Container Hostname	myhost
Command	Command to Run in the Container	echo "Hello World"
Container Environment Variables	Set Container Environment Variable Values	
Container Port Mapping	Specify specific Container ports to map to specific Host ports	
Logging Level	Controls messages issues from the Universal Task: None Info Debug Warning Critical 	None

Docker Function = Start

Field Label	Description	Example
Container Name	Docker Container Name	mycontainer
Logging Level	Controls messages issues from the Universal Task: None Info Debug Warning Critical 	None

Docker Function = Stop

Field Label	Description	Example
Container Name	Docker Container Name	mycontainer
Logging Level	Controls messages issues from the Universal Task: None Info Debug Warning Critical 	None

Docker Function = Remove

Field Label	Description	Example
Container Name	Docker Container Name	mycontainer
Force	Force the removal of a running container (uses SIGKILL)	
Logging Level	Controls messages issues from the Universal Task: None Info Debug Warning Critical 	None

UAC - Docker Compose

- Universal Task for Docker Compose Functions; Build, Up, Down, Start, Stop Functions
- Example Output
- Universal Task Details Fields
 - Docker Function = Build
 - Docker Function = Up
 - Docker Function = Down
 - Docker Function = Start
 - Docker Function = Stop

Universal Task for Docker Compose Functions; Build, Up, Down, Start, Stop Functions

The Universal Task can automate the following Docker Compose functions:

- Build
- Up
- Down
- Start
- Stop

Example Output

Type :	STDERR	Attempt :	1
	2020-08-17 12:44:36,270 - INFO - DC 2020-08-17 12:44:47,688 - INFO - DC	cker Project uacdev Action cker Project uacdev Action	Stop stop
Output :			

STDOUT	Attempt : 1
Stopping dev-uac	A
Stopping dev-ua2	
Stopping dev-dbs	
Stopping dev-ual	
Stopping dev-oms	
Stopping dev-oms done	
Stopping dev-ual done	
Stopping dev-dbs done	
Stopping dev-ua2 done	
Stopping dev-uac done	
	Stopping dev-ua2 Stopping dev-dbs Stopping dev-ua1 Stopping dev-oms Stopping dev-oms done Stopping dev-ua1 done Stopping dev-dbs done Stopping dev-ua2 done

Universal Task Details Fields

Docker Function = Build

Docker Function :	Build	~		
Compose File :		Project	Name :	1
Service Name :				
Force :		Com	npress :	
Pull :		No C	Cache :	
				0 0
	Argument	161		
Build Arguments :	Argument	Val	ue	
Build Arguments :	Argument	vai No items to s		

Field Label	Description	Example
Compose File	Universal Controller Script (Type = Data) that contains the required compose file YAML statements	
Project Name	Docker Compose Project Name	myproject
Service Name	Optional Service Name as defined in the Compose File	myservice
Force	Always remove intermediate containers, even after unsuccessful builds	
Compress	Compress the build context using gzip	
Pull	Always attempt to pull a newer version of the base image	
No Cache	Do not use Cache when building the image	
Build Arguments	Specify any build arguments	
Logging Level	Controls messages issues from the Universal Task: None Info Debug Warning Critical	None
Runtime Directory	Will be used as the build context	/docker/builds/myimage

Docker Function = Up



Field Label	Description	Example
Compose File	Universal Controller Script (Type = Data) that contains the required compose file YAML statements	
Project Name	Docker Compose Project Name	myproject
Service Name	Optional Service Name as defined in the Compose File	myservice
Detach	Run Project / Service in background	

Logging Level	Controls messages issues from the Universal Task:	None
	 None Info Debug Warning Critical 	

Docker Function = Down

Docker Function : Down	*		
Compose File :	× 📰	Project Name :	
Timeout :			
Logging Level : None	~		

Field Label	Description	Example
Compose File	Universal Controller Script (Type = Data) that contains the required compose file YAML statements	
Project Name	Docker Compose Project Name	myproject
Timeout	Specify a shutdown timeout in seconds (default: 10)	25
Logging Level	Controls messages issues from the Universal Task: None Info Debug Warning Critical	None

Docker Function = Start

Docker Function :	Start	~	
Compose File :	~		Project Name :
Service Name :			
Logging Level :	None	~	

Field Label	Description	Example
Compose File	Universal Controller Script (Type = Data) that contains the required compose file YAML statements	
Project Name	Docker Compose Project Name	myproject
Service Name	Optional Service Name as defined in the Compose File	myservice
Logging Level	Controls messages issues from the Universal Task: None Info Debug Warning Critical	None

Docker Function = Stop

Docker Function : Stop	*		
Compose File :	× 15	Project Name :	
Service Name :		Timeout :	
Logging Level : None	~		

Field Label	Description	Example
Compose File	Universal Controller Script (Type = Data) that contains the required compose file YAML statements	
Project Name	Docker Compose Project Name	myproject
Service Name	Optional Service Name as defined in the Compose File	myservice
Timeout	Specify a shutdown timeout in seconds (default: 10)	25
Logging Level	Controls messages issues from the Universal Task: None Info Debug Warning Critical	None

UAC - Powershell

- Universal Task to Run Powershell Scripts
- Universal Task Details Fields
 - Powershell Script Location = UC Script Library
 - Powershell Script Location = Server Disk

Universal Task to Run Powershell Scripts

Universal Task Details Fields

Powershell Script Location = UC Script Library

This option executes a powershell script from the Universal Controller Script Library. Scripts to be executed from this task must be Script Type = Data and the Script Name must end in .ps1.

Field Label	Description	Example
Powershell Script	Select the required Powershell Script fro the Universal Controller Script Library.	
Powershell Script Options	Specify any required options and their values to be passed to the Powershell Script. Note: • Powershell Script options should be prefixed with a "-". • It may be required to quote any values that contain spaces or special charaters.	

Powershell Script Location = Server Disk

This option executes a Powershell Script from the Agent server's files system.

Field Label	Description	Example
Powershell Script	Specify the script on the Agent server's files system.	C:\scripts\myscript.ps1
	Note:	
	You can optionally use the Run Time Directory field to specify the script's location or use a fully qualified path/name in this field.	

Powershell Script Options	Specify any required options and their values to be passed to the Powershell Script.	
	Note:	
	 Powershell Script options should be prefixed with a "-". It may be required to quote any values that contain spaces or special charaters. 	

UAC - Kubernetes

- Universal Task to Run Kubernetes; List (Get), Create, Delete, and Replace Functions.
- Example Output
- Universal Task Details Fields
 - Function = List (Get)
 - Function = Create
 - Function = Delete
 - Function = Replace

Universal Task to Run Kubernetes; List (Get), Create, Delete, and Replace Functions.

The Universal Task can automate the following Kubernetes functions:

- List
- Create
- Delete
- Replace

Example Output

Type :	STDOUT	Attempt :	1	
Output :	<pre>{'api_version': 'v1', 'kind': 'Namespace', 'metadata': {'annotations': None,</pre>	nds': None, anch'},		nfo=tzutc()),

Universal Task Details Fields

Function = List (Get)



Kubernetes Object	Type of Kubernetes Object to perform the selected function against: Pod Deployment Namespace 	Pod
Logging Level	Controls messages issues from the Universal Task: None Info Debug Warning Critical 	None

Function = Create

Function :	Create	~		
Kubernetes Object :	Pod	*	Object Name :	
Namespace :	default			
YAML Definition :		v		
Logging Level :	None	~		

Field Label	Description	Example
Kubernetes Object	Type of Kubernetes Object to perform the selected function against: Pod Deployment Namespace 	Pod
Object Name	The Name of the Kubernetes Object (Pod, Deployment, Namespace) to be created	
Namespace	The Namespace of the Kubernetes Object to be created. NOT used if Kubernetes Object = Namespace in this case the Namespace name is specified as the Object Name	default
YAML Definition	UC Data Script containing the Kubernetes Object definition in yaml format	
Logging Level	Controls messages issues from the Universal Task Script: None Info Debug Warning Critical	None

Function = Delete

Function :	Delete	*		
Kubernetes Object :	Pod	*	Object Name :	
Namespace :	default			
Logging Level :	None	*		

Field Label	Description	Example
Kubernetes Object	Type of Kubernetes Object to perform the selected function against Pod Deployment Namespace 	Pod
Object Name	The Name of the Kubernetes Object (Pod, Deployment, Namespace) to be deleted	
Namespace	The Namespace of the Kubernetes Object to be deleted. NOT used if Kubernetes Object = Namespace in this case the Namespace name is specified as the Object Name	default
Logging Level	Controls messages issues from the Universal Task None Info Debug Warning Critical	None

Function = Replace

Function :	Replace	*		
Kubernetes Object :	Pod	*	Object Name :	
Namespace :	default			
YAML Definition :		×		
Logging Level :	None	*		

Field Label	Description	Example	l
Liola Easol	beenpien	Example	

Kubernetes Object		Pod
	 Pod Deployment 	
	Namespace	
Object Name	The Name of the Kubernetes Object (Pod, Deployment, Namespace) to be Replaced	
Namespace	The Namespace of the Kubernetes Object to be replaced.	default
	NOT used if Kubernetes Object = Namespace in this case the Namespace name is specified as the Object Name	
YAML Definition	UC Data Script containing the Kubernetes Object definition in yaml format	
Logging Level	Controls messages issues from the Universal Task:	None
	None	
	 Info Debug 	
	Warning	
	Critical	

UAC - UA Install

- Universal Task to Install Universal Agent via SSH Server; Download Universal Agent Install from Stonebranch Website
- Example Output
- Universal Task Details Fields
 - Function = Download To Runtime Directory
 - Function = Install From Runtime Directory

Universal Task to Install Universal Agent via SSH Server; Download Universal Agent Install from Stonebranch Website

Note

Requires an SSH Server running on the target Server where the Universal Agent is to be installed.

The Universal Task automates the following functions:

Download

This function downloads the Universal Agent installation package for the selected OS platform and version from the downloads.stonebranch.com site to the Runtime directory specified.

Install

This function performs the following:

- Uploads a previously downloaded Universal Agent installation package for the selected OS platform and version from the specified Runtime directory to the target installation server.
- Installs the Universal Agent.

Example Output

Type :	STDERR	Attempt : 1
Output :	2020-06-08 12:27:49,556 - INFO 2020-06-08 12:27:49,634 - INFO 2020-06-08 12:27:49,681 - INFO 2020-06-08 12:27:49,684 - INFO 2020-06-08 12:28:00,444 - INFO 2020-06-08 12:28:00,517 - INFO 2020-06-08 12:28:00,517 - INFO 2020-06-08 12:28:04,202 - INFO 2020-06-08 12:28:04,702 - INFO 2020-06-08 12:28:06,774 - INFO	<pre>- Connect to Host = sbus08 on Port = 7822 - Connected (version 2.0, client OpenSSH_7.6p1) - Authentication (password) successful! - Transfer File = sb-6.8.0.0-linux-3-x86_64-deb.tar.Z - [chan 0] Opened sftp connection (server version 3) - [chan 0] sftp session closed. - Installing from sb-6.8.0.0-linux-3-x86_64-deb.tar.Z with opt - Executing Command zcat sb-6.8.0.0-linux-3-x86_64-deb.tar.Z - RunCommand Exit status = 0 - Executing Command ./unvinstoms_servers 7878@10.0.75.1a - RunCommand Exit status = 0</pre>
	•	▶

Type :	STDOUT	Attempt :	1
	Output from Command : zcat sb-6.8.0.0- unv-6.8.0-0-linux-3-x86_64.deb Readme.unv unvinst upimerge.sh usrmode.inc unv-python3.7.tar unv-opscli-6.8.0-0-linux-3-x86_64.deb unvfiles.tar	linux-3-x86_64-de	eb.tar.Z tar xvf -
Output :	Output from Command : ./unvinstoms_ Group name 'ubroker' does not exist and wi Selecting previously unselected package un (Reading database 9948 files and dire Preparing to unpack unv-6.8.0-0-linux-3-x. Unpacking unv (6.8.0.0) Setting up unv (6.8.0.0) Running unv postinst Package installed correctly. Setting netname value to TestUAInstall Setting oms_servers value to 7878@10.0.7 Starting ubrokerd daemon.	ill be created. 11 be created. nv. ctories currently 86_64.deb	

Universal Task Details Fields

Function = Download - To Runtime Directory

	Download - To Runtime Directory	*		
UA Version :	latest		UA Platform : windows-x64	v
Loging Level :	None	~		
Runtime Directory :	1			

Field Label	Description	Example
UA Version	The Universal Agent version number to be downloaded. In the format v.r.m.m or latest.	6.8.0.0

UA Platform	Select the required Universal Agent OS platform from the list.	
Logging Level	Controls messages issues from the Universal Task: None Info Debug Warning Critical 	None
Runtime Directory	Specify where the Universal Agent installation package will be downloaded to.	C:\UA\InstallFiles

Function = Install - From Runtime Directory

Action :	Install - From Runtime Directory	*		
UA Version :	latest	UA Platform :	windows-x64	Y
Remote Server :		Remote Server Port :		
Remote Server Credential :		Credential Variable :		
				0 0
UA Installation	Option	Value		
Options :		No items to show.		
Loging Level :	None	×		
Runtime Directory :				

Field Label	Description	Example
UA Version	The Universal Agent version number to be uploaded and installed. In the format v.r.m.m or latest.	6.8.0.0
UA Platform	Select the required Universal Agent OS platform from the list. Note: This version of the UA Install task only supports the following Linux and Windows operating systems. • windows-x64 • windows-x64-um • linux-3.10-x86_64 • linux-3-x86_64-deb • linux-3.10-ppc64le	
Remote SSH Server	Specify the Hostname for the Remote SSH Server.	mysshserver
Remote SSH Port	Specify the SSH port for the Remote SSH Server.	22

Remote SSH Credential	Select the Credential Definition to access the Remote SSH Server. If the Credential specifies a Key Location, Public Key Authentication will be performed.	
Credential Variable	Check to specify a variable for the Remote SSH Credential .	
UA Installation Options	Specify any desired Installation Options to be passed to the install command. Note: • Options for Linux / Unix are prefixed with • Options for Windows are not prefixed • Options for Windows User mode are prefixed with - Refer to the documentation for the relevant installation package for more information:	
Logging Level	Controls messages issues from the Universal Task: None Info Debug Warning Critical	None

UAC - Remote Controller

- Run Task or Workflow on a Remote Universal Controller
- Universal Task Field Descriptions
- Command Line Script Parameters

Run Task or Workflow on a Remote Universal Controller

Universal Task to launch, monitor, and return results from a task defined in a remote Universal Controller.

For customers who would like to manage tasks in one Universal Controller from another Universal Controller. Simply supply the target Universal Controller URL, valid credentials, and the name of a task defined to the target Universal Controller. Using the web service API's, the Universal Task launches the requested task by name, captures the new instance sysid, and uses this to track the status of the task. After completion, the output is retrieved if the task type supports this, the Universal Task complete with the same exit code as the launched task.

- Requires Universal Controller version 6.5.0.0 (or higher) on the target Universal Controller, and UC 6.7.0.0 or Higher on the Source Universal Controller.
- Running remote Universal Controller workflows is partially supported with the following limitations:
 - Tasks within the workflow are not individually tracked.
 - No output is returned.
 - Workflow status is returned, however workflows do not set a return code so you will need to define the Universal Task's exit code processing to handle the status returned in the stderr appropriately.
- · Both stdout and stderr from the remote task are returned to the Universal Task's stdout. Stderr is used for messages from the Universal Task itself.
- Requires Python 3.6 or higher with the requests module installed. Tested with the Universal Agent bundled Python distribution.
- You can set different log-levels for the Universal task, providing you more or less information to suit your needs.
- We are also delivering a Python script for customers who would like to run Universal Controller tasks externally from a command line or other Job Scheduling tool.
 Example command line:

python run_universal_controller_task.py --controllerurl https://localhost:8080/opswise --username controlleruser --password controlleruserpassword --task "sleep 0" --loglevel info

- Example stderr messages:
- 2018-08-07 09:33:08,976 INFO Launching Task : Sleep 0
- 2018-08-07 09:33:09,049 INFO Task Instance Sysid : 1533578492639002557VEO7SQNCIHTCF
- 2018-08-07 09:33:09,049 INFO Monitoring Task : Sleep 0
- 2018-08-07 09:33:15,087 INFO Task Complete : Status = SUCCESS, Exit Code = 0
- 2018-08-07 09:33:40,530 INFO Retrieving Available Output : Sleep 0
- 2018-08-07 09:33:40,539 INFO Output Retrieval Not Valid for Task Type : Timer

Universal Task Field Descriptions

emote Controller D	etails -		
Agent :	×	Agent Cluster :	* 1
Agent Variable :		Agent Cluster Variable :	
Credentials :	× =	Cluster Broadcast :	× ×
Credentials Variable :		Cluster Broadcast Variable :	
Run with Highest Privileges :			
Target Controller URI :		Target Controller Credential :	* 5
Verify HTTPS :			
Target Controller Task Name :			
			0 0
Task Variables :	Variable Name	Variable Value	
		No items to show.	
			0 0
Task Virtual Resouces :	Resource Name	Resource Amount	
Resouces .		No items to show.	
Polling Interval :	5	Logging Level : Info	
Runtime Directory :			
Interact with Desktop :			
			0 0
Environment	Name	Value	
Variables :		No items to show.	
Exit Code Processing :	Success Exitcode Range		
Exit Codes :			
Automatic Output Retrieval :	Standard Output/Error		
Wait For Output :		Failure Only :	
Start Line :	1	Number of Lines : 100	
Scan Text :			

Field Label	Description	Example	Required
Target Controller URL	Specify the URL for the Target Universal Controller. This specifies where the Task will be Launched.	https://localhost:8080 /opswise	Y

Select the Credential Definition to access the Target Universal Controller		Y
For https connections, the Universal Task supports host validation with a certificate or CA certificate, check this option to provide the location of the certificate or CA certificate.		N
If unchecked no host certificate validation will be performed.		
 Select on of the following: Utility Agent Path : If the certificate or CA certificate is located on the Utility Agent File System. Script File : if the certificate or CA certificate is stored as a Script Data object on the Source Universal Controller 		Y (if Verify HTTPS is True)
Specify the location of the certificate or CA certificate on the Utility Agent file system.	/etc/certs/ca-cert.cer C:\security\certs\ca- cert.cer	Y (if Certificate File Location is Utility Agent Path)
Select the Script Data object that contains the certificate or CA certificate.		Y (if Certificate File Location is Scrip Data)
Specify the Task to Launch on the Target Universal Controller. The Task name specified must exist of the Target Universal Controller.	Sleep 0	Y
Specify any Variables to pass to the task.		Ν
Specify any Virtual Resources and the Amount that the Task will consume.		N
Provide the polling interval in seconds for checking the Task's status. Default is 5 seconds.		Υ
Select the level of messages returned from the script. Valid options are: None Info Debug Warning Error Critical		N
	For https connections, the Universal Task supports host validation with a certificate or CA certificate, check this option to provide the location of the certificate or CA certificate. If unchecked no host certificate validation will be performed. Select on of the following: • Utility Agent Path : If the certificate or CA certificate is located on the Utility Agent File System. • Script File : if the certificate or CA certificate is stored as a Script Data object on the Source Universal Controller Specify the location of the certificate or CA certificate on the Utility Agent file system. • Script Tata object that contains the certificate or CA certificate. Specify the location of the certificate or CA certificate or CA certificate. Specify the Task to Launch on the Target Universal Controller. The Task name specified must exist of the Target Universal Controller. Specify any Variables to pass to the task. Specify any Variables to pass to the task. Specify any Virtual Resources and the Amount that the Task will consume. Provide the polling interval in seconds for checking the Task's status. Default is 5 seconds. Select the level of messages returned from the script. Valid options are: None Info Debug Warning Error 	Image: Construction of the certificate or CA certificate. Image: Canadian of the certificate validation with a certificate or CA certificate, check this option to provide the certificate validation will be performed. Select on of the following: Image: Validation of the certificate or CA certificate is located on the Utility Agent File System. Select on of the following: Validation will be performed. Select on of the following: Validation will be performed. Select on of the certificate or CA certificate is stored as a Script Data object on the Source Universal Controller /etc/certs/ca-cert.cer Specify the location of the certificate or CA certificate or CA certificate. /etc/certs/ca-cert.cer Select the Script Data object that contains the certificate or CA certificate. Select the Script Data object that contains the certificate or CA certificate. Specify any Variables to pass to the task. Select the Target Universal Controller. The Task name specified must exist of the Target Universal Controller. Sleep 0 Specify any Variables to pass to the task. Select the polling interval in seconds for checking the Task's status. Default is 5 seconds. Image: Select the level of messages returned from the script. Valid options are: None Info None Info Image: Select the level of messages returned from the script. Valid options are: None Info Nore Info None Image: Selec

Command Line Script Parameters

Option	Description	Example	Requir ed
 controlleru rl	Specify the URL for the Target Universal Controller. This specifies where the Task will be Launched.	controllerurl https://localhost:8080 /opswise	Y
 username	Specify the user to access the Remote Universal Controller	username ops.admin	Y
password	Specify the password for the user specified viausername	password secret	Y

verfiy	For https connections, the Universal Task supports host validation with a certificate or CA certificate. To Bypass host validation specify False. If not specified host validation will be performed.	verify False	N
certfile	Specify the location of the certificate or CA certificate	certfile /etc/certs/uc-ca.cer	N
 taskname	Specify the Task to Launch on the Target Universal Controller. The Task name specified must exist of the Target Universal Controller.	taskname "Sleep 0"	Y
vararray		vararray '{"var1":"value1","var2":" value2"}'	N
resarray		resarray '{"Resource1":"1"," Resource2":"6"}'	N
interval	Provide the polling interval in seconds for checking the Task's status.	interval 30	Y
loglevel	Specify the level of messages returned from the script. Valid options are: None Info Debug Warning Error Critical	loglevel info	N

UAC - UC Report

- Run Universal Controller Report and Deliver Output to a Specified Server and File Location
- Universal Task Details Fields

Run Universal Controller Report and Deliver Output to a Specified Server and File Location

Universal Task to execute a Universal Controller report and write the output file to the specified location on Agent Server

Universal Task Details Fields

Report Name :		Report Type :	pdf	v
Report Output Location :				_
Controller URI :				
Report Credentials :	× =			

Field Label	Description	Example
Report Name	The Name of the Universal Controller Report to Run	UAC - Audit Failed Logins
Report Type	Type of the Report File that will be created: • pdf • png • csv • tab • xml	
Report Output Location	Fully qualified File Name where the report will be written	c:\temp\myreport.pdf
Controller URI	URL of the Universal Controller	https://localhost:8443/uc
Report Credentials	Credential that will run the report	

Downloadable Universal Templates

Available Downloadable Universal Templates

The following tabled identifies the Downloadable Universal Templates that are available for Universal Controller release 7.0.0.0.

The Name of each Universal Template is a link to a separate page containing detailed information about that template.

(For additional information about Universal Templates, see Universal Templates.)

Name	Description	Available from Release
Ansible Integration	Manage Ansible task execution through the Universal Controller user interface.	UC 6.8.0.0 and later
AWS Create EC2 Instance (with Universal Agent)	Create an EC2 instance with parameters, either in task form, or by simply creating an EC2 instance from the existing AWS launch template.	UC 6.8.0.0 and later
AWS EC2 - Start, Stop, Terminate, and Manage Universal Task Instances	Start, stop, terminate, and manage AWS EC2 instances on demand, simply by providing one or more instance IDs as input.	UC 6.8.0.0 and later
AWS S3	Securely transfers files from, to and between AWS S3 cloud storage buckets and folders.	UC 6.8.0.0 and later
AWS SQS	Create, send and monitor AWS SQS messages and automatically trigger a task in Universal Controller once a message has been received.	UC 6.8.0.0 and later
Azure Blob Storage	Securely transfers files from, to and between Azure Blob Storage container and folders.	UC 7.0.0.0 and later
Azure Data Factory Integration	Schedule, trigger, and monitor the Azure Data Factory pipeline process directly from Universal Controller.	UC 6.8.0.0 and later
Azure Logic Apps	Trigger and monitor the execution of Azure Logic workflows and retrieve the execution of Azure Logic workflow output.	UC 6.8.0.0 and later
Azure Virtual Machines Start-Stop- Terminate-Instance	Utilize Azure Virtual Machine (VM) name, resource group, subscription ID, and access token as inputs for the start, stop, terminate, list, and check status of Azure VMs.	UC 6.8.0.0 and later
Container File Monitoring	Dynamic File Monitoring and File Transfer solution for containerized applications running in any container management solution.	UC 7.0.0.0 and later
Databricks	Perform end-to-end Orchestration and Automation of Jobs & Clusters in Databricks environment, either in AWS or Azure.	UC 6.8.0.0 and later
GitHub	Perform server operations, such as importing/exporting Universal Automation Center objects and integrating with GitHub, as well as allowing the import/export of Universal Automation Center objects using the Universal Controller script library.	UC 6.8.0.0 and later
Google BigQuery	Schedule, trigger, monitor, and orchestrate the Google BigQuery process directly from Universal Controller.	UC 6.8.0.0 and later

Informatica Cloud	Schedule any Data Integration Task or Linear Taskflow in the Informatica Cloud.	UC 6.8.0.0 and later
Informatica PowerCenter	Schedule Informatica PowerCenter Workflows and Tasks, including retrieval of the workflow and session log.	UC 6.8.0.0 and later
Inter-Cloud Data Transfer	Transfer data to, from, and between any of the major private and public cloud providers like AWS, Google Cloud, and Microsoft Azure.	UC 7.0.0.0 and later
Jenkins Integration	Improves the functionality of Jenkins when orchestrated from Universal Controller.	UC 6.8.0.0 and later
ISCAPE MFT	Manage and integrate JSCAPE Managed File Transfer Server processes within UAC automation processes and workflows.	UC 7.0.0.0 and later
Vicrosoft Teams Integration	Send messages to an existing channel of Microsoft Teams, allowing you to integrate this solution in UAC to notify users for UAC result or send approval notifications on Microsoft teams.	UC 6.8.0.0 and later
PagerDuty	Notify PagerDuty (Incident management platform) in the event of job Failure or long run of a job or early finish of a job or any other event in Universal Controller.	UC 6.8.0.0 and later
Power BI	Perform end-to-end Orchestration and Automation of Jobs & Clusters in Databricks environment, either in AWS or Azure.	UC 7.0.0.0 and later
Salesforce	Create contact and lead objects in Salesforce, as well as execute Salesforce Object Query Language (SOQL) queries.	UC 6.8.0.0 and later
SAP Batch Input	Schedule and execute batch input sessions in SAP.	UC 6.0.0.0 and later
SAP Calendar Import	Import the SAP Factory Calendar and the related Holiday Calendar into the Universal Controller.	UC 6.8.0.0 and later
SAP Data Services	Execute an SAP Data Services "ETL" Job using the "AL_RWJobLauncher.exe".	UC 6.9.0.0 and later
SAP Event History Monitor	Queries the SAP Event history table for a selected SAP Event & Parameter. If the Event is found, it gets confirmed, so that it is not triggered again. Optionally, a task can be launched based on the occurrence of an Event & Parameter.	UC 7.0.0.0 and later
SAP Extract Job Definitions	Export SAP Job definitions from SAP into one flat file for each Job selected for extraction.	UC 6.8.0.0 and later
ServiceNow Integration	Create incident tickets, problem tickets, and change requests in ServiceNow straight from the Universal Controller.	UC 6.8.0.0 and later
Slack Notifications	Sends job status notifications to a Slack channel and enables users to send interactive messages in Slack for Universal Controller manual task approvals.	UC 6.8.0.0 and later
Snowflake	Orchestrate, schedule, trigger, and monitor the Snowflake load and unload process from different data sources (cloud storage or local VM's) directly from Universal Controller.	UC 6.8.0.0 and later
SQL	Execute SQL scripts and functions against a MySQL, PostgreSQL, Microsoft SQL Server, Oracle, and SAP HANA database.	UC 6.8.0.0 and later
JiPath for UAC Integration	Schedule, trigger, and monitor the UiPath (RPA) process directly from the Universal Controller.	UC 6.8.0.0 and later

Ansible Integration

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Disclaimer

This download is designed as a template to be adapted to your environment. In some cases, templates will need to be changed to work with your current Universal Automation Center (UAC) setup. This download is free to use. However, the download is not supported, and no warranty is provided by Stonebranch for this document and the related download. The use of this document and the related download is at your own risk. Before using this download in a production system, please perform testing.

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Introduction

Ansible is an opensource tool that is used primarily for:

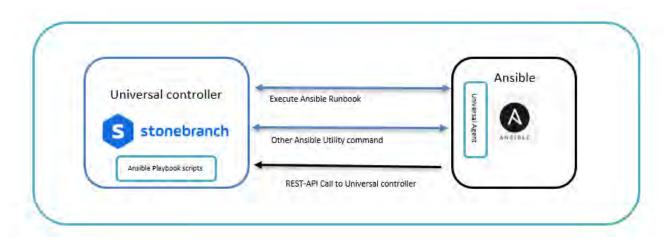
- Application deployment
- Updates on workstations and servers
- Cloud provisioning
- Configuration management
- Intra-service orchestration.

Ansible does not depend on agent software and has no additional security infrastructure.

Universal Controller can be integrated easily with Ansible through a Linux/Unix Universal Agent, as Ansible software can only be installed in Unix/Linux machines. So Universal Controller can manage all Ansible task execution through an intuitive user interface controlling Ansible playbook execution/host inventory details / other Ansible utility.

Overview

- Manage Ansible task execution through the intuitive Universal Controller user interface.
- Ansible playbooks can either be centrally stored and maintained in the Universal Controller script library, or Universal Controller can call the relevant playbook that is residing in Ansible host.
- This Universal Task also enables the execution of other Ansible commands.



Software Requirements

Linux Universal Agent installed in an Ansible host.

Software Requirements for Universal Template and Universal Task

This integration requires an Universal Agent installed in an Ansible server where there is access to use Ansible CLI.

Software Requirements for Universal Agent

• Universal Agent for Linux Version 6.5.0.0 and later.

Software Requirements for Universal Controller

• Universal Controller Version 6.5.0.0 and later.

Software Requirements for the Application to be Scheduled

This Universal Task can work with any of the Ansible Version (tested with 2.8.0).

Technical Considerations

- Accepts input parameters like Ansible utility, Ansible playbook path, Ansible host inventory, Script library (Yaml)
- Universal agent should be installed in the Ansible hosted machine and register to a Universal Controller.
- The Universal Task supports only Universal Agent for Linux.

Ansible Integration Key Features

Feature	Description
Ansible Playbook	This feature help to execute a Ansible playbook that resides in the remote ansible host.
Other Ansible Utility commands	This may be used other Ansible CLI commands.

Import Ansible Integration Built-In Universal Template

To use the built-in Universal Template, you first must perform the following steps:

- 1. This Universal Task requires the Resolvable Credentials feature. Check that the Resolvable Credentials Permitted system property has been set to true.
- 2. Copy or Transfer the Universal Template file to a directory that can be accessed by the Universal Controller Tomcat user.
- 3. In the Universal Controller UI, select Configuration > Universal Templates to display the current list of Universal Templates.
- 4. Right-click any column header on the list to display an Action menu.
- 5. Select Import from the menu, enter the directory containing the Universal Template file(s) that you want to import, and click OK.

When the files have been imported successfully, the Universal Template will appear on the list.

Configure Ansible Integration Universal Task

For this Universal Task type, create a new task and enter the task-specific details that were created in the Universal Template.

Field Descriptions for Ansible Integration Universal Task

Field	Description
Ansible utility	 Ansible-Playbook (select to execute Ansible playbook) Other-Ansible-Utility (Other Ansible commands)
Execution Choice	 Command: provide Ansible command that will be used to execute in Ansible machine where playbook and inventory is stored in Ansible host. Script: Select this option if you want to store the Ansible playbook in controller script library.
Ansible Inventory	Provide the Ansible Inventory source from the Ansible host.
Ansible Playbook Script	Provide a Uiversal Controller script name where you have the Ansible playbook (YAML).
Ansible command options	Any additional commands if needed in playbook execution.

Examples for Ansible Integration Universal Tasks

Invoke an Ansible Playbook that Resides in a Remote Ansible Server

Ansible Utility :	Ansible-Playbook	2	Execution choice :	command	*
Ansible Playbook :	uac_export_template.yml		Ansible Inventory :	/etc/ansible/hosts	
Ansible Command Options					
Runtime Directory					

Creating and Executing an Ansible Playbook from Controller

	ask Details: Ansible-				P FRI LEAST	The second second	-
		Script Details: scr Ansible runbo	PA.M.	pdate 🔄 Launch Tas	sk 👔 View Pa	rents 📴 Copy 🚮 Delete	🕸 Refresh 🐹 C
nsible-Exec-Playbook 1	Task Variables	Script Details: Scr_Ansible_runbo	DOK_test				
General					Up	date 🛛 🖉 Upload Script 🖺 C	opy 🔐 Delete
Task Name :	Ansible-Check-ser	Script Casks	Notes	Versions			
	Ansible task for De					No. 202	
Member of Business Services :	RKM		Name : scr_	_Ansible_runbook_test		Version :	2
Resolve Name Immediately :		22	ot Type : Dat	a		Resolve UAC Variables :	V
Hold on Start :							
Virtual Resource Priority :	10		-	 name: Playbook hosts: liverpool become: yes 			
rerun request :	/etc/ansible/hosts			become_user: roo tasks:	ot		
docu link :	demo_playbook.yn			 name: ensure service: 		running	
Agent Details			Content :	name: chro state: sta	urted		
Cluster :							
Agent :	Ansible						
Credentials :	Ansible-Host	🔚 Update 🛃 Uploa	ad Script	📳 Сору 🚮	Delete	🕸 Refresh 🛛 🐹 Close	
Ansible-Exec-Playbo	ook Details						
Ansible Utility :	Ansible-Playbook		,	Execution choice :	script		*
Ansible Inventory :							
Ansible Playbook Script :	scr_Ansible_runbo	ok_test					¥ 📰
Ansible Command Options :							
Runtime Directory :							
							0 0
Environment	Name			Value			
Variables :				No items to show.			

Document References

This document references the following documents:

Name	Location	Description

Universal Templates	https://docs.stonebranch.com/confluence/display/UC70/Universal+Templates	User documentation for creating Universal Templates in the Universal Controller user interface.
Universal Tasks	https://docs.stonebranch.com/confluence/display/UC70/Universal+Tasks	User documentation for creating Universal Tasks in the Universal Controller user interface.

AWS Create EC2 Instance (with Universal Agent)

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- Technical Considerations
- AWS Create EC2 Instance (with Universal Agent) Key Features
- Import AWS Create EC2 Instance (with Universal Agent) Built-In Universal Template
- Configure AWS Create EC2 Instance (with Universal Agent) Universal Task
- Field Descriptions for AWS Create EC2 Instance (with Universal Agent) Universal Task
- Examples for AWS Create EC2 Instance (with Universal Agent) Universal Tasks
 New EC2 Instance Creation
 - Launch Instance with Launch Template
- Document References

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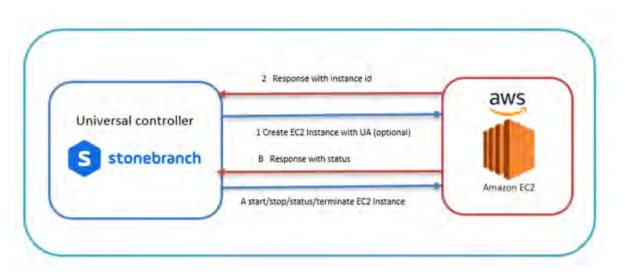
Introduction

This Universal Task allows customers to create an EC2 instance with parameters, either in task form, or by simply creating an EC2 instance from the existing AWS launch template. This task also offers the option to additionally install a Linux/UNIX Universal Agent in the newly provisioned EC2 Instance.

Overview

- The task interacts with the AWS platform via a Python boto3 module.
- All AWS credentials remain encrypted.
- Customers can also install/configure a Linux Universal Agent for each EC2 instance, enabling the Universal Controller to instantly communicate with the newly created instance. (NOTE: only Linux Universal Agent is supported at the moment.)
- This task also lets customers create multiple EC2 instances with the same configuration. New instances can also be tagged.
- It allows customers to create a new keypair or use an existing one for the new EC2 instance.
- This task also enables options for additional EBS volume and encryption, as well as detailed monitoring.

AWS EC2 Task High-Level Overview



Software Requirements

This integration requires an Universal Agent and a Python runtime to execute the Universal Task against AWS EC2 Instance.

Software Requirements for Universal Template and Universal Task

- Requires Python 2.7 or Python 3.6 or higher. Tested with the Universal Agent bundled Python distribution.
- Python modules required:
 - requests
 - Boto3

Software Requirements for Universal Agent

- Universal Agent for Windows x64 Version 6.6.0.0 and later with python options installed
- Universal Agent for Linux Version 6.6.0.0 and later with python options installed

Software Requirements for Universal Controller

Universal Controller Version 6.7.0.0 and later

Software Requirements for the Application to be Scheduled

- The Server Running the Universal Agent needs to have Python 2.7.x or 3.6.x installed
- AWS IAM Credentials -Access Key, Secret Access key and Region with EC2 set of permissions

• This universal task for the AWS EC2-start-stop-terminate has been tested with the agent bundled with python 3.6 and boto3 module

Technical Considerations

- Consider using this universal task either with universal agent bundled with python(uapy) and also having boto3 module within this environment or a python environment (py) in a host where universal agent is installed with boto3 module in it.
- AWS IAM credentials (Access Key, Secret Access key and Region) should be with the Appropriate access for handling AWS EC2 instances.
- With the current version of this Universal Task, Universal Agent can be installed only in Linux EC2 Instance.

AWS Create EC2 Instance (with Universal Agent) Key Features

Feature	Description
Create New EC2 Instance	Creates a EC2 Instance based on the parameters that are provided in the form
Launch EC2 from template	Create a EC2 Instance based on a template in AWS

Import AWS Create EC2 Instance (with Universal Agent) Built-In Universal Template

To use the built-in Universal Template, you first must perform the following steps:

- 1. This Universal Task requires the Resolvable Credentials feature. Check that the Resolvable Credentials Permitted system property has been set to true.
- 2. Copy or Transfer the Universal Template file to a directory that can be accessed by the Universal Controller Tomcat user.
- 3. In the Universal Controller UI, select Configuration > Universal Templates to display the current list of Universal Templates.
- 4. Right-click any column header on the list to display an Action menu.
- 5. Select Import from the menu, enter the directory containing the Universal Template file(s) that you want to import, and click OK.

When the files have been imported successfully, the Universal Template will appear on the list.

Configure AWS Create EC2 Instance (with Universal Agent) Universal Task

For the new Universal Task type, create a new task, and enter the task-specific details that were created in the Universal Template.

Field Descriptions for AWS Create EC2 Instance (with Universal Agent) Universal Task

Field	Description	
AWS-DEFAULT-REGION	AWS Region kept as credential	
AWS-SECRET-ACCESS-KEY	AWS Secret Key	
AWS-ACCESS-KEY-ID	AWS Access Key	
Launch Instance Option	Select either launch from template or create a brand new ec2 instance with the parameter supplied in the form	
LaunchTemplateName	Mandatory if launch_instance_option=" Launch from template"	
AWS_IMAGE_ID	Provide the AWS machine ID ,Mandatory if launch_instance_option=" new_instance"	

Keypair option	PEM file creation choice , Select either existing Key pair or New Key pair
EC2-KEYPAIR-Path & Name	Provide Keypair file name and the path (Do not give the extension) for new and for existing keypair just the name
EC2 Instance Type	provide ec2-instance type like t2. Micro , if Launch from template = "Create New Instance"
Minimum Count	Minimum Count of instance that need to be created, if Launch from template = "Create New Instance"
Max Count	Max count of instance that needs to be created, if Launch from template = "Create New Instance"
associate_public_ip	If a public IP needs to be created when a instance is created
SubnetId	Provide subnetID where the instance to be associated within AWS
Availability Zone	Provide Availability Zone where the instance to be associated within AWS
Security Group ID	provide security group ids, if multiple ID's then separate by comma
Instance Tag name	EC2 Instance Tag Name
iam_instance_profile_name	If applicable provide the IAM Instance Profile Name
device_name	Provide the device name; for example, /dev/sda1
ebs_volume_size	Provide EBS Volume size
EBS Vol. Type	Select either standard or io1 or gp2 or sc1 or st1
EBS Vol. Encyption	Check if encryption needs needed
EC2 Monitoring	Check this box if detailed monitoring required
Install Universal Agent	Check this box if you would need to install universal agent with this new EC2 instance created
Agent Download URL	Provide the path to download the agent URL, if install universal agent option is selected
Universal Agent Install OS	select the OS where universal agent needs to be installed
Agent OMS IP	Provide the OMS server IP for the universal agent to be connected after installation , if install universal agent option is selected
Use Public IP for SSH	Select if you would need to use the public or provide IP for SSH
os_user_id	Provide the OS user ID that will be used to make SSH connection

Examples for AWS Create EC2 Instance (with Universal Agent) Universal Tasks

New EC2 Instance Creation

 AWS-EC2-Create-Instance Detail 	\$				
AWS_DEFAULT_REGION :	AWS_REGION_us-east-2	* 2	AWS_ACCESS_KEY_ID	AWS_KEY_ID_D050320	* 5
AWS_SECRET_ACCESS_KEY :	AWS_SECRET_ACCESS_KEY_D050320		logtevel	info	-0
Launch Instance Option :	Create New Instance		AWS_IMAGE_ID	ami-083ebc5a49573896a	
Keypair option :	Existing keypair	6	EC2-KEYPAIR-Path & Name :	/home/centos/autocreate	
EC2 Instance Type :	t2 micro		Minimum Count :	1	
Max Count :	1		Associate Public IP	×	
SubnetId :			Availability Zone		
Security Group ID	sg-039d00c099c667a34		Instance Tag name	Auto-Create	
IAM Profile Name			Device Name		
EBS Voume Size			EBS Vol. Type		~
EBS Vol. Encyption :	£		EC2 Monitoring		
Install Universal Agent :	2		Agent Download URL :	https://downloads.stonebranch.com/6.8 x/sb-6.8.0.0-linux-3.10-x86_64.tar.Z	
Universal Agent Install OS :	Linux kernel 3 x64 (Debian) [6.8.0.0]	i.	Agent OMS IP :	172.31.37.159	
Use Public IP for SSH :	E		SSH User ID :	ec2-user	
Runtime Directory :					
					0 0
1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	Name		Value		
Environment Vanables :			No items to show		

Launch Instance with Launch Template

AWS_EC2-Create-Instance Detail AWS_DEFAULT_REGION :		× 📼	AWS_ACCESS_KEY_ID	AWS-RAVI-ACCESS-KEY	x 📼
AWS_SECRET_ACCESS_KEY :	AWS-RAVI-SECRET-ACCESS	A 25	loglevel	info	
Launch Instance Option :	Launch from template	*	Launch TemplateName :	Demo-Template	
AWS_IMAGE_ID :			Keypair option	Existing keypair	×
EC2-KEYPAIR-Path & Name :	/home/centos/universalagent		EC2 Instance Type	t2.micro	
Minimum Count :	1		Max Count :	1	
Associate Public IP :	X		Subnetid		
Availability Zone :			Security Group ID		
Instance Tag name :	demo-instance				
Runtime Directory :					0 0
	Name		Value		
Environment Variables			No items to show:		

Document References

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Name	Location	Description
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Universal Controller 7.0.x Available Integrations

AWS EC2 - Start, Stop, Terminate, and Manage Universal Task Instances

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 - Software Requirements for Universal Agent
 - Software Requirements for Universal Controller
 - Software Requirements for the Application to be Scheduled
- Technical Considerations
- Start, Stop, Terminate, and Manage AWS EC2 Instance Key Features
- Import Start, Stop, Terminate, and Manage AWS EC2 Built-In Universal Template
- Configure Start, Stop, Terminate, and Manage AWS EC2 Instance Universal Task
- Field Descriptions for Start, Stop, Terminate, and Manage AWS EC2 Instance Universal Task
- Examples for Start, Stop, Terminate, and Manage AWS EC2 Instance Universal Tasks
- Start EC2 Instances
- Document References

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Introduction

This Universal Task allows users to start, stop, terminate, and manage AWS EC2 instances on demand, simply by providing one or more instance IDs as input.

Overview

- This task uses python boto3 to interact with the AWS platform using the credentials supplied within the task.
- It supports multiple EC2 instances at once.
- In Universal Controller this task goes to the success state until the EC2 instance is completely spun up or terminated.
- Scheduling this task using Universal Controller workflow spins up and tears down EC2 instances based on the business needs, complete with correct set up and dependencies.
- It dynamically manages EC2 operations, offering the potential to reduce EC2 operations costs in the cloud.

	2 Response with Instance id	aws
Universal controller	1 Create EC2 Instance with UA (optional) B Response with status	
	A start/stop/status/terminate EC2 Instance	Amazon EC2

Software Requirements

This integration requires an Universal Agent and a Python runtime to execute the Universal Task against AWS EC2 Instance.

Software Requirements for Universal Template and Universal Task

- Requires Python 2.7 or Python 3.6 or higher. Tested with the Universal Agent bundled Python distribution.
- Python modules required:
 - requests
 - Boto3

Software Requirements for Universal Agent

- Universal Agent for Windows x64 Version 6.6.0.0 and later with python options installed
- Universal Agent for Linux Version 6.6.0.0 and later with python options installed

Software Requirements for Universal Controller

Universal Controller Version 6.7.0.0 and later

Software Requirements for the Application to be Scheduled

- The Server Running the Universal Agent needs to have Python 2.7.x or 3.6.x installed
- AWS programmatic Credentials -Access Key, Secret Access key and Region
- This Universal Task for the AWS EC2-start-stop-terminate has been tested with the agent bundled with python 3.6 and boto3 module

Technical Considerations

- Consider using this Universal Task either with universal agent bundled with python(uapy) and also having boto3 module within this environment or a python environment (py) in a host where Universal Agent is installed with boto3 module in it.
- AWS IAM credentials (Access Key, Secret Access key and Region) should be with the appropriate access for handling AWS EC2 instances

Start, Stop, Terminate, and Manage AWS EC2 Instance Key Features

Feature	Description
Start EC2 Instance	Start one or Multiple EC2 instance
Stop EC2 Instance	Stops one or Multiple EC2 instance
Terminate EC2 Instance	Terminate one or Multiple EC2 instance
EC2 status	Provides one or Multiple EC2 instance status

Import Start, Stop, Terminate, and Manage AWS EC2 Built-In Universal Template

To use the built-in Universal Template, you first must perform the following steps:

- 1. This Universal Task requires the Resolvable Credentials feature. Check that the Resolvable Credentials Permitted system property has been set to true.
- 2. Copy or Transfer the Universal Template file to a directory that can be accessed by the Universal Controller Tomcat user.
- 3. In the Universal Controller UI, select Configuration > Universal Templates to display the current list of Universal Templates.
- 4. Right-click any column header on the list to display an Action menu.
- 5. Select Import from the menu, enter the directory containing the Universal Template file(s) that you want to import, and click OK.

When the files have been imported successfully, the Universal Template will appear on the list.

Configure Start, Stop, Terminate, and Manage AWS EC2 Instance Universal Task

For the new Universal Task type, create a new task, and enter the task-specific details that were created in the Universal Template.

Field Descriptions for Start, Stop, Terminate, and Manage AWS EC2 Instance Universal Task

Field	Description
AWS-DEFAULT-REGION	AWS Region kept as credential
AWS-SECRET-ACCESS-KEY	AWS Secret Key
AWS-ACCESS-KEY-ID	AWS Access Key
EC2 Instance Function	Select either start or stop or terminate or check ec2 instance
Instance ID's	Provide the Instance ID which you would need to start or stop or term

Examples for Start, Stop, Terminate, and Manage AWS EC2 Instance Universal Tasks

Start EC2 Instances

VS-BC2-Start-Stop-Terr	inste-Instance Tar	ik Details: ec2-start-instance					6
			Deda	ite 🥃 Launch Tas	k 🔿 View Parents 📮	Copy a Deine ()	Refresh 💥 D
AVVS-EC2-Start-Stop-Ter	menane-instance Ta	sk Variables Actions	 Vytual Reso 	wroes Mutually	Exclusive Instances	Topgers Not	tes 🖝 Vers
- General							
Task Name :	ec2-start-instance			Version .	3		
Task Description							
Member of Business Services							19
Resolve Name Immediately	11			Time Zone Preference	- System Default	1	m.
trioks on Beart							
Virtual Resource Priority	10		100	Hold Resources on Failure	23.		
rérun /équési							
-docu link							
Agent Details	_						
Cluster	12						
Agent	Ansible		(a) (C)	Agent Vahibler			
	Ansible-Host			CredorGals Valuable	10		
Run with Highest Provileges	12						
Witeract with Desktop							
AWS-EC2-Stat-Sto	p-Terminate-Instan	ce Details					
AWS_DEFAUL	T_REGION AW	S_RECION_Us-east-2		H AWS_A	CCESS_KEY_ID AWS-	RAVI-ACCESS-KEY	
AWS_SECRET_AC	CESS_KEY AW	S-RAVI-SECRET-ACCESS		- E3	logievel milo		
EC2 Instan	ce Function Sta	t EC2 Instance		1			
	nstancelds : 1-00	68834fce8dt5a9c,i-0abe10d946d	223c97				
Runte	ne Directory						

Document References

This document references the following documents:

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Universal Templates	https://docs.stonebranch.com/confluence/display/UC70/Universal+Templates	User documentation for creating Universal Templates in the Universal Controller user interface.
Universal Tasks	https://docs.stonebranch.com/confluence/display/UC70/Universal+Tasks	User documentation for creating Universal Tasks in the Universal Controller user interface.

AWS S3

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 - Software Requirements Universal Agents and Universal Controller
 - Software Requirements Universal Controller
 - Software Requirements for the Application to be scheduled
- Universal Task for AWS S3 Key Features
- Import AWS S3 Built-In Universal Template
- Configure AWS S3 Universal Tasks
- Field Descriptions for AWS S3 Universal Task Action
 - Create Bucket Action
 - Example for AWS S3 Universal Tasks Create Bucket
 - List Buckets Action
 - Example for AWS S3 Universal Tasks List Buckets
 - Upload File Action
 - Example for AWS S3 Universal Tasks Upload File
 - List Objects Action
 - Example for AWS S3 Universal Tasks List Objects
 - Download File Action
 - Example for AWS S3 Universal Tasks Download File
 - Delete Objects Action
 - Example for AWS S3 Universal Tasks Delete Objects
 - Copy Object to Bucket Action
 - Example for AWS S3 Universal Tasks Copy Object to Bucket
 - Delete Bucket Action
 - Example for AWS S3 Universal Tasks Delete Bucket
 - Monitor Key Action
 - Example for AWS S3 Universal Tasks Monitor Key

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Introduction

Storing data in the cloud becomes an integral part of most modern IT landscapes. With Universal Automation Center you can securely automate your AWS, Azure, Google and MinIO File Transfers and integrate them into your existing scheduling flows.

As security is one of the key concerns when moving to the cloud, the provided solution supports multi-level of security:

- · Credentials for AWS S3 (Access Key, Secret Access key and Region) are stored in an encrypted form in the database
- IAM Role-Based Access Control (RBAC) is supported
- · Communication to AWS is done via the HTTPS protocol
- A Proxy Server connection to AWS with basic authentication is supported
- Secure access to AWS S3 buckets using AWS bucket policies can be configured in the AWS console
- Restrict sending files only to specific buckets using AWS End Points can be configured in the AWS console

This Universal Task focuses on the AMAZON AWS S3 file transfer, including support for MinIO. MinIO is an Open Source object storage server for private cloud environments based on Amazon's S3 API. All file transfer scenarios supported for AMAZON AWS S3 are also support for MinIO. The scenarios described in this documentation are also valid for MinIO.

A similar solution as for AWS S3 is also available for Microsoft Azure Blob Storage and Google Cloud Storage.

Overview

The Universal Task for AWS S3 allows to securely transfers files from, to and between AWS S3 cloud storage buckets and folders.

The Universal Task for AWS S3 support the following main features:

- The following file transfer commands are supported:
 - Upload a file(s) to an S3 bucket
 - Download of file(s) from an S3 bucket
 - Transfer files between S3 buckets
 - List objects in an S3 bucket
 - Delete object(s) in an S3 bucket
 - List S3 bucket names
 - · Create an S3 bucket
- Monitor for a key(s) in a bucket.
- File Transfer can be trigger by a third-party application using the Universal Automation Center RESTfull Webservice API: REST API.
- Universal Task for AWS S3 can be integrated into any existing scheduling workflow in the same way as any standard Linux or Windows Task type.
- Security is ensured by using the HTTPS protocol with support for an optional Proxy Server.
- AWS IAM Role Based Access (RBCA) is supported.
- No Universal Agent needs to be installed on the AWS Cloud the communication goes via HTTPS.

Software Requirements

Software Requirements Universal Agents and Universal Controller

- Universal Agent for Linux or Windows Version 6.9.0.0 or later are required
- The Universal Agent needs to be installed with python option (--python yes)

Software Requirements Universal Controller

• Universal Controller 6.9.0.0. or later is required

Software Requirements for the Application to be scheduled

The Universal Task has been tested for the AWS S3 SDK for python (boto3) V1.15.6

Universal Task for AWS S3 Key Features

The solution supports the following file transfer scenarios:

Name	Description
Upload a file(s) to a bucket (Copy or Move)	 A single or multiple files can be uploaded to a bucket. Move or copy are supported for the upload Unix filename pattern matching support e.g. wild card support "*" to upload multiple files A single or multiple files can be Uploaded to a folder using a prefix It can be decided via an the Upload Write Options: to overwrite an existing object (<i>Replace existing Object</i>) to cancel the operations in case an object with a similar name exists (<i>Do not overwrite existing Object</i>) to add a timestamp to the uploaded Object (<i>Timestamp</i>)
Download of file(s) from a bucket (Copy or Move)	 A single or multiple files should be downloaded from a bucket. Move or copy must be supported for the download Unix filename pattern matching support e.g. wild card support "*" to download multiple files Download to a specific folder is supported It can be decided via an the <i>Download Write Options</i>: to overwrite an existing file (<i>Replace existing File</i>) to cancel the operations in case a File with a similar name exists (<i>Do not overwrite existing File</i>) to add a timestamp to the uploaded file (<i>Timestamp</i>) to perform the default Windows behaviour for copying files (<i>Default Windows behaviour</i>) If a file with a similar name exists, the file names that are similar will be edited so that the files you copied have a number appended at the end of them. For example, if you're copying a file named image.png to a folder that already has a file named image.png in it, the copied file will be named image (1).png.
Copy object to a bucket	 An object can be copied from one AWS S3 bucket to another. Folders are support
List objects in a bucket	 Show all Objects in a bucket Show all Objects in a folder Unix filename pattern matching support e.g. wild card support "*" to narrow down the objects to display
Delete object(s) in a bucket	 Delete one or multiple objects in a bucket Delete one or multiple objects in folder in a bucket Unix filename pattern matching support e.g. wild card support "*" to narrow down the objects to be deleted
List buckets	List all bucket in an AWS S3 account

Create an S3 bucket	Create a new S3 bucket
Delete an S3 bucket	Delete an S3 bucket
Monitor Key	Monitor if a certain key(s) exists in an S3 bucket.
	Unix filename pattern matching support; for example, wild card support "*" to narrow down the keys to be monitored.
Proxy Server Connection	A proxy server connection with or without basic authentication can be configured
Integration into 3 rd Party Applications	An AWS S3 file transfer can be triggered via the Universal Automation Center RESTfull Webservice API within an application.
Self-Service through Web-Client	The S3 Task can be fully configured, monitored and updated via the Universal Controller Web-GUI

Import AWS S3 Built-In Universal Template

To use the built-in Universal Template, you first must perform the following steps:

- 1. This Universal Task requires the Resolvable Credentials feature. Check that the Resolvable Credentials Permitted system property has been set to true.
- 2. Copy or Transfer the Universal Template file to a directory that can be accessed by the Universal Controller Tomcat user.
- 3. In the Universal Controller UI, select Configuration > Universal Templates to display the current list of Universal Templates.
- 4. Right-click any column header on the list to display an Action menu.
- 5. Select Import from the menu, enter the directory containing the Universal Template file(s) that you want to import, and click OK.

When the files have been imported successfully, the Universal Template will appear on the list.

Configure AWS S3 Universal Tasks

For the new Universal Task type, create a new task and enter the task-specific Details that were created in the Universal Template.

Field Descriptions for AWS S3 Universal Task - Action

The AWS S3 Task provides multiple different file transfer actions. For each action the specific fields are described.

Create Bucket - Action

The Action Creates a new S3 bucket.

Field	Description
Action	create-bucket action
AWS_ACCESS_KEY_ID	AWS Account credentials Access Key
AWS_DEFAULT_REGION	AWS Account credentials Region
AWS_SECRET_ACCESS_KEY	AWS Account credentials Secret Access Key
Useproxy (default is NO)	[NO YES]

	If set to YES, the fields to set-up the proxy server connections are displayed: Proxy Server IP or hostname Proxy Server Port Proxy Server Credentials (optional)
Loglevel (default is INFO)	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]
Role Based Access	[NO YES]
	If set to YES, the fields to set-up the IAM Role Based Access Connection are displayed:
	 Role Arn: Amazon Role, which is applied for the connection; for example, rn:aws:iam::111222333444:role/SB-AWSS3 Service Name [STS S3], default is STS
	STS: AWS Security Token Service is used to create and provide trusted users with temporary security credentials that can control access to your AWS resources.
Endpoint URL	Only used in case of a MinIO server; connection Endpoint URL for the MinIO storage system
Bucket	Name of the AWS Bucket to create

Example for AWS S3 Universal Tasks - Create Bucket

General							
Task Name :	AWS-S3-Cre	eate Bucket		Version	1		
Task Description :							
Member of Business Services :	AWS-S3-TE	ST					*
Resolve Name Immediately :				Time Zone Preference	- System Default		~
Hold on Start :							
Virtual Resource Priority :	10	×		Hold Resources or Failure			
Agent Details							
Cluster :							
Agent :	\${AGT_LINU	JX_LOCAL}		Agent Variable	: 🔽		
Credentials :			-	Credentials Variable	s 🔲		
Run with Highest Privileges :				vanable			
Interact with Desktop :							
AWS-S3 Details							
	Action :	create-bucket		~	Bucket :	stonebranchpmtest	
AWS_SECRET_ACC	ESS_KEY :	AWS_SECRET_ACCESS_KEY_D050320		* E AWS_	ACCESS_KEY_ID :	AWS_KEY_ID_D050320	
AWS_DEFAULT	T_REGION :	AWS_REGION_us-east-2		*			
	Useproxy :	No		*			
Role Bas	sed Access :	No		*			
En	dpoint URL :						
	Loglevel :	INFO		~			

List Buckets - Action

The Action list all buckets of an AWS Account.

Field	Description
Action	list-buckets action
AWS_ACCESS_KEY_ID	AWS Account credentials Access Key
AWS_DEFAULT_REGION	AWS Account credentials Region
AWS_SECRET_ACCESS_KEY	AWS Account credentials Secret Access Key
Useproxy (default is NO)	[NO YES]
	If set to YES, the fields to set-up the proxy server connections are displayed: Proxy Server IP or hostname
	 Proxy Server Port Proxy Server Credentials (optional)

Loglevel (default is INFO)	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]
Role Based Access	[NO YES]
	If set to YES, the fields to set-up the IAM Role Based Access Connection are displayed:
	 Role Arn: Amazon Role, which is applied for the connection e.g. rn:aws:iam::111222333444:role/SB-AWSS3 Service Name [STS S3], default is STS
	STS: AWS Security Token Service is used to create and provide trusted users with temporary security credentials that can control access to your AWS resources.
Endpoint URL	Only used in case of a MinIO server; connection Endpoint URL for the MinIO storage system

Example for AWS S3 Universal Tasks - List Buckets

General					
Task Name :	AWS-S3-Lis	t Buckets	Version :	3	
Task Description :					
Member of Business Services :	AWS-S3-TE	ST			*
Resolve Name Immediately :			Time Zone Preference :	System Default	
Hold on Start :					
Virtual Resource Priority :	10	*	Hold Resources on Failure :		
Agent Details					
Cluster :					
Agent :	\${AGT_LIN	JX_LOCAL}	Agent Variable :		
Credentials :		* ==	Credentials		
Run with Highest Privileges :			Variable :	-	
Interact with Desktop :	100				
AWS-S3 Details					
	Action :	list-buckets	*		
AWS_SECRET_ACC	CESS_KEY :	AWS_SECRET_ACCESS_KEY_D050320	V AWS_A	CCESS_KEY_ID : AWS_KEY_ID_D050320	
AWS_DEFAUL	T_REGION :	AWS_REGION_us-east-2	× =		
	Useproxy :	No	*		
Role Ba	sed Access :	No	×		
En	idpoint URL :				
	Loglevel :	INFO	*		

Upload File - Action

The Action is used to upload a single or multiple files from a Windows or Linux server to an AWS bucket or a folder in an AWS bucket.

Field	Description			
Action	Upload-file action			
AWS_ACCESS_KEY_ID	AWS Account credentials Access Key			
AWS_DEFAULT_REGION	AWS Account credentials Region			
AWS_SECRET_ACCESS_KEY	AWS Account credentials Secret Access Key			
Useproxy (default is NO)	[NO YES] If set to YES, the fields to set-up the proxy server connections are displayed: • Proxy Server IP or hostname • Proxy Server Port • Proxy Server Credentials (optional)			
Loglevel (default is INFO)	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]			
Role Based Access	 [NO YES] If set to YES, the fields to set-up the IAM Role Based Access Connection are displayed: Role Arn: Amazon Role, which is applied for the connection e.g. rn:aws:iam::111222333444:role/SB-AWSS3 Service Name [STS S3], default is STS STS: AWS Security Token Service is used to create and provide trusted users with temporary security credentials that can control access to your AWS resources. 			
Endpoint URL	Only used in case of a MinIO server; connection Endpoint URL for the MinIO storage			
Sourcefile	Source file(s) to be uploaded to a bucket or specific folder in a bucket. Unix filename pattern are supported to upload a selection of files. Supported wildcards are: • ? matches any single character • [seq] matches any character in seq • [!seq] matches any character not in seq • "*" matches everything			
Operation	[copy move] In case of a "move" the source file(s) is/are deleted after the upload to the bucket.			
Prefix	A folder in a bucket is called prefix in AWS. In the field Prefix only the name of the folder needs to be provided no "/" after the folder name.			
Upload Write Options	Upload Write Options [Replace existing Object Do not overwrite existing Object Timestamp] • Replace existing Object: Overwrite an existing object • Do not overwrite existing Object: Cancel the operations in case an object with a similar name exists • Timestamp: Add a timestamp to the uploaded Object			

Example for AWS S3 Universal Tasks - Upload File

General						1		
Task Name :	AWS-S3-Up	load File		Versio	n :	1		
Task Description :								
Member of Business Services :	AWS-S3-TE	ST						*
Resolve Name Immediately :				Time Zo Preference	ne e : System D	efault	*	
Hold on Start :	Landa de la constante de la co							
Virtual Resource Priority :	10		*	Hold Resources Failur	e :			
Agent Details								
Cluster :								
Agent :	\${AGT_LINU	JX_LOCAL}		Agent Variab	le : 🔽			
Credentials :	-		*	Credenti Variab	als			
Run with Highest Privileges : Interact with Desktop :	-							
AWS-S3 Details								
	Action			100				
	ACTION :	upload-file		~	Bucket :	stonebranchpmtest		
		upload-file \${sourcedir}/awss3/out/test*		v	Bucket : Operation :			
		\${sourcedir}/awss3/out/test*		×	Operation : Upload Write	copy		
AWS_SECRET_ACC	Sourcefile : Prefix :	\${sourcedir}/awss3/out/test*	50320	*	Operation :	copy Replace existing Object Replace existing Object		
27.7 Mar 10.7 A 2	Sourcefile : Prefix : CESS_KEY :	\${sourcedir}/awss3/out/test* dir1	50320		Operation : Upload Write	copy Replace existing Object		
AWS_ACCES	Sourcefile : Prefix : CESS_KEY : S_KEY_ID :	\${sourcedir}/awss3/out/test* dir1 AWS_SECRET_ACCESS_KEY_D0	50320	*	Operation : Upload Write	copy Replace existing Object Replace existing Object Do not overwrite existing object		
AWS_ACCES	Sourcefile : Prefix : CESS_KEY : S_KEY_ID :	\${sourcedir}/awss3/out/test* dir1 AWS_SECRET_ACCESS_KEY_D0 AWS_KEY_ID_D050320 AWS_REGION_us-east-2	50320		Operation : Upload Write	copy Replace existing Object Replace existing Object Do not overwrite existing object		
AWS_ACCES	Sourcefile : Prefix : CESS_KEY : S_KEY_ID : T_REGION :	\${sourcedir}/awss3/out/test* dir1 AWS_SECRET_ACCESS_KEY_D04 AWS_KEY_ID_D050320 AWS_REGION_us-east-2 No	50320		Operation : Upload Write	copy Replace existing Object Replace existing Object Do not overwrite existing object		
AWS_ACCES AWS_DEFAUL Role Ba	Sourcefile : Prefix : CESS_KEY : SS_KEY_ID : T_REGION : Useproxy :	\${sourcedir}/awss3/out/test* dir1 AWS_SECRET_ACCESS_KEY_D04 AWS_KEY_ID_D050320 AWS_REGION_us-east-2 No	50320		Operation : Upload Write	copy Replace existing Object Replace existing Object Do not overwrite existing object		

List Objects - Action

The Action is used to display objects in a bucket or a specific bucket folder (prefix).

Field	Description
Action	List-objects action
AWS_ACCESS_KEY_ID	AWS Account credentials Access Key
AWS_DEFAULT_REGION	AWS Account credentials Region
AWS_SECRET_ACCESS_KEY	AWS Account credentials Secret Access Key

Useproxy (default is NO)	[NO YES]
	If set to YES, the fields to set-up the proxy server connections are displayed:
	Proxy Server IP or hostname
	 Proxy Server Port Proxy Server Credentials (optional)
Loglevel (default is INFO)	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]
Role Based Access	[NO YES]
	If set to YES, the fields to set-up the IAM Role Based Access Connection are displayed:
	 Role Arn: Amazon Role, which is applied for the connection e.g. rn:aws:iam::111222333444:role/SB-AWSS3 Service Name [STS S3], default is STS
	STS: AWS Security Token Service is used to create and provide trusted users with temporary security credentials that can control access to your AWS resources.
Endpoint URL	Only used in case of a MinIO server; connection Endpoint URL for the MinIO storage system
Bucket	Bucket name in AWS
Prefix	A folder in a bucket is called prefix in AWS. In the field Prefix only the name of the folder needs to be provided no "/" after the folder name.
	If a prefix is provided only objects in the folder with the prefix name are listed in the output.
S3key	Objects matching the given S3key are listed.
	Unix filename pattern are supported to list only a selection of files: Supported wildcards are:
	? matches any single character
	 [seq] matches any character in seq [!seq] matches any character not in seq "*" matches everything
	Example:
	S3key = test* : matches everything starting with test
	S3key = test[1-2].txt : matches test1.txt, test2.txt
	S3key = test[!1].txt: does not match test1.txt
	S3key = test?.txt: matches test1.txt, test2.txt etc.
Show Details	Show details like creation timestamp in the output

Example for AWS S3 Universal Tasks - List Objects

General								_
Task Name :	AWS-S3-Lis	t Objects		Version	: 1			
Task Description :								
Member of Business Services :	AWS-S3-TE	ST						*
Resolve Name Immediately :				Time Zone Preference	System Default -	-	~	
Hold on Start :								
Virtual Resource Priority :	10		~	Hold Resources on Failure	2			
Agent Details								_
Cluster :								
Agent :	\${AGT_LINU	UX_LOCAL}		Agent Variable				
Credentials :			* ==	Credentials	3			
Run with Highest Privileges :				· · · · · · · · · · · · · · · · · · ·				
Interact with Desktop :								
AWS-S3 Details								_
	Action :	list-objects		¥	Bucket :	stonebranchpmtest		
	S3Key :				Prefix :	dir1		
S	how Details :	1						
AWS_SECRET_ACC	CESS_KEY :	AWS_SECRET_ACCESS_KEY	(_D050320	V AWS_	ACCESS_KEY_ID :	AWS_KEY_ID_D050320		
AWS_DEFAUL	T REGION :	AWS REGION us-east-2						
	Useproxy :	No		*				
Role Ba	sed Access :			~				
	ndpoint URL :	Line		- (1997)				
En				100				
	Loglevel :	INFO		~				

Download File - Action

This Action downloads one or multiple files from a bucket to a Linux or Windows folder

Field	Description
Action	Download-file action
AWS_ACCE SS_KEY_ID	AWS Account credentials Access Key
AWS_DEFA ULT_REGION	AWS Account credentials Region
AWS_SECR ET_ACCESS _KEY	AWS Account credentials Secret Access Key

Useproxy ([NO YES]
default is NO)	If set to YES, the fields to set-up the proxy server connections are displayed:
	 Proxy Server IP or hostname Proxy Server Port Proxy Server Credentials (optional)
Loglevel (default is INFO)	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]
Role Based Access	 [NO YES] If set to YES, the fields to set-up the IAM Role Based Access Connection are displayed: Role Arn: Amazon Role, which is applied for the connection e.g. rn:aws:iam::111222333444:role/SB-AWSS3 Service Name [STS S3], default is STS
	STS: AWS Security Token Service is used to create and provide trusted users with temporary security credentials that can control access to your AWS resources.
Endpoint URL	Only used in case of a MinIO server; connection Endpoint URL for the MinIO storage system
Target Directory	Linux or Windows Target Directory For example, C:\tmp\ or /home/ubuntu/download Unix filename pattern are supported to download a selection of files. Supported wildcards are: • ? matches any single character • [seq] matches any character in seq • [lseq] matches any character not in seq • "*" matches everything
Operation	[copy move] In case of a "move" the objects are deleted after they have been download from the bucket.
Download Write Options	 Download Write Options: [Replace existing File Do not overwrite existing File Timestamp Default Windows behaviour] Replace existing File : overwrite an existing file Do not overwrite existing File: cancel the operations in case a File with a similar name exists Timestamp: add a timestamp to the uploaded file Default Windows behaviour: perform the default Windows behaviour for copying files. If a file with a similar name exists, the file names that are similar will be edited so that the files you copied have a number appended at the end of them. For example, if you're copying a file named image.png to a folder that already has a file named image.png in it, the copied file will be named image (1).png.

Example for AWS S3 Universal Tasks - Download File

General	_								_
Task Name :	AWS-S3-Do	wnload File		,	Version :	6			
Task Description :									
Member of Business Services :	AWS-S3-TE	ST							Y
Resolve Name Immediately :	6			Tir Pret	ne Zone ference :	System Default		~	
Hold on Start :									
Virtual Resource Priority :	10	2		Hold Resol	urces on Failure :				
Agent Details									_
Cluster :									
Agent :	\${AGT_LIN	JX_LOCAL}		Agent \	/ariable :	V			
Credentials :			* =	Cre	edentials /ariable :				
Run with Highest Privileges : Interact with Desktop :	-								
AWS-S3 Details -									_
	Action :	download-file		~		Bucket :	stonebranchpmtest		_
Targ	et Directory :	\${sourcedir}/awss3/in/				S3Key :	dir1/test*		
	Operation :	сору		v	Downlo	ad Write Options :	Replace existing file		
AWS SECRET ACC	ESS KEY :	AWS SECRET ACCESS KEY D05032	0	*	AWS A	CCESS_KEY_ID :	Replace existing file		-
		AWS REGION us-east-2		× -			Do not overwrite existing file Timestamp		
	Useproxy :						Windows default behavior		
Dala Ra	sed Access :								
				Y					
En	dpoint URL :								
	Loglevel :	INFO		×.					

Delete Objects - Action

The Actions is used to delete an object in a bucket or folder.

Field	Description
Action	Delete-objects action
AWS_ACCESS_KEY_ID	AWS Account credentials Access Key
AWS_DEFAULT_REGION	AWS Account credentials Region
AWS_SECRET_ACCESS_KEY	AWS Account credentials Secret Access Key
Useproxy (default is NO)	[NO YES]
	If set to YES, the fields to set-up the proxy server connections are displayed:
	Proxy Server IP or hostname

	 Proxy Server Port Proxy Server Credentials (optional)
Loglevel (default is INFO)	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]
Role Based Access	 [NO YES] If set to YES, the fields to set-up the IAM Role Based Access Connection are displayed: Role Arn: Amazon Role, which is applied for the connection e.g. rn:aws:iam::111222333444:role/SB-AWSS3 Service Name [STS S3], default is STS STS: AWS Security Token Service is used to create and provide trusted users with temporary security credentials that can control access to your AWS resources.
Endpoint URL	Only used in case of a MinIO server; connection Endpoint URL for the MinIO storage system
Bucket	AWS bucket name
S3key	Key to be deleted in AWS Note: Due to security reasons wild card is only support, if at least one character is provided e.g. t* would delete all files starting with at "t".

Example for AWS S3 Universal Tasks - Delete Objects

Task Name :	AWS-S3-Del	ete Objects		Version :	1	
Task Description :						
Member of Business Services :	AWS-S3-TES	ST				~
Resolve Name Immediately :			P	Time Zone reference :	System Default	*
Hold on Start :						
Virtual Resource Priority :	10	×	Hold Res	ources on Failure :		
Agent Details						
Cluster :						
Agent :	\${AGT_LINU	IX_LOCAL}	Agen	Variable :		
Credentials :		~		Variable :		
Run with Highest Privileges :						
Interact with Desktop :						
AWS-S3 Details —						
	Antina					
	Action :	delete-objects			Bucket : stonebranchpmtest	
		delete-objects dir1/test*			Bucket : stonebranchpmtest	
AWS SECRET ACC	S3Key :	dir1/test*		,	Bucket : stonebranchpmtest	
	S3Key : CESS_KEY :				Bucket : stonebranchpmtest	
AWS_ACCES	S3Key : CESS_KEY : S_KEY_ID :	dir1/test* AWS_SECRET_ACCESS_KEY_D050320	*		Bucket : stonebranchpmtest	
AWS_ACCES	S3Key : CESS_KEY : S_KEY_ID :	dir1/test* AWS_SECRET_ACCESS_KEY_D050320 AWS_KEY_ID_D050320 AWS_REGION_us-east-2	× .		Bucket : stonebranchpmtest	
AWS_ACCES	S3Key : CESS_KEY : S_KEY_ID : T_REGION :	dir1/test* AWS_SECRET_ACCESS_KEY_D050320 AWS_KEY_ID_D050320 AWS_REGION_us-east-2 No			Bucket : stonebranchpmtest	
AWS_ACCES AWS_DEFAULT Role Bas	S3Key : CESS_KEY : S_KEY_ID : T_REGION : Useproxy :	dir1/test* AWS_SECRET_ACCESS_KEY_D050320 AWS_KEY_ID_D050320 AWS_REGION_us-east-2 No			Bucket : stonebranchpmtest	

Copy Object to Bucket - Action

This Action is used copy a single or multiple objects from one bucket to another bucket in AWS

Field	Description
Action	Copy-object-to-bucket action
AWS_ACCESS_KEY_ID	AWS Account credentials Access Key
AWS_DEFAULT_REGION	AWS Account credentials Region
AWS_SECRET_ACCESS_KEY	AWS Account credentials Secret Access Key
Useproxy (default is NO)	[NO YES]
	If set to YES, the fields to set-up the proxy server connections are displayed:

	 Proxy Server IP or hostname Proxy Server Port Proxy Server Credentials (optional)
Loglevel (default is INFO)	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]
Role Based Access	[NO YES]
	If set to YES, the fields to set-up the IAM Role Based Access Connection are displayed:
	 Role Arn: Amazon Role, which is applied for the connection e.g. rn:aws:iam::111222333444:role/SB-AWSS3 Service Name [STS S3], default is STS
	STS: AWS Security Token Service is used to create and provide trusted users with temporary security credentials that can control access to your AWS resources.
Endpoint URL	Only used in case of a MinIO server; connection Endpoint URL for the MinIO storage system
Bucket	AWS bucket name
Target Bucket	target Bucket, where the object(s) will be copied to
S3key	File to be copied from one bucket to another
Upload Write Options	Upload Write Options
	[Replace existing Object Do not overwrite existing Object Timestamp]
	 Replace existing Object: Overwrite an existing object Do not overwrite existing Object: Cancel the operations in case an object with a similar name exists Timestamp: Add a timestamp to the uploaded Object

Example for AWS S3 Universal Tasks - Copy Object to Bucket

General								
Task Name :	AWS-S3-Co	py Object to Bucket		Version	:	2		
Task Description :								
Member of Business Services :	AWS-S3-TE	ST						٣
Resolve Name Immediately :				Time Zon Preference	e : System D	efault	~	
Hold on Start :								
Virtual Resource Priority :	10	~	Ho	ld Resources of Failure	n; 🗖			
Agent Details								
Cluster :								
Agent :	\${AGT_LINU	JX_LOCAL}		Agent Variable	: 🗸			
Credentials :			*	Credential Variable	s 🗖			
Run with Highest Privileges :				vanabie				
Interact with Desktop :	1001							
AWS-S3 Details							_	
	Action :	copy-object-to-bucket		~	Bucket :	stonebranchpmtest		
Та	rget Bucket :	stonebranchpmtest2			S3Key :	dir1/test*		
Upload W	rite Options :	Replace existing Object		*				
AWS_SECRET_ACC	CESS_KEY :	AWS_SECRET_ACCESS_KEY_D050320		* =				
AWS_ACCES	S KEY ID :	AWS_KEY_ID_D050320		*				
		AWS_REGION_us-east-2		*				
	Useproxy :	No		*				
Role Ba	sed Access :	No		~				
En	dpoint URL :							
	Loglevel :	INFO		v				
				10000				

Delete Bucket - Action

This action is used to delete a bucket

Field	Description
Action	Delete-bucket action
AWS_ACCESS_KEY_ID	AWS Account credentials Access Key
AWS_DEFAULT_REGION	AWS Account credentials Region
AWS_SECRET_ACCESS_KEY	AWS Account credentials Secret Access Key
Useproxy (default is NO)	[NO YES]

	If set to YES, the fields to set-up the proxy server connections are displayed: Proxy Server IP or hostname Proxy Server Port Proxy Server Credentials (optional)
Loglevel (default is INFO)	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]
Role Based Access	[NO YES]
	If set to YES, the fields to set-up the IAM Role Based Access Connection are displayed:
	 Role Arn: Amazon Role, which is applied for the connection e.g. rn:aws:iam::111222333444:role/SB-AWSS3 Service Name [STS S3], default is STS
	STS: AWS Security Token Service is used to create and provide trusted users with temporary security credentials that can control access to your AWS resources.
Endpoint URL	Only used in case of a MinIO server; connection Endpoint URL for the MinIO storage system
Bucket	Name of the bucket to be deleted

Example for AWS S3 Universal Tasks - Delete Bucket

General						
Task Name :	AWS-S3-De	ete Bucket	Version	2		
Task Description :						
Member of Business Services :	AWS-S3-TE	ST				~
Resolve Name Immediately :			Time Zone Preference	System Default	~	
Hold on Start :						
Virtual Resource Priority :	10	*	Hold Resources or Failure			
Agent Details						
Cluster :	1					
Agent :	\${AGT_LINU	JX_LOCAL}	Agent Variable	: 🕅		
Credentials :		× 1	Credentials Variable	s		
Run with Highest Privileges :			Vanabio			
Interact with Desktop :						
AWS-S3 Details						
	Action :	delete-bucket	~	Bucket : stonebranchpmtest		
AWS_SECRET_ACC	ESS_KEY :	AWS_SECRET_ACCESS_KEY_D050320	V E AWS_	ACCESS_KEY_ID : AWS_KEY_ID_D050320		
AWS_DEFAUL	T_REGION :	AWS_REGION_us-east-2	¥ 🔚			
	Useproxy :	No	~			
Role Based Access		No	*			
En	dpoint URL :					
	Loglevel :	INFO	~			

Monitor Key - Action

This Action is used to monitor for a key(s) in a bucket

Field	Description			
Action	monitor-key action			
AWS_ACCESS_KEY_ID	WS Account credentials Access Key			
AWS_DEFAULT_REGION	AWS Account credentials Region			
AWS_SECRET_ACCESS_KEY	AWS Account credentials Secret Access Key			
Useproxy (default is NO)	[NO YES]			
	If set to YES, the fields to set-up the proxy server connections are displayed:			
	Proxy Server IP or hostname			

	 Proxy Server Port Proxy Server Credentials (optional)
Loglevel (default is INFO)	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]
Role Based Access	[NO YES]
	If set to YES, the fields to set-up the IAM Role Based Access Connection are displayed:
	 Role Arn: Amazon Role, which is applied for the connection e.g. rn:aws:iam::111222333444:role/SB-AWSS3 Service Name [STS S3], default is STS
	STS: AWS Security Token Service is used to create and provide trusted users with temporary security credentials that can control access to your AWS resources.
Endpoint URL	Only used in case of a MinIO server; connection Endpoint URL for the MinIO storage system
Bucket	Bucket name in AWS
Prefix	A folder in a bucket is called prefix in AWS. In the field Prefix only the name of the folder needs to be provided no "/" after the folder name.
	If a prefix is provided only objects in the folder with the prefix name are listed in the output.
S3key	Objects matching the given S3key are listed.
	Unix filename pattern are supported to list only a selection of files: Supported wildcards are:
	 ? matches any single character [seq] matches any character in seq [!seq] matches any character not in seq "*" matches everything
	Example:
	S3key = test* : matches everything starting with test
	S3key = test[1-2].txt : matches test1.txt, test2.txt
	S3key = test[!1].txt: does not match test1.txt
	S3key = test?.txt: matches test1.txt, test2.txt etc.
Interval	[10 60 180] Monitoring Interval in seconds
	Example:
	An Interval of 60s means every 60s the bucket is scanned for the key(s) to monitor.

Example for AWS S3 Universal Tasks - Monitor Key

					Update 🛄	Copy 🔁 Launch Ta	ask 🚡 View	Parents 🚮 Dele	ete 📑 Refre	esh 💢 Cl
AWS-S3 Task	• Var	iables	Actions	• Virtual R	esources	 Mutually Ex 	clusive	Instances		+ +
General -										
Task Name :	#2 AWS N	1onitor Key -	Sample			Version :	10			
Task Description :										
Member of Business	AWS-S3 S	amples								.7
Services : Resolve Name	_				т	me Zone				
Immediately :	_					ference : Syster	m Default		*	
Hold on Start : [
Virtual Resource Priority :	10			*	Hold Resc	urces on Failure :				
Agent Details										
Cluster : [
Agent :	\${AGT_LI	NUX}				Variable : 🔽				
Credentials :				-		edentials Variable :				
Run with Highest Privileges : Interact with Desktop :										
AWS-S3 Details										
	Action :	monitor-key	y			Bucket	stonebran	chpm		
	S3Key:	report1.txt				Prefix	: in			
AWS_SECRET_ACCE	SS_KEY :	AWS_SECR	RET_ACCESS_KE	Y_D050320	• 5					
AWS_ACCESS_	KEY_ID :	AWS_ACCE	SS_KEY_ID_D05	0320	•					
AWS_DEFAULT_REGION :		us-east-2								
Useproxy :		No								
Role Based	Access :	No			*					
L	oglevel :	INFO				Endpoint URL				
	interval :	10								

AWS SQS

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Introduction

Amazon Simple Queue Service (SQS) is a fully managed message queuing service that enables you to decouple and scale microservices, distributed systems, and serverless applications.

Overview

Using SQS, you can send, store, and receive messages between software components.

The Universal Task for SQS allows you to create, send and monitor AWS SQS messages and automatically trigger a Task in Universal Controller once a message has been received.

Software Requirements

Software Requirements Universal Agents and Controller

• Universal Agent for Linux or Windows Version 6.9.0.0 or later are required

Software Requirements Universal Controller

- Universal Controller 6.9.0.0. or later is required
- A Universal Controller license key with support for SAP connector is required

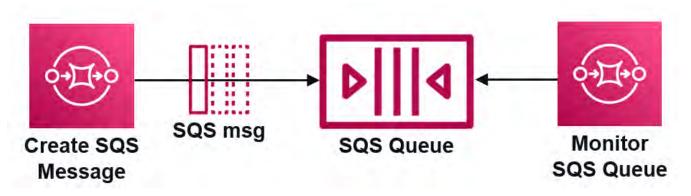
Software Requirements for the Application to be Scheduled

In order to connect to the SAP System the SAP NetWeaver RFC SDK 7.50 libraries are required from SAP.

Those can be downloaded from the SAP Software Download: SAP NetWeaver RFC SDK 7.50

Universal Task for AWS SQS Key Features

Some details about the Universal Tasks for AWS SQS:



- The Universal Tasks for SQS allows you to create, send and monitor for new AWS SQS messages.
- The Universal Task for SQS can trigger a Task in Universal Controller upon each arrival of a new message
- Credentials for AWS S3 are stored in an encrypted format in the database
- IAM Role-Based Access Control (RBAC) is supported
- Communication to AWS is done via the HTTPS protocol
- A Proxy Server connection to AWS with basic authentication is supported
- · You can create and send a SQS message out of any modern application by calling the Universal Controller Remote Webservice API
- The new SQS task can be integrated into any existing or new automation workflow like any other task.
- The Universal template script is using the Python Boto3 Module. This allows to quickly introduce new AWS Service and to update the current SQS Task when new requirements occur.
- · You can set different log-levels for the Universal task, providing you more information in case of issues

Import AWS SQS Virtual Machine Built-In Universal Template

To use the built-in Universal Template, you first must perform the following steps:

- 1. This Universal Task requires the Resolvable Credentials feature. Check that the Resolvable Credentials Permitted system property has been set to true.
- 2. Copy or Transfer the Universal Template file to a directory that can be accessed by the Universal Controller Tomcat user.
- 3. In the Universal Controller UI, select Configuration > Universal Templates to display the current list of Universal Templates.
- 4. Right-click any column header on the list to display an Action menu.
- 5. Select Import from the menu, enter the directory containing the Universal Template file(s) that you want to import, and click OK.

When the files have been imported successfully, the Universal Template will appear on the list.

Configure AWS SQS Universal Tasks

For the new Universal Task type AWS SQS, create a new task and enter the task-specific Details that were created in the Universal Template.

Field Descriptions for AWS SQS Universal Task - Actions

The AWS SQS Task provides three different Actions.

- receive-message
- list-queues
- send-message

For each action, the specific fields are described and an example is provided.

list-queues - Action

The Action list the available SQS queues for the given AWS Account and Role ARN (optional).

Field	Description					
Action	ist-queues action					
AWS_ACCESS_KEY_ID	WS Account credentials Access Key					
AWS_DEFAULT_REGION	AWS Account Region					
AWS_SECRET_ACCESS_KEY	AWS Account credentials Secret Access Key					
Useproxy (default is NO)	[NO YES]					
	If set to YES, the fields to set-up the proxy server connections are displayed: Proxy Server IP or hostname Proxy Server Port Proxy Server Credentials (optional)					
Queue Name Prefix	A string to use for filtering the list results. Only those queues whose name begins with the specified string are returned. Queue URLs and names are case-sensitive.					

	e.g. Queue Name Prefix = orders , will list all Queues starting with the name orders					
Loglevel (default is INFO)	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]					
Role Based Access (STS)	[NO YES]					
	If set to YES, the fields to set-up the IAM Role Based Access Connection are displayed:					
	Role Arn: Amazon Role, which is applied for the connection					
	Example RoleArn: arn:aws:iam::119322085622:role/SB-SQS-ReadOnly					
	STS: AWS Security Token Service is used to create and provide trusted users with temporary security credentials that can control access to your AWS resources like SQS Queues.					
Endpoint URL	Only used in case of a MinIO server; connection Endpoint URL for the MinIO storage system					

Examples for AWS SQS Universal Tasks - Action: list-queues

List-Queues - Action

General —					
Task Name :	AWS-SQS - Lis	st queues	Version :	15	
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 :		
Agent Details —					
Cluster :	1				
Agent :	\${AGT_LINUX	_PS4}	Agent Variable :	V	
Credentials :			Credentials Variable :		
Run with Highest Privileges :					
Interact with Desktop :					
AWS-SQS Details	s				
	Action :	list-queues	¥	Queue Name Prefix :	
AWS_SECRET_A	CCESS_KEY :	AWS_SECRET_ACCESS_KEY_NBU	*		
AWS_ACC	ESS_KEY_ID :	AWS_ACCESS_KEY_NBU	*		
AWS_DEFA	ULT_REGION :	eu-central-1			
	Useproxy :	No	*		
	Loglevel :	INFO	*		
Role Based	Access (STS) :	No	*		

Send-message - Action

This Action inserts a message into the given AWS SQS queue. The message Body and Attributes are configurable.

Field	Description
Action	send-message action
AWS_ACCESS_ KEY_ID	AWS Account credentials Access Key
AWS_DEFAULT_ REGION	AWS Account Region

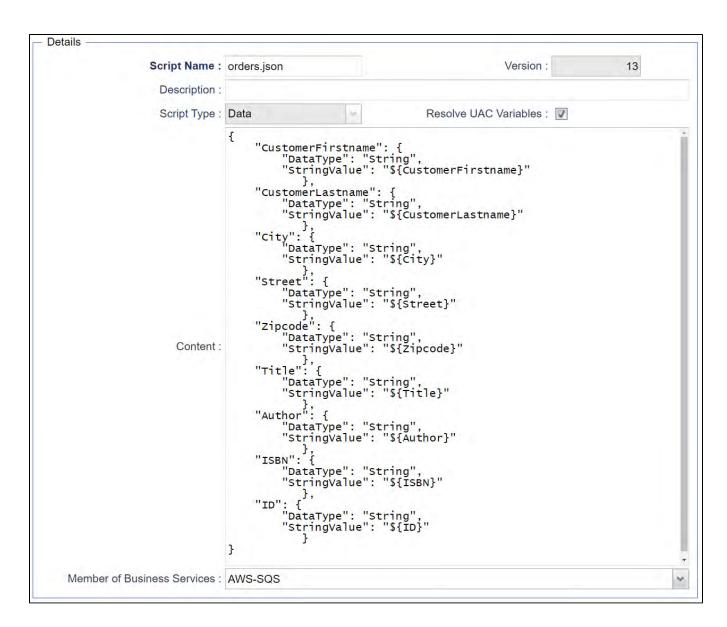
AWS_SECRET_ ACCESS_KEY	AWS Account credentials Secret Access Key
Useproxy(default is NO)	 [NO YES] If set to YES, the fields to set-up the proxy server connections are displayed: Proxy Server IP or hostname Proxy Server Port Proxy Server Credentials (optional)
SQS Queue Name	Name of the SQS Message queue Queue names are case-sensitive.
Message Body	SQS Message Body The message must contain the parameter Message Body. Parameter is of Type string. Example: {"Category":"Books"}
Attribute Script	The Attribute Script is a script in json format, which is saved in the Controller script library. Each message attribute consists of a Name , Type , and Value . The message attributes can be provided using JSON format. Example of Attribute Script with 2 Attributes: { "CustomerFirstname": { "DataType": "String", "StringValue": "Nils" }, "CustomerLastname": { "DataType": "String", "StringValue": "Buer" } } Amazon SQS lets you include structured metadata (such as timestamps, geospatial data, signatures, and identifiers) with messages using message attributes. Each message can have
Delay Seconds	up to 10 attributes. Message attributes are optional and separate from the message body (however, they are sent alongside it). The length of time, in seconds, for which to delay a specific message. Valid values: 0 to 900. Maximum: 15 minutes. Messages with a positive DelaySeconds value become available for processing after the delay period is finished. If you don't specify a value, the default value for the queue applies.
Loglevel (default is INFO)	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]
Role Based Access (STS)	[NO YES] If set to YES, the fields to set-up the IAM Role Based Access Connection are displayed: • Role Arn: Amazon Role, which is applied for the connection Example RoleArn: <i>arn:aws:iam::119322085622:role/SB-SQS-ReadOnly</i> STS: AWS Security Token Service is used to create and provide trusted users with temporary security credentials that can control access to your AWS resources like SQS Queues.
Endpoint URL	Only used in case of a MinIO server; connection Endpoint URL for the MinIO storage system

Examples for AWS SQS Universal Tasks - Action: send-message

Send-message - Action

General							
		Send Message		Version	n : 3		
Task Description :							
Member of Business Services :							v
Resolve Name Immediately :				Time Zor Preference	ne e : - System Default		Y
Hold on Start :							
Virtual Resource Priority :	10		*	Hold Resources (Failure	on e:		
Agent Details							
Cluster :							
Agent :	\${AGT_LINU	JX_PS4}		Agent Variabl	e: 🔽		
Credentials :	2	*	Credentia Variabl				
Run with Highest Privileges :							
Interact with Desktop :	1000						
AWS-SQS Details -							
	Action :	send-message		*			
AWS_SECRET_AC	CESS_KEY :	AWS_SECRET_ACCESS_KEY	NBU	*			
AWS_ACCES	S_KEY_ID :	AWS_ACCESS_KEY_NBU		× =			
AWS_DEFAUL	T_REGION :	eu-central-1					
	Useproxy :	No		~			
	Loglevel :	INFO		~			
SQS Queue Name : Stonebranch_Task_Order_Queue			le	N	Message Body : {"Catego	ory":"\${Category}"}	
Att	ribute Script :	orders.json		× 🖂	DelaySeconds :	10	
Role Based Ad	ccess (STS) :	No		*			

Attribute Script Example



Script Example: orders.json

```
{
    "CustomerFirstname": {
        "DataType": "String",
        "StringValue": "${CustomerFirstname}"
```

```
},
"CustomerLastname": {
    "DataType": "String",
    "StringValue": "${CustomerLastname}"
},
"City": {
    "DataType": "String",
    "StringValue": "${City}"
      },
"Street": {
    "DataType": "String",
    "StringValue": "${Street}"
      },
"Zipcode": {
    "DataType": "String",
    "StringValue": "${Zipcode}"
     },
"Title": {
    "DataType": "String",
    "StringValue": "${Title}"
      },
"Author": {
    "DataType": "String",
    "StringValue": "${Author}"
      },
"ISBN": {
    "DataType": "String",
    "StringValue": "${ISBN}"
      },
"ID": {
    "DataType": "String",
    "StringValue": "${ID}"
      }
```

Receive-message - Action

The Action polls in configurable interval the provided SQS queue. If a message is found a Task can be launched (optional). Optionally it be configured after a message is received the task goes to success and does not continue to poll for new messages.

Field	Description
Action	receive-message action
AWS_ACCESS_ KEY_ID	AWS Account credentials Access Key
AWS_DEFAULT_ REGION	AWS Account Region
AWS_SECRET_ ACCESS_KEY	AWS Account credentials Secret Access Key
Useproxy(default is NO)	[NO YES] If set to YES, the fields to set-up the proxy server connections are displayed:
	 Proxy Server IP or hostname Proxy Server Port

}

	Proxy Server Credentials (optional)					
Universal	Universal Controller URL					
Controller URL	URL has no backslash "/" at the end.					
	Example: <u>http://192.168.88.10:8080/uc</u>					
Universal	Universal Controller Credentials					
Controller Credentials	The Credentials need to have "Web Service Access" Permissions					
Attribute Names	[All Policy VisibilityTimeout MaximumMessageSize MessageRetentionPeriod ApproximateNumberOfMessages ApproximateNumberOfMessagesNotVisible CreatedTimestamp LastModifiedTimestamp QueueArn ApproximateNumberOfMessagesDelayed DelaySeconds ReceiveMessageWaitTimeSeconds RedrivePolicy FifoQueue ContentBasedDeduplication KmsMasterKeyId KmsDataKeyReusePeriodSeconds]					
	For details on the attributes refer to: AWS-SQS-CLI-AttributeNames					
MessageAttribute Names	[ALL list of attributes in CSV format]					
Names	Message Attributes to be returned					
	'ALL' returns all attributes of the message					
	Example: MessageAttributeNames = Author, Title will return only the attribute for Author and Title.					
WaitTimeSeconds	The duration (in seconds) for which the call waits for a message to arrive in the queue before returning. If a message is available, the call returns sooner than WaitTimeSeconds . If no messages are available and the wait time expires, the call returns successfully with an empty list of messages.					
Launch Task	Taskname of the Task to launch in Universal Controller.					
	The task will be always launched with two Task Variables:					
	 {Body}: contains the message body in json format {Attributes}: contains the message attributes in json format. 					
	The Variable content can be used in further processing.					
	e.g. If a Linux task is launched by the AWS SQS Task than an echo {Attributes} command executed by the Linux task will print out all message attributes in json format to STDOUT.					
Delete Messages	[Yes No]					
from queue after reading	If "Yes" the received Messages is deleted from the queue after reading					
Interval in seconds	Message Polling Interval in seconds					
Run Mode	[Run Once Run Forever]					
	 Run once : if a message is found the task goes to success Run Forever : each time a new message is found the configured task is launched 					
	Example:					
	 Run once can be used in Workflows Run Forever can be used as Standalone Task, where each message triggers a task launch. 					
	The maximum number of messages to return. Amazon SQS never returns more messages than this value (however, fewer messages might be returned). Valid values: 1 to 10. Default: 1.					

MaxNumberOfMe ssages	
Loglevel (default is INFO)	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]
Role Based Access (STS)	 [NO YES] If set to YES, the fields to set-up the IAM Role Based Access Connection are displayed: Role Arn: Amazon Role, which is applied for the connection Example RoleArn: <i>arn:aws:iam::119322085622:role/SB-SQS-ReadOnly</i> STS: AWS Security Token Service is used to create and provide trusted users with temporary security credentials that can control access to your AWS resources like SQS Queues.
Endpoint URL	Only used in case of a MinIO server; connection Endpoint URL for the MinIO storage system

Examples for AWS SQS Universal Tasks - Action: receive-message

Receive-message - Action

- General									
Task Name : A	AWS-SQS -	Receive Message		Versi	ion : 7				
Task Description :									
Member of Business Services :									~
Resolve Name Immediately :			F	Time Z Preferen	Zone nce : System Default			¥	
Hold on Start :									
Virtual Resource Priority : 1	10	v	Hold Re	source Failu	s on ure :				
Agent Details									_
Cluster : [
Agent : \$	\${AGT_LINU	JX_PS4}	Age	nt Varia	ble : 🔽				
Credentials :		×		Creden Varia	itials				
Run with Highest Privileges : Interact with Desktop :									
AWS-SQS Details									
	Action :	receive-message		~					
AWS_SECRET_ACCE	ESS_KEY :	AWS_SECRET_ACCESS_KEY_NBU	*	5					
AWS_ACCESS_KEY_ID		AWS_ACCESS_KEY_NBU	*	8					
AWS_DEFAULT_	REGION :	eu-central-1		-					
	Useproxy :	No		~					
	Loglevel :	DEBUG		~					
SQS Que	eue Name :	orders2							
WaitTime	eSeconds :	10		Ma	xNumberOfMessages :		10		
MessageAttributeNames		: Author,Title			AttributeNames :	All			
Interval in seconds :		: 10			Delete Messages from Queue after reading :	yes			
Role Based Access (STS)		: No 🗸		~ Uni	iversal Controller URL :	: https://ps2.stonebranchdev.cloud			
Run Mode :		Run Forever		*	Universal Controller Credentials :	CRED-REST-API-PS2			
Launch Task :		: dump-message-content							

Azure Blob Storage

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Introduction

Storing data in the cloud becomes an integral part of most modern IT landscapes. With Universal Automation Center you can securely automate your AWS, Azure, Google and MinIO File Transfers and integrate them into your existing scheduling flows.

As security is one of the key concerns, when moving to the cloud, the provided solution supports multi-level of security:

- · Credentials for Azure Keys are stored in an encrypted form in the database
- Support for Azure Token based Shared Access Signatures (SAS)
- Communication to Azure is done via the HTTPS protocol
- · A Proxy Server connection to Azure with basic authentication is supported

This Universal Task focuses on file transfer to, from and between an Azure Blob Storage.

A similar solution as for Azure Blob Storage is also available for AWS S3 and Google Cloud Storage.

Overview

The Universal Task for Azure Blob Storage allows to securely transfers files from, to and between Azure Blob Storage container and folders.

The Universal Task for Azure Blob Storage supports the following main features:

- The following file transfer commands are supported:
 - Upload a file(s) to an Azure Blob Storage container
 - Download of file(s) from an Azure Blob Storage container
 - Transfer files between Azure Blob Storage containers
 - · List objects in an Azure Blob Storage container
 - Delete object(s) in an Azure Blob Storage container
 - List Azure Blob Storage container names
 - Create an Azure Blob Storage container
 - Monitor a Blob in a Storage container
- File Transfer can be triggered by a third-party application using the Universal Automation Center RESTfull Webservice API: REST API
- Universal Task for Azure Blob Storage can be integrated into any existing scheduling workflow in the same way as any standard Linux or Windows Task type.
- · Security is ensured by using the HTTPS protocol with support for an optional Proxy Server.
- Support for Azure Token based Shared Access Signatures (SAS)
- No Universal Agent needs to be installed on the Azure Cloud the communication goes via HTTPS

Software Requirements

Software Requirements for Universal Agent

- Universal Agent for Linux or Windows Version 7.0.0.0 or later are required
- The Universal Agent needs to be installed with python option (--python yes)

Software Requirements for Universal Controller

• Universal Controller 7.0.0.0. or later is required

Software Requirements for the Application to be Scheduled

The Universal Task has been tested for the python Azure Storage SDK: azure-storage-blob version: 12.7.1

Key Features

The solution supports the following file transfer scenarios:

Feature	Description
Upload a file(s) to a container (Copy or Move)	 One or more files can be uploaded to a container. Move or copy are supported for the upload Unix filename pattern matching support; for example, wild card support "*" to upload multiple files One or more files can be Uploaded to a folder using a prefix It can be decided via an the Upload Write Options to: Overwrite an existing object (<i>Replace existing Object</i>) Cancel the operations in case an object with a similar name exists (<i>Do not overwrite existing Object</i>) Add a timestamp to the uploaded Object (<i>Timestamp</i>)
Download of file(s) from a container (Copy or Move)	 One or more files should be downloaded from a bucket. Move or copy must be supported for the download Unix filename pattern matching support; for example, wild card support "*" to download multiple files Download to a specific folder is supported It can be decided via an the <i>Download Write Options</i> to: Overwrite an existing file (<i>Replace existing File</i>) Cancel the operations in case a File with a similar name exists (<i>Do not overwrite existing File</i>) Add a timestamp to the uploaded file (<i>Timestamp</i>) Perform the default Windows behaviour for copying files (<i>Default Windows behaviour</i>) If a file with a similar name exists, the file names that are similar will be edited so that the files you copied have a number appended at the end of them. For example, if you're copying a file named image.png to a folder that already has a file named image.png in it, the copied file will be named image (1).png.
Copy object to a container	 An object can be copied from one container to another. Folders are support Note: wild cards are not supported for this method.
List objects in a container	 Show all Objects in a container Show all Objects in a folder Unix filename pattern matching support e.g. wild card support "*" to narrow down the objects to display
Delete object(s) in a container	 Delete one or multiple objects in a container Delete one or multiple objects in folder in a container Unix filename pattern matching support e.g. wild card support "*" to narrow down the objects to be deleted
List buckets	List all container in an Azure account
Create a container	Create a new container
Monitor Blob	Monitor a Blob in a Storage container

Proxy Server Connection	A proxy server connection with or without basic authentication can be configured
Integration into 3 rd Party Applications	An Azure Blob Storage file transfer can be triggered via the Universal Automation Center RESTfull Webservice API within an application.
Self-Service through Web- Client	The Azure Blob Storage Task can be fully configured, monitored and updated via the Universal Controller Web-GUI

Import Azure Blob Storage Universal Template

The Universal Template is provided as a Zip-file. This Zip-file can be imported from any local folder using the Universal Controller UI.

To load the Universal Template Zip-file perform the following steps:

- 1. This Universal Task requires the Resolvable Credentials feature. Check that the Resolvable Credentials Permitted system property has been set to true.
- 2. Copy the Universal Template Zip-file to a local directory directory.
- 3. In the Universal Controller UI, select Administration > Universal Templates > Import Template.
- 4. Select the Universal Template Zip-file to import.

When the Universal Template Zip-file has been imported successfully, the Universal Template will appear on the list.

Configure Azure Blob Storage Universal Tasks

For the new Universal Task type, create a new task and enter the task-specific Details that were created in the Universal Template.

Field Descriptions for Azure Blob Storage Universal Task - Action

The Azure Blob Storage Task provides multiple different file transfer actions. For each action the specific fields are described.

Azure Blob Storage Container is abbreviated to Container in the following.

Create Container - Action

The Action Creates a new Container.

Field	Description
Action	create-container action
Useproxy (default is NO)	 [NO YES] If set to YES, the fields to set-up the proxy server connections are displayed: Proxy Server IP or hostname Proxy Server Port
Loglevel (default is INFO)	Proxy Server Credentials (optional) Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]
Connection Type	[Azure Account Key SAS Token]

	If set to 'Azure Account Key', the credential field 'Azure Account' will appear for configuration.
	If set to 'SAS Token', the credential field 'SAS Token' will appear for configuration.
Container	Name of the Container to create

Example for Azure Blob Storage Universal Tasks - Create Container

The following Task creates the Container: stonebranchpm2

	ask Details: #4 Azure Create		I	I Linda	te 🗔 Launch Tas	k Et Min	W Parante Db (Conv C Doloto	Defrech	9 CI
zure-Blob Storage v0.1	Fask Variables	Actions Vir	tual Resources		tually Exclusive	Instances	Triggers	N. Same	Versions	
General										-
Task Name :	#4 Azure Create Container	- Linux-New Azur	e SDK - Accoun	t	Version :		6			
Task Description :										
	packaged_solutions_v7									4
Resolve Name Immediately :					Time Zone Preference :	System	Default		*	
Hold on Start :										
Virtual Resource Priority :	10		×		Hold Resources on Failure :					
Agent Details										
Cluster :										
Agent:	AGT_LINUX_PS4				Agent Variable :					
Credentials :	1				Credentials Variable :					
Run with Highest Privileges :										
Interact with Desktop :										
Azure-Blob Storage	0.1 Details									
Action :	create-container			v	Container :	stonebran	chpm2			
Useproxy :	No			×						
Loglevel :	DEBUG			~						
Azure Account :	Azure-Storage-Account-Nil	s		e 🔚						
Connection Type :	Azure Account Key			×						
Runtime Directory :										
									0	0
Environment	Name				Value					
Variables :					No items to show.					
										_

List Container - Action

The Action list all container of an Azure Account.

Field	Description
Action	list-container action
Connection Type	[Azure Account Key SAS Token] If set to 'Azure Account Key', the credential field 'Azure Account' will appear for configuration. If set to 'SAS Token', the credential field 'SAS Token' will appear for configuration.
Useproxy (default is NO)	 [NO YES] If set to YES, the fields to set-up the proxy server connections are displayed: Proxy Server IP or hostname Proxy Server Port Proxy Server Credentials (optional)
Loglevel (default is INFO)	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]

Example for Azure Blob Storage Universal Tasks - List Containers

The following Task list all container of the selected Azure Account.

re-Blob Storage v0.1 Ta		Upd	ate 🗔 Launch	Task 🖷 V	iew Parents	Copy d	Delete	Refresh	-	
zure-Blob Storage v0.1	Task Variables Actions Virtual Resources			Instances	Triggers	Notes	M		**	-
General	u , "									_
Task Name :	#1 Azure List Container - Linux-New Azure SDK - Account		Versio	n :	5					
Task Description :										
Member of Business Services :	packaged_solutions_v7								~	
Resolve Name Immediately :			Time Zo Preferenc	ne e : - System	Default			~		
Hold on Start :										
Virtual Resource Priority :	10		Hold Resources Failur	on 🔲						
Agent Details									_	1
Cluster :										
Agent :	AGT_LINUX_PS4	¥	Agent Variabl	e: 🔲						
Credentials :		*	Credenti Variabl	als 🔲						
Run with Highest Privileges :										
Interact with Desktop :										
Azure-Blob Storage	/0.1 Details									
Action :	list-container	9								
Useproxy :	No	*								
Loglevel :	DEBUG	*								
Azure Account :	Azure-Storage-Account-Nils	*								
Connection Type :	Azure Account Key	*								
Runtime Directory :										
								0	0	
Environment	Name		Value							
Variables :			No items to show							
- Result Processing De	etails									

Upload File - Action

The Action is used to upload a single or multiple files from a Windows or Linux server to an container or a folder in a container.

Field	Description
Action	Upload-file action
Connection Type	[Azure Account Key SAS Token]

	If set to 'Azure Account Key', the credential field 'Azure Account' will appear for configuration.
	If set to 'SAS Token', the credential field 'SAS Token' will appear for configuration.
Useproxy (default is NO)	 [NO YES] If set to YES, the fields to set-up the proxy server connections are displayed: Proxy Server IP or hostname Proxy Server Port Proxy Server Credentials (optional)
Loglevel (default is INFO)	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]
Sourcefile	Source file(s) to be uploaded to a bucket or specific folder in a container. Unix filename pattern are supported to upload a selection of files. Supported wildcards are: • ? matches any single character • [seq] matches any character in seq • [!seq] matches any character not in seq • "*" matches everything
Operation	[copy move] In case of a "move" the source file(s) is/are deleted after the upload to the container.
Prefix	A folder in a container is called prefix. In the field Prefix only the name of the folder needs to be provided no "/" after the folder name
Upload Write Options	Upload Write Options [Do not overwrite existing Object Timestamp] Do not overwrite existing Object: Cancel the operations in case an object with a similar name exists Timestamp: Add a timestamp to the uploaded Object

Example for Azure Blob Storage Universal Tasks - Upload File

The following Task uploads from the Linux directory the files: /home/stonebranch/demo/azure/out/test[1-4]* to the the container stonebranchpm, folder incoming.

-Blob Storage v0.1 T	isk Details: #2 Azure upload file	s) - Linux-New Azure SDK -							
			📳 Update	e 🗔 Launch Ta	sk 🚡 Vi	iew Parents	Copy 🏦 D	elete 👍 Refresh	💥 Clo
re-Blob Storage v0.1	ask 🔍 Variables 👘 Actio	ons 🔋 Virtual Resources	S Mutu	ally Exclusive	Instance	s 🛛 Triggers	Notes	Versions	
General									
Task Name :	#2 Azure upload file(s) - Linux-I	New Azure SDK - Account		Version		21			
Task Description :									
Nember of Business Services :	packaged_solutions_v7								~
Resolve Name Immediately :				Time Zone Preference		n Default		~	
Hold on Start :									
Virtual Resource Priority :	10	*	н	old Resources or Failure					
Agent Details									
Cluster :									
Agent :	AGT_LINUX_PS4		· •	Agent Variable					
Credentials :			•	Credentials Variable					
Run with Highest Privileges :									
Interact with Desktop :									
zure-Blob Storage v	0.1 Details								
Action :	upload-file		~	Container	stonebra	nchpm/incoming			
Sourcefile :	/home/stonebranch/demo/azure	e/out/test[1-4]*		Operation	сору				~
Upload Write Options :	Do not overwrite existing object	t	~						
Useproxy :	No		~						
Loglevel :	DEBUG		~						
Azure Account :	Azure-Storage-Account-Nils		•						
Connection Type :	Azure Account Key		~						
Runtime Directory :									
								٢	0
Environment	Name			Value					
Variables :									

List Objects - Action

The Action is used to display objects in a Azure Container or a specific folder in an Azure Container (prefix).

Field	Description
Action	List-objects action
Connection Type	[Azure Account Key SAS Token]
	If set to 'Azure Account Key', the credential field 'Azure Account' will appear for configuration.

	If set to 'SAS Token', the credential field 'SAS Token' will appear for configuration.
Useproxy (default is NO)	 [NO YES] If set to YES, the fields to set-up the proxy server connections are displayed: Proxy Server IP or hostname Proxy Server Port Proxy Server Credentials (optional)
Loglevel (default is INFO)	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]
Container	Container in which the objects should be listed
Prefix	A folder in a container is called prefix. In the field Prefix only the name of the folder needs to be provided no "/" after the folder name. If a prefix is provided only objects in the folder with the prefix name are listed in the output.
Blob	Objects matching the given Blob are listed. Unix filename pattern are supported to list only a selection of files: Supported wildcards are: • ? matches any single character • [seq] matches any character in seq • [!seq] matches any character not in seq • "**" matches everything Example: Blob = test* : matches everything starting with test Blob = test[1-2].txt : matches test1.txt, test2.txt Blob = test[!1].txt: does not match test1.txt Blob = test?.txt: matches test1.txt, test2.txt etc.
Show Details	Show details like creation timestamp in the output

Example for Azure Blob Storage Universal Tasks - List Objects

The following Task list all objects matching the criteria *test** in the container *stonebranchpm* in the folder *incoming*.

				te 🗔 Launch Tao	ek 🕞 View	Parente De	Copy de F	Delete 🔄 Refresh	X CI
zure-Blob Storage v0.1	Task Variables	Actions Virtual Resource	and a	ually Exclusive	Instances	Triggers	Notes	Versions	00 UI
General				h.					
Task Name :	#3 Azure List Objects - L	inux-New Azure SDK - Account	1	Version :		18			
Task Description :									
Member of Business Services :	packaged_solutions_v7								*
Resolve Name Immediately :				Time Zone Preference :	System D)efault		~	
Hold on Start :									
Virtual Resource Priority :	10	~	-	Hold Resources on Failure :	E				
- Agent Details									-
Cluster :									
Agent :	AGT_LINUX_PS4		¥	Agent Variable :					
Credentials :			*	Credentials Variable :					
Run with Highest Privileges :									
Interact with Desktop									
Azure-Blob Storage	v0.1 Details								
Action :	list-blobs		~	Container :	stonebranc	hpm			
Blob :	test*								
Useproxy :	No		*						
Loglevel :	DEBUG		*						
Azure Account :	Azure-Storage-Account-	Nils	*						
Connection Type :	Azure Account Key		*	Prefix :	/incoming				
Runtime Directory :	1.								
								0	0
Environment	Name			Value					-
Variables :				No items to show.					

Download File - Action

This Action downloads one or multiple files from an Azure Container to a Linux or Windows folder.

Field	Description
Action	Download-file action
	[Azure Account Key SAS Token]
Туре	If set to 'Azure Account Key', the credential field 'Azure Account' will appear for configuration.

	If set to 'SAS Token', the credential field 'SAS Token' will appear for configuration.
Useproxy (default is NO)	[NO / YES] If set to YES, the fields to set-up the proxy server connections are displayed: • Proxy Server IP or hostname • Proxy Server Port • Proxy Server Credentials (optional)
Loglevel (default is INFO)	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]
Target Directory	Linux or Windows Target Directory For example, C:\tmp\ or /home/ubuntu/download Unix filename pattern are supported to download a selection of files. Supported wildcards are:
Operation	[copy move] In case of a "move" the objects are deleted after they have been download from the container.
Download Write Options	 Download Write Options: [Replace existing File Do not overwrite existing File Timestamp Default Windows behaviour] Replace existing File : overwrite an existing file Do not overwrite existing File: cancel the operations in case a File with a similar name exists Timestamp: add a timestamp to the uploaded file Default Windows behaviour: perform the default Windows behaviour for copying files. If a file with a similar name exists, the file names that are similar will be edited so that the files you copied have a number appended at the end of them. For example, if you are copying a file named image.png to a folder that already has a file named image.png in it, the copied file will be named image (1).png.

Example for Azure Blob Storage Universal Tasks - Download File

The following Task downloads from the container stonebranchpm all blobs matching the criteria test[1-2]* to the Linux directory: /home/stonebranch/demo/azure/in

Dieb storage for it	ask Details: #8 Azure download file - Linux-New Azure S			. 🖂 . e.,		0 (P) D-	Inter The Defeat	-
ure-Blob Storage v0.1 1	Task Variables Actions Virtual Resou	V	tually Exclusive	Instances	Parents Triggers	Copy 👔 De	Versions	💥 Cl
-		inces with		mstances	• Higgers	0 Notes	Versions	
General —								
Task Name :	#8 Azure download file - Linux-New Azure SDK - Acco	ount	Version :		42			
Task Description :								
Member of Business Services :	packaged_solutions_v7							~
Resolve Name Immediately :			Time Zone Preference :	System	Default		*	
Hold on Start :								
Virtual Resource Priority :	10 *		Hold Resources on Failure :					
Agent Details —								
Cluster :								
Agent :	AGT_LINUX_PS4	*	Agent Variable :					
Credentials :		*	Credentials Variable :					
Run with Highest Privileges :								
Interact with Desktop :								
Azure-Blob Storage v	0.1 Details							
Action :	download-file	~	Container :	stonebrand	:hpm			
Target Directory :	/home/stonebranch/demo/azure/in			test[1-2]*				
Operation :	сору	~	Download Write Options :	Do not ove	rwrite existing f	le		~
Useproxy :	No	~						
Loglevel :	DEBUG	~						
Azure Account :	Azure-Storage-Account-Nils	×						
Connection Type :	Azure Account Key	~						
Runtime Directory :								
							٢	0
Environment	Name		Value					
Variables :			No items to show.					

Delete Objects - Action

The Actions is used to delete an object in an Azure Container or folder

Field	Description
Action	Delete-objects action
Connection Type	[Azure Account Key SAS Token]

	If set to 'Azure Account Key', the credential field 'Azure Account' will appear for configuration. If set to 'SAS Token', the credential field 'SAS Token' will appear for configuration.
Useproxy (default is NO)	 [NO YES] If set to YES, the fields to set-up the proxy server connections are displayed: Proxy Server IP or hostname Proxy Server Port Proxy Server Credentials (optional)
Loglevel (default is INFO)	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]
Container	Container in which the Blobs should be deleted.
Blob	Blobs to be deleted in the given container Note: Due to security reasons wild card is only support, if at least one character is provided e.g. t* would delete all files starting with at "t".

Example for Azure Blob Storage Universal Task - Delete Objects

The following Task deletes in the container stonbranchpm, folder incoming all Blobs matching the criteria test[3-4]*.

re-Blob Storage v0.1 T					e 🗔 Launch	Tack I		Do Conv	Bol	ete 👍 Refresh	
zure-Blob Storage v0.1	Task Variables	Actions	Virtual Resources		ually Exclusive	 Inst 	1C	igers	Notes	Versions	
General											_
Task Name :	#6 Azure delete-object	ts - Linux-New	Azure SDK - Account		Versio	n :	19				
Task Description :											
Member of Business Services :	packaged_solutions_v	17									~
Resolve Name Immediately :		3				ne e : - Sy	stem Default	_		•	
Hold on Start :											
Virtual Resource Priority :	10		*		Hold Resources Failur	on 🔳					
Agent Details —											
Cluster :											
Agent :	AGT_LINUX_PS4			×	Agent Variabl	e: 🔲					
Credentials :				*	Credentia Variabl	e:					
Run with Highest Privileges :											
Interact with Desktop :											
Azure-Blob Storage	v0.1 Details			_							_
Action :	delete-blobs			~	Containe	r: ston	ebranchpm				
Blob :	incoming/test[3-4]*										
Useproxy :	No			~							
Loglevel :	DEBUG			~							
Azure Account :	Azure-Storage-Accou	nt-Nils		*							
Connection Type :	Azure Account Key			~							
Runtime Directory :											
										Q	0
Environment Variables :	Name				Value					_	
					No items to show						

Copy Object to Container - Action

This Action is used copy an objects from one Azure Container to another Azure Container.

Field	Description
Action	Copy-object-to-bucket action
Connection Type	[Azure Account Key SAS Token]
	If set to 'Azure Account Key', the credential field 'Azure Account' will appear for configuration.

	If set to 'SAS Token', the credential field 'SAS Token' will appear for configuration.
Useproxy (default is NO)	 [NO YES] If set to YES, the fields to set-up the proxy server connections are displayed: Proxy Server IP or hostname Proxy Server Port Proxy Server Credentials (optional)
Loglevel (default is INFO)	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]
Container	Source container
Target Container	Target container, where the object(s) will be copied to
Blob	File (Blob) to be copied from the source container to target container.
Upload Write Options	Upload Write Options [Do not overwrite existing Object Timestamp] Do not overwrite existing Object: Cancel the operations in case an object with a similar name exists Timestamp: Add a timestamp to the uploaded Object

Example for Azure Blob Storage Universal Tasks - Copy Object to Container

The following Task copies the Blob: test1.txt from the source container: stonebranchpm to the target container: stonebranchpm2

ie-biob storage voir in	ask Details: #5 Azure copy object to container - Linux-New A				-	
		in con		sk 🚡 View Parents 🛄 Copy 👘 Delete		X Clo
zure-Blob Storage v0.1	Task Variables Actions Virtual Resources	Mut	tually Exclusive	Instances Triggers Notes	Versions	
General						_
Task Name :	#5 Azure copy object to container - Linux-New Azure SDK -	- Acc	Version :	21		
Task Description :						
Member of Business Services :	packaged_solutions_v7					~
Resolve Name Immediately :			Time Zone Preference :	System Default	~	
Hold on Start :						
Virtual Resource Priority :	10 *		Hold Resources on Failure :			
Agent Details		_				_
Cluster :						
Agent :	AGT_LINUX_PS4	×	Agent Variable :			
Credentials :		¥ 📰	Credentials Variable :			
Run with Highest Privileges :						
Interact with Desktop :						
Azure-Blob Storage v	/0.1 Details					_
Action :	copy-object-to-container	Y	Container :	stonebranchpm		
Target Container :	stonebranchpm2		Blob :	test1.txt		
Upload Write Options :	Timestamp					
Useproxy :	No	~				
Loglevel :	DEBUG	*				
Azure Account :	Azure-Storage-Account-Nils	*				
Connection Type :	Azure Account Key	~				
Runtime Directory :						
					0	0
Environment	Name		Value			
Variables :			No items to show.			

Delete Container - Action

This action is used to delete an Azure Container

Field		Description
Action		Delete-container action
Connection	Туре	[Azure Account Key SAS Token]

	If set to 'Azure Account Key', the credential field 'Azure Account' will appear for configuration.
	If set to 'SAS Token', the credential field 'SAS Token' will appear for configuration.
Useproxy (default is NO)	[NO YES]
	If set to YES, the fields to set-up the proxy server connections are displayed:
	 Proxy Server IP or hostname Proxy Server Port
	Proxy Server Credentials (optional)
Loglevel (default is INFO)	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]
Container	Name of the Container to be deleted
	Note: The container is delete including all objects.

Example for Azure Blob Storage Universal Tasks - Delete Container

The following Task delete the container stonebranchpm2

re-Blob Storage v0.1 T					inter-interi	TRUIC JL			🗔 Laun	ch Tasl	K In Vie	ew Pare	nts Di	Copy	di De	elete	S Refresh	- × c
zure-Blob Storage v0.1	Task Va	riables	Action	s	Virtual	Resources		-	y Exclusive		Instances	T.	Triggers	17	Notes	10	Versions	
General —																		
Task Name :	#7 Azure dele	ete Contai	ner - Linux	-New A	Azure SC	K - Accou	unt		Ver	sion :		6	P					
Task Description :																		
Member of Business Services :	packaged_so	lutions_v7	·															v
Resolve Name Immediately :									Time Prefere	Zone ance :	System	Defaul	-				~	
Hold on Start :																		
Virtual Resource Priority :	10					~		Hole	d Resourc Fa	es on ilure :								
Agent Details																		
Cluster :																		
Agent :	AGT_LINUX	PS4					v .		Agent Vari	able :								
Credentials :							*			able :								
Run with Highest Privileges :																		
Interact with Desktop :																		
Azure-Blob Storage	/0.1 Details -																	
Action :	delete-contai	ner					Y	1	Conta	ainer :	stonebrar	chpm2						
Useproxy :	No						*	1										
Loglevel :	DEBUG						*	1										
Azure Account :	Azure-Storag	e-Account	-Nils				*	1										
Connection Type :	Azure Accou	nt Key					*											
Runtime Directory :																		
																	0	0
Environment	Name								Valu	e								
Variables :								No	items to sh	now.								
																		1

Upload File - Action

The Action is used to upload a single or multiple files from a Windows or Linux server to an container or a folder in a container.

Field	Description
Action	Upload-file action
Connection Type	[Azure Account Key SAS Token]
	If set to 'Azure Account Key', the credential field 'Azure Account' will appear for configuration.

	If set to 'SAS Token', the credential field 'SAS Token' will appear for configuration.
Useproxy (default is NO)	[NO YES] If set to YES, the fields to set-up the proxy server connections are displayed: • Proxy Server IP or hostname • Proxy Server Port • Proxy Server Credentials (optional)
Loglevel (default is INFO)	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]
Sourcefile	Source file(s) to be uploaded to a bucket or specific folder in a container.
	Unix filename pattern are supported to upload a selection of files. Supported wildcards are: • ? matches any single character • [seq] matches any character in seq • [!seq] matches any character not in seq • "*" matches everything
Operation	[copy move] In case of a "move" the source file(s) is/are deleted after the upload to the container.
Prefix	A folder in a container is called prefix. In the field Prefix only the name of the folder needs to be provided no "/" after the folder name.
Upload Write Options	Upload Write Options [Do not overwrite existing Object Timestamp] Do not overwrite existing Object: Cancel the operations in case an object with a similar name exists Timestamp: Add a timestamp to the uploaded Object

Example for Azure Blob Storage Universal Tasks - Upload File

The following Task uploads from the Linux directory the files: /home/stonebranch/demo/azure/out/test[1-4]* to the the container stonebranchpm, folder incoming.

Blob Storage v0.1 T	ask Details: #2 Azure upload file(s) - Linux-New Azure SDK - Acco	unt		_
		Update 🛛 👼 Launch Tas	sk 🚡 View Parents 🕒 Copy 🕼 Delete 🔄 Refresh	💥 Clos
ure-Blob Storage v0.1	Task Variables Actions Virtual Resources	Mutually Exclusive	Instances S Triggers Notes Versions	
General ———				
Task Name :	#2 Azure upload file(s) - Linux-New Azure SDK - Account	Version :	21	
Task Description :				
Member of Business Services :	packaged_solutions_v7			~
Resolve Name Immediately :		Time Zone Preference :		
Hold on Start :				
Virtual Resource Priority :	10 👻	Hold Resources on Failure :		
Agent Details				
Cluster :				
Agent :	AGT_LINUX_PS4	Agent Variable :		
Credentials :	~	Credentials Variable :		
Run with Highest Privileges :				
Interact with Desktop :				
Azure-Blob Storage v	v0.1 Details			
Action :	upload-file	✓ Container :	stonebranchpm/incoming	
Sourcefile :	/home/stonebranch/demo/azure/out/test[1-4]*	Operation :	сору	~
Upload Write Options :	Do not overwrite existing object	*		
Useproxy :	No	¥		
Loglevel :	DEBUG	•		
Azure Account :	Azure-Storage-Account-Nils	3		
Connection Type :	Azure Account Key	*		
Runtime Directory :				
			٢	0
Environment	Name	Value		

Monitor Blob - Action

The Action is used to monitor a Blob in an Azure Container.

Field	Description	
Action	Monitor-Blob action	
Connection Type	[Azure Account Key SAS Token]	
	If set to 'Azure Account Key', the credential field 'Azure Account' will appear for configuration.	

	If set to 'SAS Token', the credential field 'SAS Token' will appear for configuration.
Useproxy (default is NO) [NO YES] If set to YES, the fields to set-up the proxy server connections are displayed: • Proxy Server IP or hostname • Proxy Server Port • Proxy Server Credentials (optional)	
Loglevel (default is INFO)	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]
Container	Container in which the objects should be monitored
Prefix	A folder in a container is called prefix. In the field Prefix only the name of the folder needs to be provided no "/" after the folder name. If a prefix is provided only objects in the folder with the prefix name are listed in the output.
Blob	Blob to monitor. The task goes to status success, if the Blob is found. Unix filename pattern are supported to list only a selection of files: Supported wildcards are: • ? matches any single character • [seq] matches any character in seq • [!seq] matches any character not in seq • "*" matches everything Example: Blob = test* : matches everything starting with test Blob = test[1-2].txt : matches test1.txt, test2.txt Blob = test[!1].txt: does not match test1.txt Blob = test?.txt: matches test1.txt, test2.txt etc.

Example for Azure Blob Storage Universal Tasks - Monitor Blob

The following Task monitors in the Container: stonebranchpm all Blob's starting with the name report. If a Blob starting with the name report is found the task goes to task status success.

			🛄 U	pdate 🛄 Copy 属	Launch Task 🚡 View Parents 🧃	🖞 Delete 🛛 🙀 Refresh 筹 C
Azure-Blob Storage	vo.1 Task	Variables	Actions	Virtual Resources	Mutually Exclusive	Instances
General						
Task Name :	#2a Azure Monite	or Blob - Linux-New	Azure SDK - Account	Version :	4	
Task Description :						
Member of Business Services :	Azure-Blob Samp	oles				
Resolve Name Immediately :				Time Zone Preference :	System Default	*
Hold on Start :						
Virtual Resource Priority :	10		-	Hold Resources on Failure :		
ana ana						
Agent Details						
Agent :	S{AGT_LINUX}			Agent Variable :	1	
Credentials :	stonebranch_os_	user_london	*	Credentials Variable :		
Run with Highest	Π					
Privileges : Interact with						
Desktop :						
Azure-Blob Storage vi	0.1 Details					
Action :	monitor-blob			Container :	stonebranchpm	
Blob :	report*					
Useproxy :	No					
Loglevel :	DEBUG		*	Azure Account :	Azure-Storage-Account-Nils	· · ·
Loglevel :	DEBUG		÷	Azure Account : Connection Type :	Azure-Storage-Account-Nils Azure Account Key	*

Azure Data Factory Integration

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Disclaimer

This download is designed as a template to be adapted to your environment. In some cases, templates will need to be changed to work with your current Universal Automation Center (UAC) setup. This download is free to use. However, the download is not supported, and no warranty is provided by Stonebranch for this document and the related download. The use of this document and the related download is at your own risk. Before using this download in a production system, please perform testing.

Stonebranch assumes no liability for any issues caused by the performance of this download.

Request Support:

Stonebranch offers paid support, by request, for select Universal Tasks. Paid support provides installation and on-going technical support. Universal Tasks that are eligible for paid support will be noted as "support eligible" within the Universal Task listing page. To learn more, please contact Stonebranch.

Introduction

This Integration allows Stonebranch users to schedule, trigger, and monitor the Azure Data Factory pipeline process directly from Universal Controller.

Overview

- This integration uses Python modules azure-mgmt-resource and azure-mgmt-datafactory to make REST-API calls to Azure Data Factory.
- This integration will use the Azure Tenant id , Subscription id , client id , client secret, Resource group, and location for authenticating the REST-API calls to Azure Data Factory.
- User can perform the following Azure Data Factory operations:
 - Run a Pipeline.
 - Get information on a Pipeline.

- List all Pipelines.
- Cancel Pipeline run.
- List factory by resource group.
- Also, with respect to Azure Data Factory triggers, users can perform the following operations from UAC:
 - Start Trigger.
 - Stop Trigger.
 - List Trigger by Factory.
- UAC also can restart a failed pipeline either from the failed step or from any activity name in the failed pipeline.

Software Requirements

This integration requires a Universal Agent and a Python runtime to execute the Universal Task against an Azure Data Factory.

Software Requirements for Universal Template and Universal Task

- Requires Python 3.4 or higher. Tested with the Universal Agent bundled Python distribution.
- Python modules required:
 - azure-mgmt-resource
 - azure-mgmt-datafactory

Software Requirements for Universal Agent

Either:

- Universal Agent for Windows x64 Version 6.6 and later with Python options installed.
- Universal Agent for Linux Version 6.6 and later with Python options installed.

Software Requirements for Universal Controller

• Universal Controller Version 6.6.0.0 and later.

Software Requirements for the Application to be Scheduled

This Universal Task has been tested with the Azure Data Factory Version 2.

Technical Considerations

- This integration uses the Python modules Azure resource Management Module and Azure Data Factory management to make REST-API calls with Azure Data Factory.
- Use Azure App Registration services to create an app, client ID, and client and associate it with Data Factory to provide appropriate roles (for example, Contributor).

Key Features

Feature	Description
Run a Pipeline	Execute a pipeline defined in Azure Data Factory. Schedule, trigger, and monitor the execution of a pipeline.

Get Information on a Pipeline	Get a information about the pipeline name .
List all Pipelines	List all pipelines that belongs to a Data Factory.
Cancel a Pipeline Run	Abort a Pipeline execution from UAC by providing the run ID for the Pipeline execution.
List Factory by resource group	List the available factory name that belongs to a resource group.
Start a Trigger	Start a trigger that will manage pipeline execution schedule in the Azure Data Factory.
Stop a Trigger	Stop a trigger that is in the Azure Data Factory.
List Trigger by Factory	List all the triggers that belongs to the Data Factory.

Import Azure Data Factory Integration Built-In Universal Template

To use the built-in Universal Template, you first must perform the following steps:

- 1. This Universal Task requires the Resolvable Credentials feature. Check that the Resolvable Credentials Permitted system property has been set to true.
- 2. Copy or Transfer the Universal Template file to a directory that can be accessed by the Universal Controller Tomcat user.
- 3. In the Universal Controller UI, select Configuration > Universal Templates to display the current list of Universal Templates.
- 4. Right-click any column header on the list to display an Action menu.
- 5. Select Import from the menu, enter the directory containing the Universal Template file(s) that you want to import, and click OK.

When the files have been imported successfully, the Universal Template will appear on the list.

Configure Azure Data Factory Integration Universal Task

For the new Universal Task type, create a new task, and enter the task-specific details that were created in the Universal Template.

Field Descriptions for Azure Data Factory Integration Universal Task

Field	Description	
Azure Location	Provide the Azure location.	
Tenant ID	Provide the Azure Tenant ID or Directory ID.	
Azure Client ID and Client Secret	Provide the Azure client ID and client secret (Client ID as user name and client secret as the password) - This comes from your Azure App registration services.	
Subscription	Azure Subscription ID.	
Azure Resource Group	Azure Resource group responsible for the Data Factory.	
Data factory Operation	Select the required Azure Data Factory function for the task.	
Data Factory Name	Provide the Azure Data Factory Name.	
Pipeline Name	Pipeline name that needs to be executed in Azure Data factory.	
Pipeline Parameters	Provide the pipeline run time parameters that needs to be passed for the pipeline execution.	
Run ID	Run id for the Azure Data Factory Pipeline execution - Required in case of a restart.	

Restart Pipeline	Check if the pipeline execution needs to be restarted for a failure.	
Start From Failure	Pipeline needs to be restarted from a Failure step.	
Start Activity Name	If Start from Failure is not checked, specify if a failed pipeline needs to be restarted from a specific activity.	
Run ID for Restart	Provide the Pipeline run ID for the restart.	
Trigger Name	Trigger Name in the Azure Data Factory.	
Polling	True for ARMPolling, False for no polling, or a polling object for personal polling strategy.	

Examples for Azure Data Factory Integration Universal Tasks

Run a Pipeline

Azure Location :	eastus2	Azure Tenant ID: 74496abe 9411-17-00 5524-pages 100005		
Azure Client ID & Client Secret :	azure client credentials	Azure		
Azure Resource Group :	UAC_data_factory	Datafactory Operation : Run a Pipeline		~
DataFactory Name :	datafactory-uacdemo	Pipeline Name : demo_az_process		
Pipeline Parameters :		Restart Pipeline :		
untime Directory :				
			٢	0
Environment	Name	Value		
Variables :		No items to show.		

Pipeline Execution Logs

Retri	Retrieve Output - Run-Azure-datafactory-Pipeline -Demo_AZ_Process					
3 OI	3 Output					
	Туре	Attempt	Output			
E	STDERR	1	2021-02-09 14:48:32,349 - INFO - Executing version 0.1 with the following paramaters 2021-02-09 14:48:32,350 - INFO - Namespace(azure_client_id='74344444444444444444444444444444444444			
177	STDOUT	1	{'additional_properties': {'id': '/SUBSCRIPTIONS/213703F7-2CCE-44FF-8E4C-4035EC2E11ED/RESOURCEGROUPS/UAC_DATA_FAC {'additional_properties': {'id': '/SUBSCRIPTIONS/213703F7-2CCE-44FF-8E4C-4035EC2E11ED/RESOURCEGROUPS/UAC_DATA_FAC			

Restart a Failed Pipeline Execution

Azure Location :	eastus2	Azure Tenant ID T	7-10-10-00-11-11-1
	azure client credentials	Azure Subscription ID :	2 - 19 - 19 - 19 - 19 - 19 - 19 - 19 - 1
Azure Resource Group :	UAC_data_factory	Datafactory Operation :	Run a Pipeline
DataFactory Name :	datafactory-uacdemo	Pipeline Name :	demo_az_process
Pipeline Parameters :	~	Restart Pipeline :	V
Start From Failure :		Start Activity Name :	
Run ID for Restart :	e1616448-6ae5-11eb-b70e-0ab2ef979c62		
Runtime Directory :			

Cancel a Pipeline Run

Azure DataFactory [Details		
Azure Location :	eastus2	Azure Tenant ID :	
Azure Client ID & Client Secret :	azure client credentials	Azure Subscription ID :	24272077.0
Azure Resource Group :	UAC_data_factory	Datafactory Operation :	Cancel Pipeline Run
DataFactory Name :	datafactory-uacdemo		
Run ID :	ee06466e-281e-11eb-a5bd-0ab2ef979c62		
Runtime Directory :			

Other Azure Data Factory Operation from UAC

Azure Location :	eastus2	Azure Tenant ID :		
Azure Client ID & Client Secret :	azure client credentials	Azure		
Azure Resource Group :	UAC_data_factory	Datafactory Operation :		
DataFactory Name :	datafactory-uacdemo	Pipeline Name :	Run a Pipeline Get a Pipeline info	
untime Directory :			List all Pipelines	
			List Factory by Resource Group	
Environment	Name	Value	Start Trigger Stop Trigger	
Variables :		No items to show.	List Trigger by Factory	

Document References

This document references the following documents:

Name	Location	Description
Universal Templates	https://docs.stonebranch.com/confluence/display/UC70/Universal+Templates	User documentation for creating Universal Templates in the Universal Controller user interface.
Universal Tasks	https://docs.stonebranch.com/confluence/display/UC69/Universal+Tasks	User documentation for creating Universal Tasks in the Universal Controller user interface.

Azure Logic Apps

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Introduction

This Universal Task can trigger and monitor the execution of Azure Logic workflows and retrieve the execution of Azure Logic workflow output. The Universal Controller integrates with Logic Apps through Rest-APIs securely through the Azure Oauth2.0 authentication mechanism.

Overview

- This task passes dynamic input parameters (JSON format) to each Azure Logic app workflow.
- The task triggers a workflow, monitors it until the process is completed, and then delivers the results to Universal Controller.
- Customers can manage and control Logic App workflow execution from Universal Controller, with the capability to employ other dependencies like time triggers or event-based jobs/workflows.
- This task offers ITSM integration capability, enabling the auto-creation of incidents in case of Logic Apps workflow execution failure.

Software Requirements

Software Requirements for Universal Template and Universal Task

Requires Python 3.6 or higher. Tested with the Universal Agent bundled Python distribution.

- Python modules required
 - requests
- UAC Global Variables should be set in order to run the UT properly.
 - Global variable: Azure_access_token to be set with Azure access token and this will be used to make the REST-API calls authenticated from universal controller to Azure logic apps
 - Azure_Access_token can be populated with new access token by setting up a web services task that can run periodically; for example, every hour.

Software Requirements for Universal Agent

- Universal Agent for Windows x64 Version 6.5 and later with python options installed
- Universal Agent for Linux Version 6.5 and later with python options installed

Software Requirements for Universal Controller

• Universal Controller Version 6.4.7.0 and later

Software Requirements for the Application to be Scheduled

This Universal Task can schedule and execute Azure Logic Apps workflows with API Version 2016-06-01.

Azure Logic apps

This Universal Task can trigger and monitor the execution of Azure Logic workflows and retrieve the execution of Azure Logic workflow output. The Universal Controller integrates with Logic Apps through Rest-APIs securely through the Azure Oauth2.0 authentication mechanism.

Key Features

Feature		Description
Workflow Trigge	er Run	Trigger a logic apps workflow in Azure, monitor the execution, and pull the output results to Universal Controller.

Import Azure Logic apps Built-In Universal Template

To use the built-in Universal Template, you first must perform the following steps:

- 1. This Universal Task requires the Resolvable Credentials feature. Check that the Resolvable Credentials Permitted system property has been set to true.
- 2. Copy or Transfer the Universal Template file to a directory that can be accessed by the Universal Controller Tomcat user.
- 3. In the Universal Controller UI, select Configuration > Universal Templates to display the current list of Universal Templates.

- 4. Right-click any column header on the list to display an Action menu.
- 5. Select Import from the menu, enter the directory containing the Universal Template file(s) that you want to import, and click OK.

When the files have been imported successfully, the Universal Template will appear on the list.

Configure Azure Logic apps Universal Task

For the new Universal Task type, create a new task, and enter the task-specific details that were created in the Universal Template.

Field Descriptions for Azure Logic apps Universal Task

Field	Description
Function	Select the function for logic apps.
subscription Id	Azure Subscription ID.
Api-version	Provide the api version for Azure API.
Trigger Name	Should be set to "Manual".
Workflow Name	Name of the Azure Logic Apps workflow.
Input Parameter	Run time input parameters(JSON) for the logic apps workflow.

Examples for Azure Logic apps Universal Tasks

Trigger a Azure Logic apps Workflow

Azure Logic Apps De	etails —					
Function :	Workflow Triggers - Run	*	Azure Credential :		~	
Logging Level :	Info	*	Request Format :	application/json		¥
Response format :	application/json	*	Azure Subscription id			
Resource group name :	Test_Resource_Group		Workflow name :	Logic_Apps_Demo		
Trigger name :	manual		API version :	2016-06-01		
Input Parameter (JSON) :	logicapps_inputparam	×				
Runtime Directory :						
					0	0
Environment	Name		Value			
Variables :			No items to show.			
						_

Destand	HTTP(S)/REST	1 al		
		*		
Authentication	None	*		
HTTP Version :	1.1	-10		
HTTP Method :	POST		Timeout	
URL :	https://login.microsoftonline.com/acc		e Stauth2/token	
				0
URL Query	Name		Value	
Parameters			No terms to show.	
HTTP Payload Type :	Form Data	62	MIME Type : application/x-www-form-utlencoded	
				0
	Name		Value	
	client_id		Real Property and	
Form Data :	redirect_un		https://localhost.8080	
	grant_type		refresh_token	
	client_secret		\${client_secret}	
	refresh_token		\$[Azure_vm_refresh_token)	

Oauth2.0 Webservices Task - Refresh Access Token

Webservices Task Actions to Assign New Access Token to Global Variable

0 Email Notifications							New	2		
O Email reconcations						1	New	1 21	E Fitter	Go To
1 Set Vanable							New	5	Updated IP	
	Details	Exit Codes	On Late Start	On Late Finish	On Early Finish	Natio	Value	1	Ravi	2019-1
Success name Set Variable Details	e Global e Uspalh_access_token		No	Na	No	Upath_access	token S(_res	poeseJsonPatri	Gokhan	2019-0
						1	Update	Delete	Refresh	Close
Set Variable										
- Action Criteria										
Status	Succese									- H
Exit Codes										
On Late Start	6									
On Late Finish /	10									
On Early Finish	0									
Description :										
Action Details										
Variable Scope :	Global			 System Not 	tification Operatio	in Success				120
Name ;	Upath_access_token									
	\$[_response.JsonPath('\$ access_tok	ueniji)								-

Document References

This document references the following documents:

Name	Location	Description
Universal Templates	https://docs.stonebranch.com/confluence/display/UC70/Universal+Templates	User documentation for creating Universal Templates in the Universal Controller user interface.
Universal Tasks	https://docs.stonebranch.com/confluence/display/UC70/Universal+Tasks	User documentation for creating Universal Tasks in the Universal Controller user interface.

Azure Virtual Machines Start-Stop-Terminate-Instance

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Introduction

This Universal Task enables users to utilize Azure Virtual Machine (VM) name, resource group, subscription ID, and access token as inputs for the start, stop, terminate, list, and check status of Azure VMs.

Overview

- · This task uses python requests module to interact with the Azure cloud platform.
- It expands user ability to start/stop/terminate/check/list Azure VMs that belong to a subscription and resource group.
- In Universal Controller (UC), this task reaches and stays in the success state until the Azure instance is completely started, stopped, or terminated.
- Scheduling this task in Universal Controller with the right dependencies set up would start and stop EC2 instances based on business needs using a UC workflow.
- This task helps to dynamically manage VM operations. It could potentially reduce the Azure VM running cost in the cloud.

Universal controller	1.start/stop/Terminate Azure VM	Azure
S stonebranch	2. Respond to Universal controller	Virtual
	3. Check Status /List Azure VM	machines

Software Requirements

This integration requires a Universal Agent and a Python runtime to execute the Universal Task against a Azure Virtual Machine.

Software Requirements for Universal Template and Universal Task

- Requires Python 3.6 or higher . Tested with the Universal Agent bundled Python distribution.
- Python modules required
 - requests
- UAC Global Variables with azure oauth2.0 access should be set in order to run the UT properly.
 - Create a global variable and set the value of that with the Azure access token and this will be used in job definition to make the REST-API calls authenticated from universal controller to Azure logic apps
 - Access token can be populated with a new access token by setting up a web services task that can run periodically; for example, every hour.

Software Requirements for Universal Agent

- Universal Agent for Windows x64 Version 6.5 and later with python options installed
- Universal Agent for Linux Version 6.5 and later with python options installed

Software Requirements for Universal Controller

• Universal Controller Version 6.4.7.0 and later

Software Requirements for the Application to be Scheduled

This Universal Task can schedule and execute Azure VM Operations with API Version 2019-12-01.

Technical Considerations

This task uses Azure Oauth2.0 access token for Azure API authentication. Users may need to use Universal Controller web services task to refresh the access token periodically.

Generate Access Token Using Sample webservice Task

eb Service Details				
	HTTP(S)REST	m.		
HTTP Authentication	None	4		
HTTP Version :	1.1	12		
HTTP Method :	POST	-	Timeout	
URL :	https://login.microsoftonline.com/acc	CONTRACTOR OF	1 Sauth2/token	
				0
URL Query	Name		Value	
Parameters			No items to show.	
HTTP Payload Type :	Form Data	8	MIME Type : application/x-www-form-unencoded	
				0
	Name		Value	
	client_id		the second se	
Form Data :	redirect_un		https://localhost.8060	
	grant_type		refresh_token	
	client_secret		\${client_secret}	
	refresh_token		\$[Azure_vm_refresh_token]	

Generated Access Token can be Stored in a Global Variable by Using the UAC Function for the Above webservices Task in Actions Set Variable

							-		00200	Ravi Murup
 0 Abort Actions 							New	2		
 0 Email Notifications 							New	1 2	Etter.	Go To.
vr i Sel Variable							New	112	Lipdated B	y Update
	e Details	Exit Codes	On Late Start	On Late Finish	On Early Finish	Name	Value	1	Ravi	2019-1
Success nam Set Variable Details	per Global ner Ulpath_access_token		No	No	No	Upath_access_1	oken S(_res	poese.iscnPam	Gokhab	2019-0
						R	Update	Delete	Refresh	Close
Set Variable										
- Action Criteria										_
Status	Succese									(H)
Exit Codes										
On Late Start	B									
On Late Finish	D									
On Early Finish	0									
Description										
Action Details										_
Variable Scope :	Global			- System No	trication Operation	on Success				120
Name :	Upath_access_token									
	\$[_responseJsonPath(\$ access_toker	n'))								_
Value										

Azure Virtual Machines Key Features

Feature	Description
Start VM	Starts an Azure Virtual Machine
Stop VM	Stop an Azure Virtual Machine
Terminate VM	Terminate an Azure Virtual Machine
VM status	Check the status of an Azure Virtual Machine
List All VM	List the Azure VM's belongs to a subscription & Resource group

Import AWS Virtual Machine Start-Stop-Terminate Instances Built-In Universal Template

To use the built-in Universal Template, you first must perform the following steps:

- 1. This Universal Task requires the Resolvable Credentials feature. Check that the Resolvable Credentials Permitted system property has been set to true.
- 2. Copy or Transfer the Universal Template file to a directory that can be accessed by the Universal Controller Tomcat user.
- 3. In the Universal Controller UI, select Configuration > Universal Templates to display the current list of Universal Templates.
- 4. Right-click any column header on the list to display an Action menu.
- 5. Select Import from the menu, enter the directory containing the Universal Template file(s) that you want to import, and click OK.

When the files have been imported successfully, the Universal Template will appear on the list.

Configure Azure Virtual Machine Start-Stop-Terminate Instances Universal Task

For the new Universal Task type, create a new task, and enter the task-specific details that were created in the Universal Template.

Field Descriptions for Azure Virtual Machine Start-Stop-Terminate Instances Universal Task

Field	Description
VM Function	Select the function to perform with the Azure VM , Either start or stop or terminate or check status or List VM's
Resource Group Name	Resource group name from the Azure Subscription
subscription Id	Azure Subscription ID
VM Name	Name of the Virtual Machine in Azure
Api-version	Api version in Azure
Access Token Variable	Bearer access that is store Universal controller global Variaböe

Examples for Azure Virtual Machine Start-Stop-Terminate Instances Universal Tasks

Starting an Azure Virtual Machine from Universal Controller

VM Function	Start VM	2	Resource Group Name :	VirtualMachine	
subscription Id :	A set of the set of the set		VM Name :		
Api-version :	2019-12-01		Access Token Variable :	Azure_vm_access_token	
Runtime Directory					
					0 0
Environment Variables	Name		Value		
			No items to show		
Exit Code Processing	Success Exitcode Range	1			
Exit Codes :	0				
Automatic Output Retrieval	Standard Output/Error	*			
Wait For Output	8		Failure Only :	8	
Start Line:	1		Number of Lines	100	
Scan Text ;					

List All Virtual Machines for an Azure Subscription

VM Function	List All VM	1	subscription Id :	and a second sec	
Api-version :	2019-12-01		Access Token Variable : Azun		
Runtime Directory					
					00
Environment	Name		Value		
Variables			No items to show		
Exit Code	Success Exitcode Range				
Exit Codes :					
	Standard Output/Error	(m)			
Wait For Output :	0		Failure Only		
Start Line	1		Number of Lines :	100	
Scan Text					

Document References

This document references the following documents:

Name	Location	Description
Universal Templates	https://docs.stonebranch.com/confluence/display/UC70/Universal+Templates	User documentation for creating Universal Templates in the Universal Controller user interface.
Universal Tasks	https://docs.stonebranch.com/confluence/display/UC70/Universal+Tasks	User documentation for creating Universal Tasks in the Universal Controller user interface.

Container File Monitoring

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Introduction

This Universal Task and associated Task Templates provides a dynamic File Monitoring and File Transfer solution for containerized applications running in any container management solution (for example: OpenShift, Kubernetes).

Overview

For containers running a Universal Agent, or for application pods with a sidecar container running a Universal Agent, the container file system can be dynamically monitored and files automatically transferred from the container file system.

- Dynamically creates and enables an Agent File Monitor Trigger each time specific containers are started.
- Transfer files from the containers.
- Cleanup Agent File Monitor Triggers each time specific containers are stopped.

Software Requirements

This solution-pack requires a Universal Agent and a Python runtime to execute the Universal Task.

Software Requirements for Universal Template and Universal Task

- Requires Python 3.6 or higher. Tested with the Universal Agent bundled Python distribution.
- Python modules required:
 - requests version 2.22.0

Software Requirements for Universal Agent

Either:

- Universal Agent for Windows x64 Version 7.0.0 and later with python options installed
- Universal Agent for Linux Version 7.0.0.0 and later with python options installed

Software Requirements for Universal Controller

• Universal Controller Version 7.0.0.0 and later

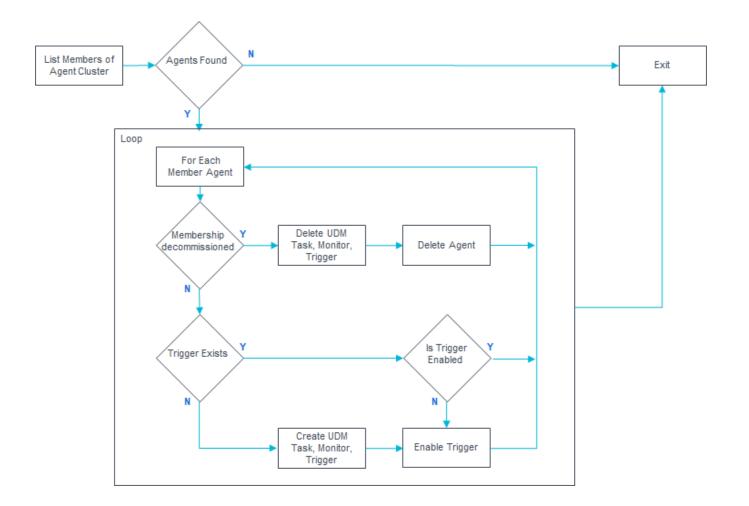
Software Requirements for the Application to be Scheduled

The requests Python module is used to make API call to a Universal Controller instance.

Solution-pack Description

Dynamic container File Monitoring and File Transfers can be achieved with this Universal Task and its associated Task Templates by simply configuring the containerized Universal Agents as Transient and ensuring that they register with a specific Agent Cluster.

Each time the Container File Monitor Universal Task runs, it lists the members of the specified Agent Cluster, and for each member Agent performs the functions detailed in the following flowchart.



Customers must make sure that the Universal Task is executed on a schedule that suits their requirements for how often they need to check whether new containerized Agents have been started or stopped.

This can be done by either:

- Simple Time Trigger based on the desired interval.
- Using a Recurring Task (requires Universal Controller 6.9.x or higher) to provide a loop function.

Import Universal Template

To use the Universal Template, you first must perform the following steps:

1. This Universal Task requires the Resolvable Credentials feature. Check that the Resolvable Credentials Permitted system property has been set to true.

- 2. Download the provided ZIP file.
- 3. In the Universal Controller UI, select Configuration > Universal Templates to display the current list of Universal Templates.
- 4. Click Import Template.
- 5. Select the template ZIP file and Import.

When the template has been imported successfully, the Universal Template will appear on the list. Refresh your Navigation Tree to see these tasks in the Automation Center Menu.

Configure Universal Task

Create a Container File Monitor Universal Task for each Agent Cluster.

Field Descriptions for Container File Monitoring Universal Task

Field	Description
Controller URL	Universal Controller URL; that is: https://localhost:8443/uc
Controller Credential	 Universal Controller Credential, specified user will need the following access rights: Read Access to the specified Agent Cluster Ability the delete the container Agents Ability to Create, Enable, Disable and Delete Agent File Monitors, File Transfer Tasks, and Agent File Monitor Triggers that are members of the Business Service specified in the Monitor Task Business Service field.
Monitor Task Business Service	Business Service required for the generated UDM File Transfer Task, Agent File Monitor Task, and Agent File Monitor Trigger definitions.
Agent Cluster Name	Agent Cluster to Monitor.
Container Path	Path on the Container to Monitor; that is /tmp/*.txt or /tmp. This value is passed to the template Agent File Monitor Task
Destination Agent Name	Destination Agent for the UD File Transfer. This value is used in the generated UDM File Transfer Task.
Destination Credential	Destination Credential for File Transfer. This value is used in the generated UDM File Transfer Task.
Destination Path	Destination Path for File Transfer. This value is used in the generated UDM File Transfer Task.

Example for Container File Monitoring Universal Tasks

Controller URL :	https://sbus08:8443/uc/			Controller Credential :	ccocksedge	• E
Monitor Task Business Service :	Container Management	•	9.			
Agent Cluster Name :	kubernetes servers	4	2	Container Path :	/tmp/*.logs	
Destination Agent Name :	SBUS08	•	2	Destination Credential :	demo_windows	- 🔍
Destination Path :	c:\container_downloads					
untime Directory :						
						0 0
Environment Variables :	Name			Value		
vanabico.				No items to show.		

Document References

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- Configure Databricks Integration Universal Task
- Field Descriptions for Databricks Universal Task
- Examples for Databricks Integration Universal Tasks
 - Run now Job
 - Run Submit Job
 - List Cluster
 - Upload Local File to DBFS
- Document References

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Introduction

This Universal Task allows Stonebranch users to perform end-to-end Orchestration and Automation of Jobs & Clusters in Databricks environment, either in AWS or Azure.

Overview

- This task will use the Databricks URL and the user bearer token to connect with the Databricks environment.
- Users can perform the following with respect to the Databricks jobs.
 - Create and list jobs
 - Get job details
 - Run now jobs
 - Run submit jobs

- Cancel run jobs
- Also with respect to Databricks clusters, this Universal Task can perform the following operations:
 - Create, start and restart a cluster
 - Terminate a cluster
 - Get a cluster info
 - List clusters
- With respect to Databricks DBFS, this Universal Task also provides a feature to upload larger files.

Software Requirements

This integration requires a Universal Agent and a Python runtime to execute the Universal Task against a Databricks environment.

Software Requirements for Universal Template and Universal Task

Requires Python 3.6 or higher. Tested with the Universal Agent bundled Python distribution.

- Python modules required
 - requests

Software Requirements for Universal Agent

- Universal Agent for Windows x64 Version 6.6 and later with Python options installed
- Universal Agent for Linux Version 6.6 and later with Python options installed

Software Requirements for Universal Controller

Universal Controller Version 6.6.0.0 and later

Software Requirements for the Application to be Scheduled

This Universal Task has been tested with the Azure Databricks environment -API version 2.0.

Technical Considerations

- This task uses Python modules requests to make REST-API calls to the Databricks environment.
- Databricks URL and user bearer token would be required as basic input for this Universal Task.
- Please refer to the Databricks API related to jobs and clusters in URL: https://docs.Databricks.com/dev-tools/api/latest/

Key Features

Feature	Description
Create Job	Create a job in a Databricks environment from Universal Controller. Here, a JSON input for job creation in Databricks environment will be used.

List jobs	List the jobs available within the Databricks environment.
Get Job details	Provides an existing job definition in Databricks by providing the job ID as input.
Run now Jobs	This feature helps to run an existing job in Databricks environment using the run time input parameters supplied in JSON from the universal task and the Universal Controller will be monitoring the execution of the job until it gets completed.
Run Submit jobs	This feature helps to run a job in Databricks environment that can be dynamically defined in JSON as an input parameter in the Universal Task and the Universal Controller will be monitoring the execution of the job until it gets completed.
Cancel Run job	Cancel a execution of job that is in running state within the Databricks environment.
Create Cluster	Create a cluster in Databricks environment. Input to be provided in the JSON in a script in this Universal Task.
List clusters	List the clusters available in the Databricks environment.
Start cluster	Start a cluster that is in stopped state in Databricks.
Restart cluster	Restart a cluster in the Databricks environment.
Terminate cluster	Terminate cluster in Databricks environment by providing cluster ID as input.
Get a Cluster info	Provides the definition of an existing cluster in Databricks environment in JSON.
Upload file to DBFS	Upload a file from local server to a Databricks file system DBFS.

Import Databricks Integration Built-In Universal Template

To use the built-in Universal Template, you first must perform the following steps:

- 1. This Universal Task requires the Resolvable Credentials feature. Check that the Resolvable Credentials Permitted system property has been set to true.
- 2. Copy or Transfer the Universal Template file to a directory that can be accessed by the Universal Controller Tomcat user.
- 3. In the Universal Controller UI, select Configuration > Universal Templates to display the current list of Universal Templates.
- 4. Right-click any column header on the list to display an Action menu.
- 5. Select Import from the menu, enter the directory containing the Universal Template file(s) that you want to import, and click OK.

When the files have been imported successfully, the Universal Template will appear on the list.

Configure Databricks Integration Universal Task

For the new Universal Task type, create a new task, and enter the task-specific details that were created in the Universal Template.

Field Descriptions for Databricks Universal Task

Field Description	
Databricks URL	Specify the Databricks URL.
Bearer Token	Provide the Databricks Personal token or the Azure AD token.

Databricks Function	Select a Function that would like to perform with Databricks.		
Create Request Script	eed the script for the new job creation or cluster in Databricks.		
Job ID	Provide the Databricks Job ID.		
Job Run Request	Specify the parameters for Jar or notebook or python or spark-submit or the Job submit run request.		
Run ID	Specify the Databricks Run ID.		
Cluster ID	Provide the cluster ID.		
Local file name	Local file name with path.		
DBFS file name	Provide the Databricks file path and name.		
overwrite	Specify if the uploaded files need to overwritten in DBFS.		

Examples for Databricks Integration Universal Tasks

Run now Job

 DataBricks Details - 					
	Ntos://add 80264343006640246.46 azuredatabrieke.net	Bearer Toke	n : Databricks_new	~	=
DataBricks Function :	Run Now Job 👻	Job Run Reque	st : scr_run_now-Databricks	*	
Runtime Directory :				O	
Environment	Name	Value			
Variables :	Environment				

Run Submit Job

Databricks URL : https://adb-76779		Bearer Token : Azu	ire_Databricks-d	emo-Token	× =
DataBricks Function : Runs Submit Jobs	s Runs Submit Jobs		Job Run Request : scr_databricks_job_001		*
ipt Details: scr_databricks_job_001					
		🔚 Update 🛃	Upload Script	Delete	🔄 Refresh 🐹 Clos
Script 🛛 😨 Tasks 👘 No	tes 🧧 Versions				
Details					
	scr_databricks_job_001		Version :	10	
Description :	demo_create_job	-			
Script Type :	Data	Resolve UA	C Variables : 🔽	1	
	<pre>{ "name": "SparkPi Python job111", "new_cluster": { "spark_version": "7.3.x-scala2.1 "node_type_id": "Standard_D3_v2" "num_workers": 2 }, "spark_python_task": { "python_file": "dbfs:/pi.py", "parameters": [} } </pre>	2",			

List Cluster

Databricks URL :	https://adb-8826434306640216.16.azu	uredatabricks.net	Bearer Token : Databricks_new	*
DataBricks Function :	List Cluster		v	
Runtime Directory :				
				0 (
Environment	Name		Value	
Variables :			No items to show.	
			No items to show.	
			NO ITEMS TO SHOW.	
esult Processing D	etails		NO REITIS LO SINOW.	
esult Processing D Exit Code				
-	etails Success Output Contains	v	Output Type : Standard Error	×
Exit Code Processing :		×		~
Exit Code Processing : Scan Output For :	Success Output Contains	~		×
Exit Code Processing : Scan Output For :	Success Output Contains UAC-Demo ==>RUNNING Standard Output/Error			~
Exit Code Processing : Scan Output For : Automatic Output Retrieval :	Success Output Contains UAC-Demo ==>RUNNING Standard Output/Error			~

Upload Local File to DBFS

 DataBricks Details – 			
Databricks URL :	https://adb-8826434306640216.16.azuredatabricks.net	Bearer Token	: Databricks_new
DataBricks Function :	Upload local file to dbfs		
Local file name :	/home/ravi/sap_extract.txt	DBFS file name	: /FileStore/shared_uploads/ravi.murugesan@stonebranch.com/
overwrite :			
Runtime Directory :			
			o 😔
Environment	Name	Value	
Variables :		No items to show.	

Document References

This document references the following documents:

Name	Location	Description
Universal Templates	https://docs.stonebranch.com/confluence/display/UC70/Universal+Templates	User documentation for creating Universal Templates in the Universal Controller user interface.
Universal Tasks	https://docs.stonebranch.com/confluence/display/UC70/Universal+Tasks	User documentation for creating Universal Tasks in the Universal Controller user interface.

GitHub

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- Naming Conventions
- Examples for GitHub Universal Tasks
 - Export Universal Objects from UAC to GitHub
 - Import Universal Objects from GitHub to UAC
 - Export Universal Objects from UAC to Script
 - Import Universal Objects from Script to UAC
 - JSON Script that Defines Universal Template SQL

Disclaimer

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Request Support:

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Introduction

This Universal Task allows you to perform server operations, such as importing/exporting Universal Automation Center objects and integrating with GitHub; for example, you could import a new Universal Template from GitHub into your Universal Controller.

It also allows you to import/export Universal Automation Center objects using the Universal Controller script library.

Software Requirements

Software Requirements for Universal Agent and Universal Controller

- Universal Agent for Linux or Windows Version 6.9.0.0 or later are required.
- For Universal Agent 6.9.0.0, the PyGitHub python module must be installed.

Software Requirements for Universal Controller

• Universal Controller 6.9.0.0 or later.

Software Requirements for the Application to be Scheduled

• A GitHub Account with a GitHub token is required,

A GitHub token can be created under GitHub / Settings / Developer settings / Personal access tokens

Universal Task for GitHub Details

Import	Import any Universal Controller objects such as tasks, calendar, scripts, and trigger from GitHub into Universal Controller; for example, import a new Universal Template in the Marketplace from GitHub to Universal Controller.
Import	Import any Universal Controller object such as Universal Template, tasks, calendar, scripts, and triggers from a script file into Universal Controller; for example, no Internet connection from Universal Controller to GitHub is supported.
Export	Export any Universal Controller object such as tasks, calendar, scripts, and triggers to GitHub from Universal Controller; for example, export a Universal Template to a GitHub repository.
Export	Export any Universal Controller object such as tasks, calendar, scripts, and triggers to a script object, so that the content of the script later can be used to import it on a Controller without needing the UAC import functionality.
Supp ort	Support Stonebranch SaaS Universal Controller and on-premise Universal Controller customers.

Import GitHub Built-In Universal Template

To use the built-in Universal Template, you first must perform the following steps:

- 1. This Universal Task requires the Resolvable Credentials feature. Check that the Resolvable Credentials Permitted system property has been set to true.
- 2. Copy or Transfer the Universal Template file to a directory that can be accessed by the Universal Controller Tomcat user.
- 3. In the Universal Controller UI, select Configuration > Universal Templates to display the current list of Universal Templates.
- 4. Right-click any column header on the list to display an Action menu.
- 5. Select Import from the menu, enter the directory containing the Universal Template file(s) that you want to import, and click OK.

When the files have been imported successfully, the Universal Template will appear on the list.

Configure GitHub Universal Task

For the new Universal Task type, create a new task, and enter the task-specific details that were created in the Universal Template.

Field Descriptions for the GitHub Integration Universal Task

Field	Description
Universal	Universal Controller URL; for example,
Controller URL	Local Universal Controller:
	http://192.168.88.10:8080/uc/ Stonebranch SaaS Cloud Universal Controller:
	https://superstore.stonebranchdev.cloud/
Universal Controller Credentials	Credentials of the Universal Controller Webservice API
Loglevel	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]
UAC Base URL	The REST API URL for UAC.
	for example, http://192.168.88.40:8080/uc
UAC REST Credentials	The REST API credentials for UAC.
Operation Type	Operation Type can be one of the following:
	 From UAC to GitHub This operation gets the universal object information from UAC and sends it into GitHub repository. See Export Universal Objects from UAC to GitHub. From GitHub to UAC This operation gets the universal object information from GitHub repository and sends it into UAC. It either creates these or updates the already existing ones. See Import Universal Objects from GitHub to UAC. UAC_to_Script This operation gets the universal object information from UAC and exports it into a UAC script object, so that later the content of the script can be used to import it on a Controller without needing to the UAC import functionality. See Export Universal Objects from UAC to Script. Script_to_UAC This operation gets the universal object information from UAC script and sends it into UAC. It either creates these or updates the already existing ones. See Import Universal Objects from GitHub to UAC.
Object Type	Object Types in UAC:
	[agent agentcluster businessservice calendar customday credential databaseconnection emailconnection peoplesoftconnection sapconnection task trigger script virtual variable universaltemplate]
Object Sub Type	The type of the selected object.
	Refer to Task Types in the Product Documentation; for example, For Object Type tasks: Workflow, Timer, Windows, Linux/Unix, z/OS,
Business Services	Comma Separated List of Business Services
GitHub Base URL	Should be filled in order to use local/own/private GitHub server. For GitHub please leave empty.
GitHub Token	Connection token for GitHub. Can be generated under GitHub / Settings / Developer settings / Personal access tokens
Repository Path	GitHub repository ; for example, stonebranch-marketplace/ut-sql-tasks
	used to:
	 Export Universal Package to GitHub Import Universal Package from GitHub

Branch	Branch name ; for example, main, development
Task Folder Name	Folder name of the task to be put under the Branch; for example, export
Change Message	Commit definition.
	\${ops_execution_user}_\${ops_agent_name}_app.version_%s_\${ops_launch_time}_change_ is added in front of the message; for example,
	if Change Message field left empty:
	nbuer_AGT_LINUX_PS4_app.version_1.3_2021-01-20 10:25:48 +0000_change_
	if Change Message field = "dev"
	nbuer_AGT_LINUX_PS4_app.version_1.3_2021-01-20 10:25:48 +0000_change_dev

Naming Conventions

The naming of the objects that are exported to a GitHub are as follows:

<Object Name>.<Object Type>.<Object Sub Type>.json

;for example, AWS Task.task.SAP.json

If there is no Object Sub Type, then:

;for example, AWS Task.universaltemplate.json

Examples for GitHub Universal Tasks

Export Universal Objects from UAC to GitHub

The following task exports the Universal Template SQL from Universal Controller to the main branch of the GitHub repository: stonebranch-marketplace/ut-sql-tasks; folder: export

Hub UAC Object Conne	ctor Task C	Jetails: GitHub L	UAC Object Con	nector - Uploa	nd - nils							1
					📙 Upr	date 🛛 🔁 Launch Ta	sk 🚡 View F	arents	Сору	Delete	S Refresh	💥 CI
SitHub UAC Object Conn	ector Task	Variables	Actions	Virtual	Resources	Mutually Exclusive	Instance	s Ti	riggers	Notes	 Versions 	5
General												_
Task Name :	GitHub UA	C Object Conn	ector - Upload			Version :		8				
Task Description :	Import/Exp	oort from/to GitH	Hub all UAC Ob	jects								
Member of Business Services :							-					¥
Resolve Name Immediately :						Time Zone Preference :	- System Defa	ault			~	
Hold on Start :												
Virtual Resource Priority :	10			×	1	Hold Resources on Failure :						
Agent Details												_
Cluster :	10											
Agent :	\${AGT_LI	NUX_PS4}				Agent Variable :	V					
Credentials :					*	Credentials Variable :						
Run with Highest Privileges :												
Interact with Desktop :												
GitHub UAC Object	Connector	Details —										
UAC Base URL :	https://ps2	stonebranchde	ev.cloud			UAC REST Credentials :	UAC_REST_C	RED				
Change Message :												
GitHub Base URL :						GitHub Token :	Github Token	nils			1	
Repository Path :	stonebran	ch-marketplace	/ut-sql-tasks			Branch :	main					
Folder Name :	export					Operation Type :	From UAC to	SitHub				*
Object Name :	SQL					Object Type :	universaltemp	late				Y
Object Sub Type :						Business Services :						
Loglevel :	DEBUG				×							

Import Universal Objects from GitHub to UAC

The following Task imports the universal template SQL from the main branch of the GitHub repository: stonebranch-marketplace/ut-sql-tasks; folder export

Hub Task Details: GitH	ub UAC Object Connector - Import			8
	PP Up	date 🗔 Launch Ta	sk 🚡 View Parents 🛅 Copy 💣 Delet	te 👍 Refresh 🎇 Cl
SitHub Task Vari	ables Actions Virtual Resources Mutually Exclusive	e 🧧 Instances	Triggers Notes 🤮 Versions	
General				
Task Name :	GitHub UAC Object Connector - Import	Version :	13	
Task Description :	Import/Export from/to GitHub all UAC Objects			
Member of Business Services :				×
Resolve Name Immediately :		Time Zone Preference :	System Default	*
Hold on Start :				
Virtual Resource Priority :	10	Hold Resources on Failure :		
Agent Details				
Cluster :	E.			
Agent :	\${AGT_LINUX_PS4}	Agent Variable :		
Credentials :	×	Credentials Variable :		
Run with Highest Privileges :	0			
Interact with Desktop :				
GitHub Details				
UAC Base URL :	https://ps2.stonebranchdev.cloud	UAC REST Credentials :	UAC_REST_CRED	× 5
Change Message :				
GitHub Base URL :		GitHub Token :	Github Token - nils	× 500
Repository Path :	stonebranch-marketplace/ut-sql-tasks	Branch :	main	
Folder Name :	export	Operation Type :	From GitHub to UAC	*
Object Name :	SQL	Object Type :	universaltemplate	*
Object Sub Type :		Business Services :		
Loglevel :	DEBUG			

Export Universal Objects from UAC to Script

This task gets the object for the Universal Template "Informatica Cloud" from UAC and exports it into a UAC script object with the same name, so that later the content of the script can be used to import it on a Controller without needing the UAC import functionality.

lub UAC Object Conne	ctor Task D	etails: GitHub	UAC Obje	ct Connect	tor - UAC t	o script										-
						. U	pdate 🗔 Laund	h Task	The View Pa	rents	Сор	y 🚮 D	elete	4 Refre	sh 🕽	C C
itHub UAC Object Conn	ector Task	Variables	A A	ctions	Virtual F	Resources	Mutually Excl	usive	Instances		Triggers	N	otes	• Vers	ions	
General				_						_				_		_
Task Name :	GitHub UA	C Object Conr	nector - U	AC to scrip	t		Vers	ion :	18	3						
Task Description :	Import/Exp	ort from/to Git	Hub all U	AC Objects												
Member of Business Services :															-	¥
Resolve Name Immediately :							Time 2 Prefere	2one	System Defau	ult				~		
Hold on Start :	Second Second															
Virtual Resource Priority :	10				*		Hold Resource Fail	son I	3							
Agent Details																_
Cluster :																
Agent :	\${AGT_LIN	UX_PS4}					Agent Varia	ble :	7							
Credentials :						*	Creder	tials								
Run with Highest Privileges :																
Interact with Desktop :																
GitHub UAC Object (Connector (Details														
UAC Base URL :	https://ps2	stonebranchd	ev.cloud				UAC R Credent	EST u	AC_REST_CF	RED					Y	-
Operation Type :	UAC_to_S	cript				~	Object Na	me : Ir	nformatica Clou	bu					*	
Object Type :	universalte	mplate				٣	Object Sub T	ype :								
Business Services :							Logie	vel : D	EBUG							v

Import Universal Objects from Script to UAC

The following task imports the Universal Template as defined in the JSON script named SQL.

Hub UAC Object Conne	ector Task I	Details: GitHub	UAC Object Con	inector - Im	port from Scr	ipt - nils - script						-
					8	Update 🛛 Launch Ta	ask 🧃	🔂 View Parent	s 🛄 Copy	/ 🏦 Delete	t Refresh	🐹 CI
GitHub UAC Object Conn	nector Task	Variables	Actions	Virte	ual Resources	Mutually Exclusive		Instances	Triggers	Notes	Versions	5
- General		_		_								_
Task Name :	GitHub UA	AC Object Conr	ector - Import fr	rom Script		Version :		5				
Task Description :	Import/Exp	port from/to Git	Hub all UAC Ob	jects								
Member of Business Services :												*
Resolve Name Immediately :						Time Zone Preference :	Sy	vstem Default			×	
Hold on Start :												
Virtual Resource Priority :	10				Y	Hold Resources on Failure :						
Agent Details												_
Cluster :												
Agent :	\${AGT_LI	NUX_PS4}				Agent Variable :	V					
Credentials :					~	Credentials Variable						
Run with Highest Privileges :												
Interact with Desktop :												
- GitHub UAC Object (Connector	Details —										
UAC Base URL :	https://ps2	2.stonebranchd	ev.cloud			UAC REST Credentials :	UAC	C_REST_CRED			2	
Operation Type :	Script_to_	UAC			1	Object Name :	SOL				2	
Object Type :	universalt	emplate				Object Sub Type :						
Business Services :						Loglevel :	DEB	BUG				*

JSON Script that Defines Universal Template SQL

Script Name :	SQL		Version : 1	
Description :	Universal Template JSON expo	ort for the SQL Task		
Script Type :	Data	Resolve UAC Va	ariables :	
Content :	"agentType": "Any", "agentVar": null, "automaticOutputRet "broadcastCluster": "broadcastClusterva "createConsole": fa "credentialFieldsRe "credentials": null "credentials": null "credentials": null "description": "vl. "desktopInteract": "elevateUser": fals "environment": [], "environment"; aba	null, tion": "No Restriction", "null, ur": null, urs, striction": "No Restriction", null, 20", false, se, lesFieldsRestriction": "No Restriction ull, ": "Success Exitcode Range", FieldsRestriction": "No Restriction"	20 "	

Google BigQuery

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Introduction

This Universal Task allows Stonebranch users to schedule, trigger, monitor, and orchestrate the Google BigQuery process directly from Universal Controller.

Overview

- This task uses Python modules google-cloud-bigquery and google-auth to make REST-API calls to Google BigQuery
- This task will use the GCP Project ID, BigQuery SQL or Schema, Dataset ID, Job ID, Location, Table ID, Cloud Storage URI, and Source File Format as parameters of BigQuery function, and GCP KeyFile (API KEY) of Service account for authenticating the REST-API calls to Google BigQuery.

- User can perform the following Google BigQuery operations:
 - BigQuery SQL
 - List dataset
 - · List tables in dataset
 - View job information
 - Create a dataset
 - Load local file to a table
 - Load cloud storage data to a table
 - Export table data

Software Requirements

This Universal Task requires a Universal Agent and a Python runtime to execute the Universal Task against a Google BigQuery data warehouse.

Software Requirements for Universal Template and Universal Task

- Requires Python 3.4 or higher. Tested with the Universal Agent bundled Python distribution.
- Python modules required:
 - google-cloud-bigquery
 - google-auth

Software Requirements for Universal Agent

Either:

- Universal Agent for Windows x64 Version 6.6 and later with Python options installed.
- Universal Agent for Linux Version 6.6 and later with Python options installed.

Software Requirements for Universal Controller

• Universal Controller Version 6.6.0.0 and later.

Software Requirements for the Application to be Scheduled

This Universal Task has been tested with the Google BigQuery data warehouse.

Technical Considerations

- This Universal Task uses the Python modules Google auth and Google BigQuery management to make REST-API calls with Google BigQuery
- Create a service account in your GCP identity management

Key Features

Feature Description

BigQuery SQL	Runs a BigQuery SQL query and returns query results.
List dataset	Lists all existing datasets in a particular project.
List tables in dataset	List tables in a particular dataset.
View job information	Retrieve the information of a job for a given job ID.
Create a dataset	Create a dataset within a project.
Load local file to a table	Load a local file to a BigQuery table.
Load cloud storage data to a table	Load a file form cloud storage to BigQuery table.
Export table data	Export table to cloud storage bucket.

Import Google BigQuery Integration Built-In Universal Template

To use the built-in Universal Template, you first must perform the following steps:

- 1. This Universal Task requires the Resolvable Credentials feature. Check that the Resolvable Credentials Permitted system property has been set to true.
- 2. Copy or Transfer the Universal Template file to a directory that can be accessed by the Universal Controller Tomcat user.
- 3. In the Universal Controller UI, select Configuration > Universal Templates to display the current list of Universal Templates.
- 4. Right-click any column header on the list to display an Action menu.
- 5. Select Import from the menu, enter the directory containing the Universal Template file(s) that you want to import, and click OK.

When the files have been imported successfully, the Universal Template will appear on the list.

Configure Google BigQuery Integration Universal Task

For the new Universal Task type, create a new task, and enter the task-specific details that were created in the Universal Template.

Field Descriptions for Google BigQuery Integration Universal Task

Field	Description
GCP Project ID	Provide Google Cloud Platform (GCP) project ID.
GCP KeyFile (API KEY) Service account	Provide Google Cloud Platform Service account authentication key in JSON format.
Select a BigQuery Function	Select a function for execution in GCP.
BigQuery SQL or Schema	Provide BigQuery SQL or schema as applicable for function to load data either from cloud or local storage.
Dataset ID	Provide GCP Dataset ID (name of the dataset) - Must be alphanumeric.
Job ID	Provide BigQuery Job ID.
Location	Provide GCP BigQuery location.
Table ID	Provide table ID(Name of the table where the file needs to be loaded).

Cloud Storage URI	Provide URI for the cloud storage.
Source File Format	Provide source file format for the data load in to table.
Local File Path	Provide local file path for the data load in to a table.
Header Row to Skip	Provide an integer indicating the number of header rows in the source data.
Schema Auto Detect	Option to enable schema auto detection when loading data applicable only for JSON and CSV format.

Examples for Google BigQuery Integration Universal Tasks

BigQuery SQL

GCP Project ID :		GCP KeyFile (API KEY) - Service Account :	*
Select a BigQuery Function	BigQuery SQL	BigQuery SQL Or schema	2
Runtime Directory			
			0 0
Environment Variables	Name	Value	
invironment variables.		No items to show.	

List dataset

P L L J L L L L L L L L L L L L L L L L		GCP KeyFile (API KEY) - Greatery ap-recyclone Service Account : Greatery ap-recyclone	*
Select a BigQuery Function	List Dataset	*	
Runtime Directory			
			0 0
Environment Variables	Name	Value	
Environment vanables		No items to show	

List Tables in dataset

		GCP KeyFile (API KEY) - Service Account :	bigquant ani kojujean	× 5
Select a BigQuery Function	List Tables in a dataset	e Dataset ID :	serviceorder	
Runtime Directory				
				Q Q
Environment Variables	Name	Value		
environment valiables		No items to show.		

View Job Information

GCP-BigQuery Details -					
GCP Project ID :		GCP KeyFil Serv	e (API KEY) - ice Account :	bigguage ani kovison.	×
Select a BigQuery Function :	View Job Information	~	Job ID :	e28c4a4b-3634-40d9-848b-9e601a420c17	
Location :	asia-south1				
Runtime Directory :					
					o ()
	Name		Value		
Environment Variables :		No items	to show.		

Create a dataset

		GCP KeyFile (API KEY) - Service Account :	v 11
Select a BigQuery Function	Create a Dataset	Dataset ID : serviceorder	
Location :	asia-south1		
Runtime Directory			
			0 0
Environment Variables	Name	Value	
invitantient vanaules		No items to show.	

Load Local File to a Table

GCP Project ID :			GCP KeyFile (API KEY) - Service Account :	And the second	*
Select a BigQuery Function	Load Local file to a table	×	BigQuery SQL Or schema		~
Dataset ID :	: serviceorder		Local File Path :	Annual and EHPS_file.com	
Source File Format	CSV	*	Table ID :	demo_table	
Header Row to Skip	1		Schema Auto Detect		
Runtime Directory					
					0
nvironment Variables	Name		Value		
nvironment vanabies.			No items to show.		

Load Cloud Storage Data to a Table

GCP Project ID	: protess allow 2010-14	G	Service Account :	and description of the second s	*
Select a BigQuery Function	Load Cloud Storage data to a Table	•	BigQuery SQL Or schema		*
Dataset ID	: serviceorder		Cloud Storage URI :	gentland group due to EVDO general	
Source File Format	csv	*	Table ID :	demo_table	
Header Row to Skip	1		Schema Auto Detect	(V)	
Runtime Directory					
					0 6
Environment Variables	Name		Value		
Environment variables			No items to show		

Export Table Data

GCP Project ID :		GCP KeyFile (API) Service Acc	KEY) - aggeery aprilley.jook	× .
Select a BigQuery Function	Export Table Data		et ID : serviceorder	
Location :	US	Tab	le ID : demo_table	
Destination Bucket Name :	load_so_data-1	Destination File N	ame : demo_table.csv	
Runtime Directory				
				0 6
	Name	Value		
Environment Variables :		No items to show	6	

Document References

This document references the following documents:

Name	Location	Description
Universal Templates	https://docs.stonebranch.com/confluence/display/UC70/Universal+Templates	User documentation for creating Universal Templates in the Universal Controller user interface.
Universal Tasks	https://docs.stonebranch.com/confluence/display/UC70/Universal+Tasks	User documentation for creating Universal Tasks in the Universal Controller user interface.

Informatica Cloud

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Request Support:

Stonebranch offers paid support, by request, for select Universal Tasks. Paid support provides installation and on-going technical support. Universal Tasks that are eligible for paid support will be noted as "support eligible" within the Universal Task listing page. To learn more, please contact Stonebranch.

Overview

This Universal Task allows users to schedule any Data Integration Task or Linear Taskflow in the Informatica Cloud.

All communication is Web-Service based using the latest Informatica REST API version 2 & 3 with support for folders.

Log-files including activity-, session- and error-log are available from the Universal Controller Web UI in the same way as from the Informatica Monitoring Console.

Software Requirements

Software Requirements for Universal Agent

• Universal Agent for Linux or Windows Version 6.9.0.0 or later is required.

Software Requirements for Universal Controller

- Universal Controller 6.9.0.0 or later.
- Universal Controller license key with support for SAP Connector is required.

Software Requirements for the Application to be Scheduled

In order to connect to the SAP System, the SAP NetWeaver RFC SDK 7.50 libraries are required from SAP.

Those can be downloaded from the SAP Software Download: SAP NetWeaver RFC SDK 7.50.

Technical Considerations

- Start a data integration task in Informatica Cloud.
- Support for folder by using latest REST API version 3.
- Automatic Retrieval of Activity, Session and Error-log *.
- Supported task types for Data Integration:
 - Masking Task
 - Replication Task
 - Synchronization Task
 - Mapping Task
 - PowerCenter Task
 - Linear Taskflow
- Integrate the Informatica Task in any scheduling workflow.

The Error-log is retrieved only for Tasks. For workflows, the error message is provided.

Import Informatica Cloud Built-In Universal Template

To use the built-in Universal Template, you first must perform the following steps:

- 1. This Universal Task requires the Resolvable Credentials feature. Check that the Resolvable Credentials Permitted system property has been set to true.
- 2. Copy or Transfer the Universal Template file to a directory that can be accessed by the Universal Controller Tomcat user.
- 3. In the Universal Controller UI, select Configuration > Universal Templates to display the current list of Universal Templates.
- 4. Right-click any column header on the list to display an Action menu.
- 5. Select Import from the menu, enter the directory containing the Universal Template file(s) that you want to import, and click OK.

When the files have been imported successfully, the Universal Template will appear on the list.

Configure Informatica Cloud Universal Task

For the new Universal Task type, create a new task, and enter the task-specific details that were created in the Universal Template.

Field Descriptions for Informatica Cloud Universal Task

Field	Description
Informatica URL	Endpoint URL of the Informatica Cloud Rest API; for example, endpoint URL of the Informatica SaaS API:
	https://dm-us.informaticacloud.com/saas
Informatica Credentials	Informatica credentials for basic authentication with username and password.
Task Type	The following Task Types are available for selection:
	[Masking Task Replication Task Synchronization Task Mapping Task PowerCenter Task Linear Taskflow]
Path	<path>/<taskname> (path is optional)</taskname></path>
	Path and name of the task to start in Informatica Cloud; for example, stonebranch/dataload2 starts the task dataload2 in the folder stonebranch
Print Activity Log	Prints the Activity Log to the Output of the Task Instance. For an example refer to Activity Log screenshot.
	Note: The Error Log always will be printed to the Output of the Task Instance.
Print Session Log	Prints the Session Log to the Output of the Task Instance.
	Note: The Error Log always will be printed to the Output of the Task Instance.
Useproxy (default is NO)	[NO YES]
	If set to YES, the fields to set-up the proxy server connections are displayed:
	Proxy Server IP or hostname
	 Proxy Server Port Proxy Server Credentials (optional)
Universal Controller URL	Universal Controller URL.
Universal Controller URL	
	URL has no backslash "/" at the end.
	Example: http://192.168.88.10:8080/uc
Universal Controller Credentials	Universal Controller Credential.s
	The Credentials must have "Web Service Access" Permissions.
Poll Interval (s)	Task Polling Interval in seconds; for example, a Poll Interval of 60 means that every 60 seconds, the Informatica Cloud will we queried if the started task has been finished.
Loglevel (default is INFO)	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]

Example

The following screen shows an example of an Informatica Cloud Universal Task, which will start the Synchronization task dataload2 in the folder stonebranch.

The Task will print the Session Log and Activity Log into the Output of the task instance.

Informatica Cloud Universal Task

formatica Cloud Task D	etails: dataload2					
		📰 U	pdate 🛛 🔁 Launch Ta	sk 📑 View Parents 🛅 Cop	oy 📺 Delete 👍 Refresh 🄰	Clos
Informatica Cloud Task	Variables Actions	Virtual Resources Mutual	ly Exclusive 🧧 Insta	nces Triggers Note	es Versions	
General				A	and the second s	
Task Name :	dataload2		Version :	8		
Task Description :						
Member of Business Services :						~
Resolve Name Immediately :			Time Zone Preference :	System Default	~	
Hold on Start :	terms .					
Virtual Resource Priority :	10	~	Hold Resources on Failure :			
Agent Details						
Cluster :						
Agent :	\${AGT_LINUX_PS4}		Agent Variable :			
Credentials :		¥ .	Credentials Variable :			
Run with Highest Privileges :			- vanabie.			
Interact with Desktop :						
- Informatica Cloud D	etails					
Informatica URL :	https://dm-us.informaticacloud	d.com/saas				
Informatica Credentials :	informatica_nils	*	Task Type :	Synchronization task		~
Loglevel :	INFO	~	Path :	stonebranch/dataload2		
Poll Interval (s) :	10		Print Activity Log :	V		
Universal Controller URL :	https://ps2.stonebranchdev.cl	loud	Universal Controller Credentials :	CRED-REST-API-PS2	~	Ξ
	https://ps2.stonebranchdev.cl	loud				

Log Files

The Activity Log and Session Log will be provided if the corresponding Flags (Print Session Log, Print Activity Log) are set in the Universal Task.

The Error Log always will be printed to the Output of the Task Instance.

Activity Log

out Details						
				Delete	😫 Refresh	💢 Close
Output						
Type :	STDERR	Attempt :	1			
Output :	"successTargetRows": 6, "startedBy": "nils.buer@s "runContextType": "REST_4 "entries": [{ "@type": "activif "id": "936823547' "type": "DSS", "objectName": "My "runId": 100, "agentId": "00800 "runtimeEnvironme "startTime": "202	ry", LUX", D000000006", ', TO4:25:23.000Z", 4:25:27.000Z", -31T09:25:23.000Z", LT09:25:27.000Z", stonebranch.com", API_V2", tyLogEntry", ', y_Customer_target_2",				

Session Log

				Delete	4 Refresh	X Close
Output						
Туре	STDERR	Attempt :	1			
Output	2020-12-31 09:25:34,392 - INF 2020-12-31 09:25:34,392 - INF 2020-12-31 09:25:23 **** Impor 12/31/2020 09:25:23 **** Impor 12/31/2020 09:25:23 **** Impor 12/31/2020 09:25:23 **** Impor 2/31/2020 09:25:23 **** Impor (Warning> : The Error Log (Warning> : The Error Log (Warning> : The Error Log (Warning> : The Error Log (Warning> : The Error Log / Validating Target Definiti 12/31/2020 09:25:23 **** Impor Validating transformations of Validating mapping variable(s) 12/31/2020 09:25:23 **** Impor (Warning> : The value ent (Warning> : The value ent (Warning> : Invalid value Successfully extracted session DIRECTOR> VAR_27028 [2020-12-3 DIRECTOR> VAR_27028 [2020-12-3] DIRECTOR> VAR_27028 [2020-12-3] DIRECTOR> VAR_27028 [2020-12-3] DIRECTOR> TM_6684 [2020-12-3] DIRECTOR> TM_6684 [2020-12-3] DIRECTOR> TM_6684 [2020-12-3] DIRECTOR> TM_6685 [2020-12-3] DIRECTOR> TM_6686 [2020-12-3]	0 - ##### session log for 0 - 12/31/2020 09:25:23 ** ting Connection: TargConn, ting Source Definition: M ting SessionConfig: cfg_s, DB Connection value shou a for attribute Error Log on My_Customer_target_2. ting Mapping: m_dss_0135GF 0100 ting Workflow: wf_dss_013 sered is not a valid integ No for attribute Fail ta instance [s_dss_0135GF0I000 1 09:25:23.385] Warming! 1 09:25:23.385] Use overr 1 09:25:23.385] Server Name 09:25:23.385] Server Name 09:25:23.385] Server Name 09:25:23.385] Server Name 09:25:23.385] Server Name 09:25:23.385] Server Name	<pre>task : datalo *** Importing _O135GF0B00000 y_Customer_sou y_Customer_tar _dss_0135GF0I0 ld have Relati DB Connection F0I0000000006 SGF0I0000000000 er. SGF0I00000000000 er. file [/data2/ Cannot find se ide value [str ide</pre>	ad2, runID Connection 0000004 rce_2 get_2 000000000000 onal: as th . will use 6 time. will starting home/cldagg home/cldagg ction for uss_0135GF0 _to_date(' ss_0135GF0 ss_0135GF0 ss_0135GF0 sitory] 1000000000000000000000000000000000000	100 and 1 SrcConn_C the prefix. the defaul use the defaul use the defaul use the defaul vorklet [wf 10000000000 2020-12-31 10000000000 100000000000000000000000	og Id: 135GF(t valu sfault seque ent/at _dss_(_06_0_e ,'%7-9 09:05 006_12_ 006] a1 stance

Error Log

				📑 Delete 📑 Refresh 🂢 C
Output				
	Type :	STDERR	Attempt :	2
		2020-12-31 09:31:27,704 - INFO - Error 2020-12-31 09:31:27,705 - INFO - ##### 2020-12-31 09:31:27,705 - INFO - "firs "Peter" "Peter" "111" "0421636133	Error log for task: da tName"."customerName"."	tadelete-with-error, runId: 40 ar customerNumber"."phone"."lastName
C	Output :	"Peter","Peter Meyer","111","0421636133 "John","John Smith","222","04216333220" "Nils","Nils Buer","333","042163613320" "Pete","Pete Mey","444","04316361330","	,"Buer","ERROR: Target	table [My_Customer_target] has n

Informatica PowerCenter

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 - Action Type: startWorkflow
 - Action Type: startWorkflowFromTask
- Verify Workflow execution in Informatica PowerCenter Workflow Monitor
 - How to Look Up a Workflow Instance in PC

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Overview

This Universal Task allows users to schedule Informatica PowerCenter Workflows and Tasks, including retrieval of the workflow and session log.

It also is possible to start a Workflow from a certain task onwards.

The Universal Task schedules Informatica PowerCenter via the Informatica PowerCenter Web Services Hub; therefore, no installation on any Informatica Informatica system is required.

Software Requirements

Software Requirements for Universal Agent

Universal Agent for Linux or Windows Version 6.9.0.0 or later is required.

Software Requirements for Universal Controller

• Universal Controller 6.9.0.0 or later.

Software Requirements for the Application to be Scheduled

- The Universal Task has been tested for PowerCenter 10.1.0.
- The Informatica PowerCenter Web Services Hub needs to be started in Informatica PowerCenter Administrator.

Technical Considerations

- This task It is based on the standard Informatica PowerCenter Web Services Hub using SOAP protocol.
- The Informatica PowerCenter Web Services Hub Interface is called from a Universal Agent running on a Linux Server or Windows Server.
- Start a Task in an Informatica PowerCenter Workflow.
- Start an Informatica PowerCenter Workflow.
- Start an Informatica PowerCenter Workflow from a given Task onwards.
- Different log-levels can be selected for example, Info and debug.
- The Workflow log is always provided.
- Http and Https connections are support (Note: the host certificate is not verified).

Import Informatica PowerCenter Built-In Universal Template

To use the built-in Universal Template, you first must perform the following steps:

- 1. This Universal Task requires the Resolvable Credentials feature. Check that the Resolvable Credentials Permitted system property has been set to true.
- 2. Copy or Transfer the Universal Template file to a directory that can be accessed by the Universal Controller Tomcat user.
- 3. In the Universal Controller UI, select Configuration > Universal Templates to display the current list of Universal Templates.
- 4. Right-click any column header on the list to display an Action menu.
- 5. Select Import from the menu, enter the directory containing the Universal Template file(s) that you want to import, and click OK.

When the files have been imported successfully, the Universal Template will appear on the list.

Configure Informatica PowerCenter Universal Task

For the new Universal Task type, create a new task, and enter the task-specific details that were created in the Universal Template.

Field Descriptions for Informatica PowerCenter Universal Task

Field	Description	
Loglevel	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL].	
Agent	The Universal Agent, which runs the Python request module to call the PC "startWorkflow" SOAP Webservice.	
	Both Linux and Windows Universal Agents are supported.	
Repositoryname	Name of the Repository to log in to.	
usernamespace	The security domain of the user account used to log in to the repository.	

	Required if there is more than one security domain in the Informatica PowerCenter domain.		
Domainname	Domain name for the Integration Service.		
Foldername	Name of the folder containing the workflow.		
requestmode	Indicates the recovery strategy for the session task: NORMAL : Restarts a session without recovery. RECOVERY : Recovers a session. 		
Informatica Credentials	Credentials for Informatica PowerCenter.		
IS Servicename	Name of the Integration Service that runs the workflow.		
workflowname	Name of the workflow to run.		
Action	The following Actions can be selected:		
	startWorkflow startTask startWorkflowFromTask startWorkflow: Start a Task in an Informatica PowerCenter Workflow startTask: Start an Informatica PowerCenter Workflow startWorkflowFromTask: Start an Informatica PowerCenter Workflow from a given Task onwards Refer to Examples for an example screenshot of each action.		
TaskinstancePath	Name and Path of the Task to start in the Workflow.		
Get Session Log	If enabled, the Session Log of the Taskname provided in the Field Get Session Log for Task is written to the taskinstance Output.		
	Note: In case of a Workflow with multiple task, only the session log of the task provided under the field taskinstancePath is written to the taskinstance Output.		
Get Session Log for Task	The field is only visible if the choice field Get Session Log is enabled.		
	Name and Path of the Task for which the session log should be retrieved.		
Timeout	Maximum amount of time the Web Services Hub can take to process a request and generate a SOAP response before the request times out.		
	If the Web Services Hub is unable to generate a response within the timeout period, it sends a fault message to the web service client and drops the connection.		
	Default is 180 seconds. Minimum value is 60 seconds.		
	If the operation does not complete within the timeout period, the operation fails.		
Hostname	Web Services Hub host name.		
Port	Web Services Hub port number.		
SSL	Choose if you want to connect via http or https to your webservice hub.		
	In the Power Center Administration GUI, you can look up the configuration by clicking on the webservice hub.		
	For example,		
	 http://walldorf:7333/wsh https://walldorf:10333/wsh 		

Action Type: startTask

nformatica-powercente	er Task Det	ails: Informat	lica PowerC	Center # Star		-						-
			÷		15		ate 🗔 Launch Ta					
t-informatica-powercent	er Task	Variables	Actio	ons	/irtual Resources	5	Mutually Exclusive	Instances	Triggers	Note	s 🔹 🔹 Versio	ns
General												
Task Name :	Informatio	a PowerCen	ter # Start 7	Task			Version :		6			
Task Description :	Task: load	d_customer_c	data3									
Member of Business Services :												٣
Resolve Name Immediately :							Time Zone Preference :	System D	efault		*	
Hold on Start :	to and the second se											
Virtual Resource Priority :	10				*		Hold Resources on Failure :					
Agent Details												
Cluster :												
Agent :	supersna	ke				1	Agent Variable					
Credentials :							Credentials Variable					
Run with Highest Privileges							vanabie .					
Interact with Desktop :												
ut-informatica-power	center De	tails										_
repositoryname :	REPO_S	VC					Port :	7333				
domainname :	WALLDO	RF					Informatica Credentials :	informatica				*
usernamespace :							IS servicename :	int_svc				
foldername :	stonebrar	ich					workflowname :	wf_newcuste	omer2			
requestmode :	NORMAL					*	timeout :		60			
Hostname :	walldorf						loglevel	INFO				-
ssl :	No					*						
	startTask	_				Y	Task Instance Path ;					

Action Type: startWorkflow

formatica-powercente	er Task Details: Informatica PowerCenter # Start Workflow				-
				k 🔒 View Parents 🖺 Copy 👔	
t-informatica-powercent	er Task Variables Actions Virtual Resol	urces Mutu	ally Exclusive	Instances Triggers	Notes Versions
General			_		
Task Name :	Informatica PowerCenter # Start Workflow		Version :	9	
Task Description :	WF: wf_newcustomer				
Member of Business Services :					Ý
Resolve Name Immediately :			Time Zone Preference :	System Default	~
Hold on Start :					
Virtual Resource Priority :	10 💌	Hole	d Resources on Failure :		
Agent Details					
Cluster					
Agent :	supersnake	4	Agent Variable :		
Credentials :		*	Credentials Variable :		
Run with Highest Privileges :					
Interact with Desktop					
ut-informatica-power	center Details				
repositoryname :	REPO_SVC		Port :	7333	
domainname :			Informatica Credentials :	informatica	*
usernamespace :		IS	servicename :	int_svc	
foldername :	stonebranch	w	orkflowname :	wf_newcustomer2	
requestmode :	NORMAL	*	timeout :	60	
Hostname :	walldorf		loglevel ;	INFO	~
ssl :	No	¥			
Get Session Log :	V	Get	Session Log for Task :	load_customer_data3	
Action :	startWorkflow	4			

Action Type: startWorkflowFromTask

The following Task starts an Informatica PowerCenter Workflow from a specific Task onwards

nformatica-powercent	er Task Details: Informatic	a PowerCenter # Start V	Vorkflow from Ta	sk					
			🕞 t	Jpdate 🔀 Launch Ta	sk 🔠 View Parent	s 🛄 Copy	/ 🚮 Delete	Sefresh	n 💢 Clo
t-informatica-powercent	er Task Variables	Actions Virt	ual Resources	Mutually Exclusive	Instances	Triggers	Notes	Versions	
- General									-
Task Name :	Informatica PowerCenter	# Start Workflow from	Task	Version	3				- 1
Task Description :	WF: wf_newcustomer								
Member of Business Services									*
Resolve Name Immediately				Time Zone Preference	System Default			*	
Hold on Start :	hanned to be a set of the set of								
Virtual Resource Priority	10		*	Hold Resources on Failure					
- Agent Details									-
Cluster :									
Agent :	supersnake		*	Agent Variable					
Credentials :			~	Credentials Variable					
Run with Highest Privileges :									
Interact with Desktop									4
ut-informatica-power	center Details								-
repositoryname :	REPO_SVC			Port :	7333				
domainname :				Informatica Credentials :	informatica				*
usernamespace :				IS servicename :					
foldername :	stonebranch			workflowname :	wf_newcustomer2				
requestmode :	NORMAL			• timeout :	60				
Hostname :	walldorf			loglevel	INFO				*
ssl :	No			~					
Get Session Log ;				Get Session Log for Task	load_customer_dat	a3			
Action :	startWorkflowFromTask			 Task Instance Path : 	load_customer_dat	a2			

Verify Workflow execution in Informatica PowerCenter Workflow Monitor

The following provides to non-Informatica PowerCenter Consultants with an Introduction on how to verify that a Workflow, which was started via the Universal Task for Informatica PowerCenter, has been successfully executed in PC.

How to Look Up a Workflow Instance in PC

1. Log-in to the Informatica PowerCenter Workflow Monitor.

۵	Informatica PowerCenter Workflow Monitor
Repository Edit View	ools Task Filters Help Image: Solar state Image: Solar state </th
REPO_SVC	Workflow Run Start Time
<u>위</u>	Connect to Repository
Connect to Rep Repository:	REPO_SVC Cancel
Username:	Administrator Help More >>
Password:	Connect

2. Select your Workflow.

Browse to your Workflowname. In the following example, the Workflow is named: wf_newcustomer. On the right side of the screen, you can see all executed instances including their status; for example, Succeeded.

8	Info	matica PowerC	enter Workflow Monit	tor	-	
Repository Edit View Too	ıls Task Filters Help	5 0	🍸 🋂 🔹 1 Hour	v 🖆 🍕 🖏		
Repositories	Workflow Run		Start Time	Completion Time	Status	^
REPO_SVC C int_svc C	Close		09.02202109.52.09 08.02202114.55.27 08.02202114.54.27 08.02202114.54.27 08.02202111.51.47 08.02202111.51.47 08.02202111.51.47 08.02202111.46.35 08.02202111.46.35 08.02202111.46.35	09.02.2021 09.52.14 08.02.2021 14.55.35 08.02.2021 14.55.33 08.02.2021 14.55.33 08.02.2021 11.51.52 08.02.2021 11.51.52 08.02.2021 11.54.57 08.02.2021 11.46.57 08.02.2021 11.46.59 08.02.2021 11.45.28 08.02.2021 11.36.50	Succeeded Succeeded Succeeded Succeeded Succeeded Succeeded Succeeded Succeeded	Ĭ
Gantt Chart 1	Cold Start					
Connected to the reposit (int_svc 09.02.2021 10:2 Integration Service int_s (int_svc 09.02.2021 10:2	Schedule	t_svc				^
WR_000 00.02.2021 10.2	Go to Gantt Chart Get Workflow Log					
Ready	Show History Names Get Run Properties					< III >

3. Verify the Workflow Log Right-clicking on the workflow will allow you to *Get the Workflow Log.*

Save As	Copy Find	Refresh			
Severity	Timestamp /	Node	Thread	Message Co	Message
NFO	09.02.2021 09:52:09	node01	4584	LM_36435	Starting execution of workflow [wf_newcustomer] in folder [stonebranch] last saved by user [Administrator].
NFO	09.02.2021 09:52:09	node01	4584	LM_44206	Workflow wf_newcustomer started with run id [107], run instance name [], run type [Concurrent Run Disabled].
NFO	09.02.2021 09:52:09	node01	4584	LM_44195	Workflow [wf_newcustomer] service level [SLPriority:5,SLDispatchWaitTime:1800].
NFO	09.02.2021 09:52:09	node01	4584	LM_44253	Workflow started. Clients will be notified
NFO	09.02.2021 09:52:09	node01	4584	LM_36330	Start task instance [Start_wf_newcustomer]: Execution started.
NFO	09.02.2021 09:52:09	node01	4584	LM_36318	Start task instance [Start_wf_newcustomer]: Execution succeeded.
NFO	09.02.2021 09:52:09	node01	4584	LM_36505	Link [Start_wf_newcustomer> load_customer_data]: empty expression string,
lode: nod [hread: 4 Process I	1p: 09.02.2021 09:52:09 e01 584				

Note: The same Workflow log information is also available in the Universal Task Output.

4. Verify the Workflow Log in Universal Automation Center

All Log Information shown in the Informatica PowerCenter Workflow Monitor also is available in the Universal Controller Web-GUI in the Task Instance screen and Output.

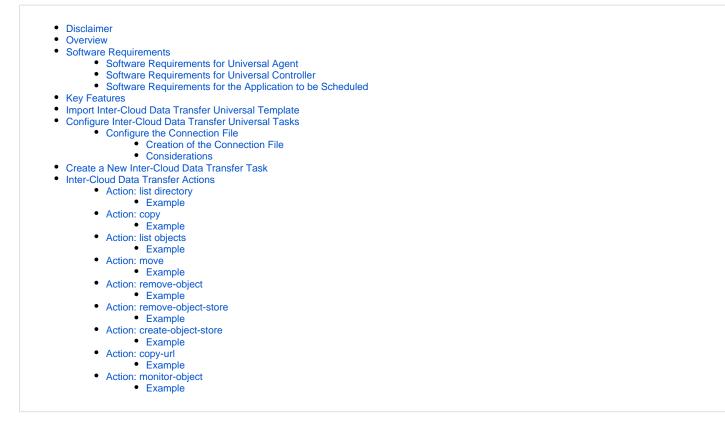
The following screenshot shows the Task Instance Screen:

			E Herista	Re-run • 1 Retrieve Output an Delete 🔯 Refres	h 10 c
nformatica PowerCenter	Task Instance Virtual Resources	Exclusive Requests	Output No		
General					
	Informatica_startworkflow wf_newcusto	mer - LX	Instance Number	69	
Task	Informatica Start Workflow	E	Invoked By	Manually Launched	-
Launch Source	Launch Task / User Interface	-			
Task Description	Starts the Workflow wf_newcustomer in	PC			_
Member of			Execution User	ops admin	
Business Services	System Default		Time Zone		
Virtual Resource		1.1	Preference Hold Resources on		
Priority	10	*	Failure		
Status -					_
	Success		Exit Code :	0	
Status Description					
Operational Memo					
Trigger Time			Launch Time	2021-02-09 09 51 38 +0100	
Queued Time :	2021-02-09 09:51:38 +0100				
Start Time :	2021-02-09 09:51:38 +0100		End Time	2021-02-09 09-51:47 +0100	
Duration :	8 Seconds		CPU Time :	280	
Process ID	4130				
Agent Details					
Cluster :	8				
Agent :	supersnake		Agent Variable		
Credentials .		1.00	Credentials Variable		
Run with Highest	E.				
Privileges Interact with					
Desktop :					
Informatica PowerGe	enter Details				
repositoryname	REPO_SVC			7333	
domainname	WALLDORF		Informatica Credentials	informatica	*
usemamespace :			15 servicename :		
foldername :	stonebranch		workflowname :	wf_newcustomer	
requestmode	NORMAL		* timeout :	60	
Hostname	walldorf		loglevel	INFO	~
ssi	No		r .		
Get Session Log	(T)		Action	startWorkflow	(M.)

The following screen shows the Log file in the Task Instance Output Screen:

		1.00 - 1.00 - 11	
		Delete	# Refresh 🐹 Clos
Output			
Ту	pe STDERR Attempt 2		
Outp	INFO: Mon Feb 08 11:51:47 2021 [LM_44206]: 10616 workflow wf_newcustomer_starfee INFO: Mon Feb 08 11:51:47 2021 [LM_44235]: 10616 workflow twf_newcustomer_starfee INFO: Mon Feb 08 11:51:47 2021 [LM_44235]: 10616 Workflow twf_newcustomer_starfee INFO: Mon Feb 08 11:51:47 2021 [LM_44235]: 10616 Start task instance [Start_wf_ INFO: Mon Feb 08 11:51:47 2021 [LM_36318]: 10616 Start task instance [Start_wf_ INFO: Mon Feb 08 11:51:47 2021 [LM_36308]: 10616 Start task instance [Start_wf_ INFO: Mon Feb 08 11:51:47 2021 [LM_36308]: 10616 Start task instance [Start_wf_ INFO: Mon Feb 08 11:51:47 2021 [LM_36308]: 10616 Start task instance [Ioad_cut INFO: Mon Feb 08 11:51:47 2021 [LM_36638]: 10616 Session task instance [Ioad_cut INFO: Mon Feb 08 11:51:47 2021 [LM_36648]: 10620 Session task instance [Ioad_cut INFO: Mon Feb 08 11:51:49 2021 [LM_36648]: 10620 Session task instance [Ioad_cut INFO: Mon Feb 08 11:51:49 2021 [LM_36648]: 10620 Session task instance [Ioad_cut INFO: Mon Feb 08 11:51:49 2021 [LM_36648]: 10620 Session task instance [Ioad_cut INFO: Mon Feb 08 11:51:49 2021 [LM_36648]: 10620 Session task instance [Ioad_cut INFO: Mon Feb 08 11:51:49 2021 [LM_36648]: 10620 Session task instance [Ioad_cut INFO: Mon Feb 08 11:51:49 2021 [LM_36648]: 10620 Session task instance [Ioad_cut INFO: Mon Feb 08 11:51:49 2021 [LM_36648]: 10620 Session task instance [Ioad_cut INFO: Mon Feb 08 11:51:49 2021 [LM_36648]: 10620 Session task instance [Ioad_cut INFO: Mon Feb 08 11:51:49 2021 [LM_36648]: 10620 Session task instance [Ioad_cut INFO: Mon Feb 08 11:51:49 2021 [LM_36648]: 10620 Session task instance [Ioad_cut INFO: Mon Feb 08 11:51:49 2021 [LM_36648]: 10620 Session task instance [Ioad_cut INFO: Mon Feb 08 11:51:49 2021 [LM_36648]: 10620 Session task instance [Ioad_cut INFO: Mon Feb 08 11:51:49 2021 [LM_36648]: 10620 Session task instance [Ioad_cut INFO: Mon Feb 08 11:51:49 2021 [LM_36648]: 10620 Session task instance [Ioad_cut INFO: Mon Feb 08 11:51:49 2021 [LM_36648]: 10620 Session task instance [Ioad_cut INFO: Mon Feb 08 11:51	ice level [Suri be notified newcustomer]: gt: load.cust stomer_data	Priority:5,5LD1 Execution star Execution succ mer_detal: emp started a proc Execution star [TM_6793 Fetc [DIS_20305 T [PFIL_2036 B [TM_6722 Fin1] [TM_6722 Fin1] [TM_6720 Fin2] [TM_6720 Fin2] [TM_6720 Fin2] [TM_6720 F

Inter-Cloud Data Transfer



Disclaimer

This download is designed as a template to be adapted to your environment. In some cases, templates will need to be changed to work with your current Universal Automation Center (UAC) setup. This download is free to use. However, the download is not supported, and no warranty is provided by Stonebranch for this document and the related download. The use of this document and the related download is at your own risk. Before using this download in a production system, please perform testing.

Stonebranch assumes no liability for any issues caused by the performance of this download.

Request Support:

Stonebranch offers paid support, by request, for select Universal Tasks. Paid support provides installation and on-going technical support. Universal Tasks that are eligible for paid support will be noted as "support eligible" within the Universal Task listing page. To learn more, please contact Stonebranch.

Overview

The Inter-Cloud Data Transfer integration allows you to transfer data to, from, and between any of the major private and public cloud providers like AWS, Google Cloud, and Microsoft Azure.

It also supports the transfer of data to and from a Hadoop Distributed File System (HDFS) and to major cloud applications like OneDrive and SharePoint.

An advantage of using the Inter-Cloud Data Transfer integration over other approaches is that data is streamed from one object store to another without the need for intermediate storage.

Integrations with this solution package include:

- AWS S3
- Google Cloud
- Sharepoint
- Dropbox
- OneDrive
- Hadoop Distributed File Storage (HDFS)

Software Requirements

Software Requirements for Universal Agent

- Universal Agent for Linux or Windows Version 7.0.0.0 or later is required.
- Universal Agent needs to be installed with python option (--python yes).

Software Requirements for Universal Controller

• Universal Controller 7.0.0.0 or later.

Software Requirements for the Application to be Scheduled

- Rclone: v1.55.1 or higher needs to be installed on server where the Universal Agent is installed.
- Rclone can be installed on Windows and Linux
- To install Rclone on Linux systems, run:

curl https://rclone.org/install.sh | sudo bash

Note: If the URL is not reachable from your server, the Linux installation can also be done from pre-compiled binary.

• To install Rclone on Linux system from a pre-compiled binary

Fetch and unpack

```
curl -0 <https://downloads.rclone.org/rclone-current-linux-amd64.zip>
unzip rclone-current-linux-amd64.zip
cd rclone-*-linux-amd64
```

Copy binary file

sudo cp rclone /usr/bin/ sudo chown root:root /usr/bin/rclone sudo chmod 755 /usr/bin/rclone Install manpage

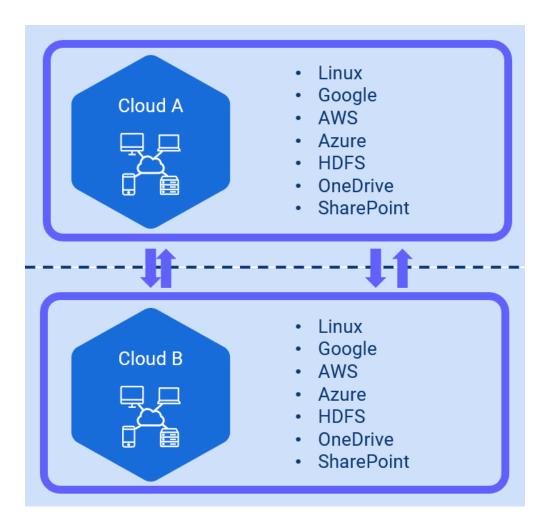
```
sudo mkdir -p /usr/local/share/man/manl
sudo cp rclone.1 /usr/local/share/man/manl/
sudo mandb
```

- To install Rclone on Windows systems:
 - Rclone is a Go program and comes as a single binary file.
 - Download the relevant binary here.
 - Extract the rclone or rclone.exe binary from the archive into a folder, which is in the windows path

Key Features

Some details about the Inter-Cloud Data Transfer Task:

- Transfer data to, from, and between any cloud provider
- Transfer between any major storage applications like SharePoint or Dropbox
- Transfer data to and from a Hadoop File System (HDFS)
- Data is streamed from one object store to another (no intermediate storage)
- Very Fast, if the object stores are in the same region
- · Preserves always timestamps and verifies checksums
- Supports encryption, caching, compression, chunking
- Perform Dry-runs
- Regular Expression based include/exclude filter rules
- Supported actions are:
 - List objects, List directory,
 - Copy/ Move
 - Remove object / object store
 - Perform Dry-runs
 - Monitor object
 - Copy URL



Import Inter-Cloud Data Transfer Universal Template

To use the built-in Universal Template, you first must perform the following steps:

- 1. This Universal Task requires the Resolvable Credentials feature. Check that the Resolvable Credentials Permitted system property has been set to true.
- 2. Copy or Transfer the Universal Template file to a directory that can be accessed by the Universal Controller Tomcat user.
- 3. In the Universal Controller UI, select Configuration > Universal Templates to display the current list of Universal Templates.
- 4. Right-click any column header on the list to display an Action menu.
- 5. Select Import from the menu, enter the directory containing the Universal Template file(s) that you want to import, and click OK.

When the files have been imported successfully, the Universal Template will appear on the list.

Configure Inter-Cloud Data Transfer Universal Tasks

To configure a new Inter-Cloud Data Transfer there are two steps required:

- 1. Configure the connection file
- 2. Create a new Inter-Cloud Data Transfer Task

Configure the Connection File

In the connection file, configure all required Parameters and Credentials to connect to the Source and Target Cloud Storage System; for example, if you want to transfer a file from AWS S3 to Azure Blob Storage, you must configure the connection Parameters for AWS S3 and Azure Blob Storage.

The connection file must be saved in the Universal Controller script library; for example, cloud2cloud.conf

Creation of the Connection File

The connection can be created manually by taking the sample connection file cloud2cloud.conf as template or interactively using the rclone config tool: rclone config.

If you do not want to show, in clear text, secret keys and password in the connection file, a Universal Controller credential could be used in the script. For example, if you want to encrypt the amazon s3 secret_access_key, you could set up a Universal Controller credential: AWS_SECRET_ACCESS_KEY_<D050320> and reference this credential in the script:

```
secret_access_key = ${_credentialPwd('AWS_SECRET_ACCESS_KEY_D050320')}
```

Considerations

Rclone supports connections to almost any storage system on the market:

Overview of Cloud Storage Systems

However, the current Universal Task has only been tested for the following storage types:

- LINUX
- AWS S3
- Azure Blob Storage
- Google GCS
- Microsoft One Drive incl. Share Point
- HDFS
- HTTPS URL

Note

If you want to connect to a different system, (for example, Dropbox), you should test this before taking it to production.

Create a New Inter-Cloud Data Transfer Task

For Universal Task Inter-Cloud Data Transfer, create a new task and enter the task-specific Details that were created in the Universal Template.

The following Actions are supported:

Action	Description
list directory	List directories; for example, List object stores like S3 buckets, Azure container. List OS directories from Linux, Windows, HDFS.
сору	Copy objects from source to target.
list objects	List objects in an OS directory or cloud object store.
move	Move objects from source to target.
remove-object	Remove objects in an OS directory or cloud object store.
remove-object-store	Remove an OS directory or cloud object store.
create-object-store	Create an OS directory or cloud object store.
copy-url	Download a URL's content and copy it to the destination without saving it in temporary storage.
monitor-object	Monitor a file or object in an OS directory or cloud object store.

In the following for each task action, the fields will be described and an example is provided.

Inter-Cloud Data Transfer Actions

Action: list directory

Field	Description
Agent	Linux or Windows Universal Agent to execute the Rclone command line.
Agent Cluster	Optional Agent Cluster for load balancing.
Action	[list directory, copy, list objects, move, remove-object, remove-object-store, create-object-store, copy-url, monitor-object]
	list directories; for example,
	 List object stores like S3 buckets, Azure container. List OS directories from Linux, Windows, HDFS.
Storage	Enter a storage Type name as defined in the Connection File; for example,
Туре	amazon_s3, microsoft_azure_blob_storage, hdfs, onedrive, linux
	For a list of all possible storage types, refer to Overview of Cloud Storage Systems.
Connection File	In the connection file you configure all required Parameters and Credentials to connect to the Source and Target Cloud Storage System ; for example, if you want to transfer a file from AWS S3 to Azure Blob Storage, you must configure the connection Parameters for AWS S3 and Azure Blob Storage.
	For details on how to configure the Connection File, refer to section Configure the Connection File.

UAC Rest Credentials	Universal Controller Rest API Credentials
UAC Base URL	Universal Controller URL; for example, https://192.168.88.40/uc
Loglevel	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]

The following example list all aws s3 buckets in the AWS account configured in the cloud2cloud.conf file.

Inter-Cloud-Data-Tra				idate 🛄 Copy 🗔	Launch Task 🚡 View Parents	Delete 📑 Refres	sh 👗 Clo
Inter-cloud-bata-m	ansfer Task	Variables	Actions	Virtual Resources	Mutually Exclusive	Instances	4 1
General							
Task Name :	list buckets in S3	account		Version :	4		
Task Description :	#A1 lists the avail	lable OS or object st	orage directories				
Member of Business Services							*
Resolve Name Immediately :				Time Zone Preference :	- System Default -	•	
Hold on Start :							
Virtual Resource Priority :	10		•	Hold Resources on Failure :			
Agent Details —							
Cluster :							
Agent :	\${AGT_LINUX}			Agent Variable :	~		
Credentials :	stonebranch_os_	user_london	₹ 📰	Credentials Variable :			
Inter-Cloud-Data-Tran	nsfer Details						
Action :	list directory			Loglevel :	DEBUG		
Connection File :	cloud2cloud.conf		-	Storage Type :	amazon_s3		
				UAC Base URL :	https://qa.company.cloud/		
UAC Rest Credentials :	UAC_REST_CRED	LONDON	*				

Action: copy

Field	Description
Agent	Linux or Windows Universal Agent to execute the Rclone command line.

Agent Cluster	Optional Agent Cluster for load balancing.
Action	[list directory, copy, list objects, move, remove-object, remove-object-store, create-object-store, copy-url, monitor-object]
	Copy objects from source to target.
Source	Enter a source storage Type name as defined in the Connection File; for example,
	amazon_s3, microsoft_azure_blob_storage, hdfs, onedrive, linux
	For a list of all possible storage types, refer to Overview of Cloud Storage Systems.
Target	Enter a target storage Type name as defined in the Connection File; for example,
	amazon_s3, microsoft_azure_blob_storage, hdfs, onedrive, linux
	For a list of all possible storage types, refer to Overview of Cloud Storage Systems.
Connection File	In the connection file, configure all required Parameters and Credentials to connect to the Source and Target Cloud Storage System. For example, if you want to transfer a file from AWS S3 to Azure Blob Storage, you must configure the connection Parameters for AWS S3 and Azure Blob Storage.
	For details on how to configure the Connection File, refer to Configure the Connection File.
Filter Type	[include, exclude, none]
	Define the type of filter to apply.
Filter	Provide the Patterns for matching file matching; for example, in a copy action:
	Filter Type: include
	Filter report[1-3].txt
	This means all reports with names matching report1.txt and report2.txt will be copied.
	For more examples on the filter matching pattern, refer to Rclone Filtering.
Other Parameters	This field can be used to apply additional flag parameters to the selected action.
Falameters	For a list of all possible flags, refer to Global Flags.
	Eample:
	To Skip files that are newer on the destination during a move or copy action, you could add the flagupdate.
Dry-run	[checked , unchecked]
	Do a trial run with no permanent changes.
UAC Rest Credentials	Universal Controller Rest API Credentials
UAC Base URL	Universal Controller URL
	For example, https://192.168.88.40/uc
Loglevel	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]

The following example copies all file starting with report4 from the amazon s3 bucket stonebranchpmtest to the azure container stonebranchpm.

			1	🗒 Update 🛅 Copy 🗔	Launch Task	View Parents	Delete	🔄 Refres	ih 💥 C
Inter-Cloud-Data-Tra	ansfer Task	 Variables 	Actions	Virtual Resources	• M	utually Exclusive	0	Instances	4 1
General									
Task Name :	copy Data from A	WS S3 to Azure		Version :	б				
Task Description :	#A2 copies data	from a source storag	ge system to target	storage system. storage	can be OS files	system or object s	store		
Member of Business Services :									*
Resolve Name Immediately :				Time Zone Preference :	- System Def	ault –		-	
Hold on Start :									
Virtual Resource Priority :	10		•	Hold Resources on Failure :					
Agent Details									
Cluster :									
Agent :	\${AGT_LINUX}			Agent Variable :	~				
Credentials :				Credentials Variable :					
Inter-Cloud-Data-Tran	sfer Details —								
Action :	сору			Loglevel :	INFO				*
Connection File :	cloud2cloud.com	f							
Source :	stonebranchpmt	est		Target :	stonebranchp	m			
Source Storage Type :	amazon_s3			Target Storage Type :	microsoft_azu	ure_blob_storage			
				UAC Base URL :	https://qa.der	no.cloud/			
UAC Rest Credentials :	UAC_REST_CREE	LONDON		Filter Type :	include				۲
				Filter :	report4*				
Other Parameters :				Dry-run :					

Action: list objects

Field	Description
Agent	Linux or Windows Universal Agent to execute the Rclone command line.
Agent Cluster	Optional Agent Cluster for load balancing.

Action	[list directory, copy, list objects, move, remove-object, remove-object-store, create-object-store, copy-url, monitor-object]
	List objects in an OS directory or cloud object store.
Storage	Enter a Storage Type name as defined in the Connection File; for example, amazon_s3, microsoft_azure_blob_storage, hdfs, onedrive, linux
Туре	For a list of all possible storage types, refer to Overview of Cloud Storage Systems.
Connection File	In the connection file, configure all required Parameters and Credentials to connect to the Source and Target Cloud Storage System. For example, if you want to transfer a file from AWS S3 to Azure Blob Storage, you must configure the connection Parameters for AWS S3 and Azure Blob Storage.
	For details on how to configure the Connection File, refer to Configure the Connection File.
Filter Type	[include, exclude, none]
	Define the type of filter to apply.
Filter	Provide the Patterns for matching file matching; for example, in a copy action:
	Filter Type: include
	Filter report[1-3].txt means all reports with names matching report1.txt and report2.txt will be copied.
	For more examples on the filter matching pattern, refer to Rclone Filtering.
Other	This field can be used to apply additional flag parameters to the selected action.
Parameters	For a list of all possible flags, refer to Global Flags.
	Example:
	To Skip files that are newer on the destination during a move or copy action, you could add the flagupdate.
Directory	Name of the directory you want to list the files in.
	For example, Directory: stonebranchpm/out would mean to list all objects in the bucket stonebranchpm folder out.
List Format	[list size and path, list modification time, size and path, list objects and directories, list objects and directories (Json)]
	The Choice box specifies how the output should be formatted.
UAC Rest Credentials	Universal Controller Rest API Credentials
UAC Base	Universal Controller URL
URL	For example, https://192.168.88.40/uc
Loglevel	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]

The following example lists all objects starting with report in the s3 bucket stonebranchpm.

				Update 🛄 Copy 属	Launch Task 🚡 View Paren	its 💼 Delete 📑 Refre	sh 💥 Cl
Inter-Cloud-Data-Tra	ansfer Task	Variables	a Actions	Virtual Resources	Mutually Exclusion	ve 🧧 Instances	4 1
General							
Task Name :	list objects in Go	ogle Cloud Storage	container	Version :	15		
Task Description :	#A3 lists the cor	ntent of an OS directo	ory or object store				
Member of Business Services :							¥
Resolve Name Immediately :				Time Zone Preference :	- System Default -	T	
Hold on Start :							
Virtual Resource Priority :	10		· •	Hold Resources on Failure :			
Agent Details —							
Cluster :							
Agent :	\${AGT_LINUX}			Agent Variable :	~		
Credentials :	stonebranch_os	_user_london	-	Credentials Variable :			
Inter-Cloud-Data-Tran	sfer Details						
Action :	list objects		2	Loglevel :	DEBUG		
Connection File :	cloud2cloud.com	nf	•	Storage Type :	google_cloud_storage		
Directory :	stonebranchpm			UAC Base URL	https://p1.demosystem.clo	nd/	
UAC Rest					1		
Credentials :	UAC_REST_CRE	D_LONDON		Filter Type :	include		•
				Filter	report*		
Other Parameters :							
Lint Engrand	list size and path	1		-			

Action: move

Field	Description
Agent	Linux or Windows Universal Agent to execute the Rclone command line.
Agent Cluster	Optional Agent Cluster for load balancing.
Action	[list directory, copy, list objects, move, remove-object, remove-object-store, create-object-store, copy-url, monitor-object]
	Move objects from source to target.
Source	Enter a source storage Type name as defined in the Connection File; for example,

	amazon_s3, microsoft_azure_blob_storage, hdfs, onedrive, linux
	For a list of all possible storage types, refer to Overview of Cloud Storage Systems.
Target	Enter a target storage Type name as defined in the Connection File; for example,
	amazon_s3, microsoft_azure_blob_storage, hdfs, onedrive, linux
	For a list of all possible storage types, refer to Overview of Cloud Storage Systems.
Connection File	In the connection file, configure all required Parameters and Credentials to connect to the Source and Target Cloud Storage System. For example, if you want to transfer a file from AWS S3 to Azure Blob Storage, you must configure the connection Parameters for AWS S3 and Azure Blob Storage.
	For details on how to configure the Connection File, refer to Configure the Connection File.
Filter Type	[include, exclude, none]
	Define the type of filter to apply.
Filter	Provide the Patterns for matching file matching; for example, in a copy action:
	Filter Type: include
	Filter report[1-3].txt means all reports with names matching report1.txt and report2.txt will be copied.
	For more examples on the filter matching pattern, refer to Rclone Filtering.
Other Parameters	This field can be used to apply additional flag parameters to the selected action.
Parameters	For a list of all possible flags, refer to Global Flags
	Example:
	To Skip files that are newer on the destination during a move or copy action, you could add the flagupdate.
Dry-run	[checked , unchecked]
	Do a trial run with no permanent changes.
UAC Rest Credentials	Universal Controller Rest API Credentials
UAC Base	Universal Controller URL
URL	For example, https://192.168.88.40/uc
Loglevel	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]

The following example moves the object report1.txt from the source s3 bucket stonebranchpmtest to the target s3 bucket stonebranchpmtest2.

			F	Jpdate 🛄 Copy 🗔	Launch Ta	ask 🚡 View Parents 🧃	Delete 📑 Refresi	n 💥 Cla
Inter-Cloud-Data-Tra	insfer Task	Variables	Actions	Virtual Resources		Mutually Exclusive	Instances	4 1
eneral	_							
Task Name :	move Data from	m AWS S3 to AWS S3	3	Version :		9		
Task Description :	#A4 move data	from a source stora	ige system to target stora	age system. storage c	an be OS f	files system or object sto	pre	
Member of Business Services								•
Resolve Name Immediately :				Time Zone Preference :	- Systen	n Default –	*	
Hold on Start :								
Virtual Resource Priority :	10		*	Hold Resources on Failure :				
gent Details								
Cluster :								
Agent :	\${AGT_LINUX}			Agent Variable :				
Credentials :			▼ 2	Credentials Variable :				
nter-Cloud-Data-Tran	sfer Details —							
Action :	move			Loglevel :	INFO			*
Connection File :	cloud2cloud.co	onf	×					
Source :	stonebranchpm	ntest		Target :	stonebra	inchpmtest2		
Source Storage Type :	amazon_s3			Target Storage Type :	amazon	s3		
				UAC Base URL :	https://p	1.demosystem.cloud/		
UAC Rest	UAC_REST_CR	ED_LONDON	•	Filter Type :	include			*
Gregeritiais.								

Action: remove-object

Field	Description
Agent	Linux or Windows Universal Agent to execute the Rclone command line.
Agent Cluster	Optional Agent Cluster for load balancing.
Action	[list directory, copy, list objects, move, remove-object, remove-object-store, create-object-store, copy-url, monitor-object]
	Remove objects in an OS directory or cloud object store.
	Enter a storage Type name as defined in the Connection File; for example,

Storage Type	amazon_s3, microsoft_azure_blob_storage, hdfs, onedrive, linux
	For a list of all possible storage types, refer to Overview of Cloud Storage Systems.
File Path	Path to the directory in which you want to remove the objects.
	For example:
	File Path: stonebranchpmtest
	Filter: report[1-3].txt
	This removes all s3 objects matching the filter: report[1-3].txt(report1.txt, report2.txt and report3.txt) from the s3 bucket stonebranchpmtest.
Connection File	In the connection file, configure all required Parameters and Credentials to connect to the Source and Target Cloud Storage System. For example, if you want to transfer a file from AWS S3 to Azure Blob Storage, you must configure the connection Parameters for AWS S3 and Azure Blob Storage.
	For details on how to configure the Connection File, refer to Configure the Connection File.
Other	This field can be used to apply additional flag parameters to the selected action.
Parameters	For a list of all possible flags, refer to Global Flags.
Dry-run	[checked , unchecked]
	Do a trial run with no permanent changes.
UAC Rest Credentials	Universal Controller Rest API Credentials
UAC Base	Universal Controller URL
URL	For example, https://192.168.88.40/uc
Loglevel	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]

The following example removes all s3 objects matching the filter: report[1-3].txt

(report1.txt, report2.txt and report3.txt) from the s3 bucket stonebranchpmtest.

			拱 Up	date 📳 Copy 🗔	Launch Task 🚡 View Parents	s 🚮 Delete 🎼 Refre	sh 💥 Ci
Inter-Cloud-Data-Tra	ansfer Task	• Variables	Actions	 Virtual Resources 	 Mutually Exclusive 	e Instance:	4 F
eneral							
Task Name :	remove objects i	from s3 container		Version :	13		
Task Description :	#A5 removes ob	jects from an OS fil	es system or object store				
Member of Business Services :							*
Resolve Name Immediately :				Time Zone Preference :	– System Default –	7	
Hold on Start ;							
Virtual Resource Priority :	10		*	Hold Resources on Failure :			
gent Details							
Cluster :							
Agent :	\${AGT_LINUX}			Agent Variable :	1		
Credentials :			• =	Credentials Variable :			
nter-Cloud-Data-Trar	nsfer Details						
Action	remove-object		÷ (*	Loglevel	DEBUG		
Connection File :	cloud2cloud.com	ıf	* 5-	Storage Type :	amazon_s3		
				UAC Base URL :	https://p1.demosystem.cloue	d/	
					Saultrala.		
UAC Rest Credentials :	UAC_REST_CRE	D_LONDON	- E	Filter Type :	Include		Ŧ

Action: remove-object-store

Field	Description
Agent	Linux or Windows Universal Agent to execute the Rclone command line.
Agent Cluster	Optional Agent Cluster for load balancing.
Action	[list directory, copy, list objects, move, remove-object, remove-object-store, create-object-store, copy-url, monitor-object]
	Remove an OS directory or cloud object store.
Storage Type	Enter a storage Type name as defined in the Connection File; for example,

	amazon_s3, microsoft_azure_blob_storage, hdfs, onedrive, linux
	For a list of all possible storage types, refer to Overview of Cloud Storage Systems.
Directory	Name of the directory you want to list the files in.
	For example, Directory: stonebranchpm/out would mean to list all objects in the bucket stonebranchpm folder out.
Connection File	In the connection file, configure all required Parameters and Credentials to connect to the Source and Target Cloud Storage System. For example, if you want to transfer a file from AWS S3 to Azure Blob Storage, you must configure the connection Parameters for AWS S3 and Azure Blob Storage.
	For details on how to configure the Connection File, refer to Configure the Connection File.
Other	This field can be used to apply additional flag parameters to the selected action.
Parameters	For a list of all possible flags, refer to Global Flags.
Dry-run	[checked , unchecked]
	Do a trial run with no permanent changes.
UAC Rest Credentials	Universal Controller Rest API Credentials
UAC Base	Universal Controller URL
URL	For example, https://192.168.88.40/uc
Loglevel	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]

The following example removes the s3 object store stonebranchpmtest.

			1 U	pdate 🛄 Copy 🗔	Launch Task 🚡 View Parents	s 💣 Delete ႃ Refresh 🗱 C
Inter-Cloud-Data-Tra	nsfer Task	• Variables	Actions	 Virtual Resources 	Mutually Exclusive	e Instances 4 🕨
General						
Task Name :	remove s3 bucket	t l		Version :	21	
Task Description :	#A6 remove an er	npty object store o	r OS directory			
Member of Business Services						*
Resolve Name Immediately :				Time Zone Preference :	– System Default –	•
Hold on Start :						
Virtual Resource Priority :	10			Hold Resources on Failure :		
Agent Details						
Cluster :						
Agent :	\${AGT_LINUX}			Agent Variable :	~	
Credentials :			•	Credentials Variable :		
Inter-Cloud-Data-Tran	sfer Details					
Action :	remove-object-sto	ore		Loglevel :	DEBUG	T
Connection File :	cloud2cloud.conf		-	Storage Type :	amazon_s3	
Directory :	stonebranchpmte	st		UAC Base URL :	https://p1.demosystem.cloud	d/
UAC Rest Credentials	UAC_REST_CRED	LONDON	*			

Action: create-object-store

Field	Description
Agent	Linux or Windows Universal Agent to execute the Rclone command line.
Agent Cluster	Optional Agent Cluster for load balancing.
Action	[list directory, copy, list objects, move, remove-object, remove-object-store, create-object-store, copy-url, monitor-object]
	Create an OS directory or cloud object store.
Storage Type	Enter a storage Type name as defined in the Connection File; for example,

	amazon_s3, microsoft_azure_blob_storage, hdfs, onedrive, linux
	For a list of all possible storage types, refer to Overview of Cloud Storage Systems.
Connection File	In the connection file, configure all required Parameters and Credentials to connect to the Source and Target Cloud Storage System. For example, if you want to transfer a file from AWS S3 to Azure Blob Storage, you must configure the connection Parameters for AWS S3 and Azure Blob Storage.
	For details on how to configure the Connection File, refer to Configure the Connection File.
Directory	Name of the directory you want to create.
	The directory can be an object store or a file system OS directory.
	For example, Directory: stonebranchpmtest would create the bucket stonebranchpmtest.
Other	This field can be used to apply additional flag parameters to the selected action.
Parameters	For a list of all possible flags, refer to Global Flags.
Dry-run	[checked , unchecked]
	Do a trial run with no permanent changes.
UAC Rest Credentials	Universal Controller Rest API Credentials
UAC Base	Universal Controller URL
URL	For example, https://192.168.88.40/uc
Loglevel	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]

The following example creates the s3 bucket stonebranchpmtest.

				pdate 🛄 Copy 🗔	Launch Task 🚡 Vie	w Parents 📶 De	lete 👍 Refres	ih 渊 Cli
Inter-Cloud-Data-Tra	insfer Task	Variables	Actions	 Virtual Resources 	 Mutualiy 	Exclusive	Instances	4 1
General								
Task Name :	create s3 bucke	t		Version	5			
Task Description :	#A7 create an O	S directory or object	store					
Member of Business Services								*
Resolve Name Immediately :				Time Zone Preference :	- System Default -		7	
Hold on Start								
Virtual Resource Priority :	10		*	Hold Resources on Failure :				
gent Details								
Cluster :	\${AGT_LINUX}			Agent Variable :	2			
	START_LINUX}			Credentials				
Credentials :			* II-	Variable				
nter-Cloud-Data-Tran	sfer Details							
Action :	create-object-ste	ore		Loglevel	DEBUG			
Connection File :	cloud2cloud.cor	nf	*	Storage Type :	amazon_s3			
Directory :	stonebranchprn	test		UAC Base URI	https://p1.demosyst	em.cloud/		
UAC Rest	UAC_REST_CRE		¥ 155					
Credentials	UAC_REST_CRE	D_LUNDUN	· II-					

Action: copy-url

Field	Description
Agent	Linux or Windows Universal Agent to execute the Rclone command line.
Agent Cluster	Optional Agent Cluster for load balancing.
Action	[list directory, copy, list objects, move, remove-object, remove-object-store, create-object-store, copy-url, monitor-object]
	Download a URL's content and copy it to the destination without saving it in temporary storage.
Source	Enter a source storage Type name as defined in the Connection File; for example,

	amazon_s3, microsoft_azure_blob_storage, hdfs, onedrive, linux					
	For a list of all possible storage types, refer to Overview of Cloud Storage Systems.					
Target	Enter a target storage Type name as defined in the Connection File; for example,					
	amazon_s3, microsoft_azure_blob_storage, hdfs, onedrive, linux					
	For a list of all possible storage types, refer to Overview of Cloud Storage Systems.					
Connection File	In the connection file, configure all required Parameters and Credentials to connect to the Source and Target Cloud Storage System. For example, if you want to transfer a file from AWS S3 to Azure Blob Storage, you must configure the connection Parameters for AWS S3 and Azure Blob Storage.					
	For details on how to configure the Connection File, refer to Configure the Connection File.					
Other	This field can be used to apply additional flag parameters to the selected action.					
Parameters	For a list of all possible flags, refer to Global Flags.					
	Useful parameters for the copy-url command:					
	-a,auto-filename Get the file name from the URL and use it for destination file path -h,help help for copyurl no-clobber Prevent overwriting file with same name -p,print-filename Print the resulting name fromauto-filename stdout Write the output to stdout rather than a file					
Dry-run	[checked , unchecked]					
	Do a trial run with no permanent changes.					
UAC Rest Credentials	Universal Controller Rest API Credentials					
UAC Base	Universal Controller URL					
URL	For example, https://192.168.88.40/uc					
Loglevel	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]					

The following example downloads a PDF file:

From the webaddress: https://www.bundesbank.de/resource/../blz-loeschungen-aktuell-data.pdf

Tto the linux folder: /home/stonebranch/demo/in

The linux folder is located on the server where the *Agent*{*AGT_LINUX*} runs.

				pdate 🛄 Copy 🗔	Launch Task	View Parents	: 🗊 Delet	e 😫 Refresi	n 💥 C
Inter-Cloud-Data-Tr	ansfer Task	Variables	Actions	Virtual Resources	•	Mutually Exclusive		Instances	4 1
eneral									
Task Name :	Copy file from UP	ŧL.		Version :	(5			
Task Description :	#A8 copy a file fr	om a given url							
Member of Business Services :									÷
Resolve Name Immediately				Time Zone Preference :	System D	efault		*	
Hold on Start :									
Virtual Resource Priority :	10		•	Hold Resources on Failure :					
	\${AGT_LINUX} stonebranch_os_	user_london		Agent Variable : Credentials Variable :					
	osfor Dotails			variable :	_				
	copy-url			Loglevel :	INFO				*
ter-Cloud-Data-Tran Action :				-					
	cloud2cloud.con	f	-						
Action :	cloud2cloud.con		re/blob/602624/13336	Target :	/home/stor	ebranch/demo/in	i		
Action : Connection File :	cloud2cloud.con		▼ 📰 ce/blob/602624/13336	Target Storage	/home/stor	ebranch/demo/in	î		
Action : Connection File :	cloud2cloud.con		ce/blob/602624/13336	Target Storage Type :	linux	ebranch/demo/in emosystem.cloud			

Action: monitor-object

Field	Description
Agent	Linux or Windows Universal Agent to execute the Rclone command line.
Agent Cluster	Optional Agent Cluster for load balancing.
Action	[list directory, copy, list objects, move, remove-object, remove-object-store, create-object-store, copy-url, monitor-object]
	Monitor a file or object in an OS directory or cloud object store.
Storage Type	Enter a storage Type name as defined in the Connection File; for example,
	amazon_s3, microsoft_azure_blob_storage, hdfs, onedrive, linux

	For a list of all possible storage types, refer to Overview of Cloud Storage Systems.
Directory	Name of the directory to scan for the files to monitor.
	The directory can be an object store or a file system OS directory.
	For example:
	Directory: stonebranchpm/out Filter: report1.txt
	This would monitor in the s3 bucket folder stonebranchpm/out for the object report1.txt.
Connection File	In the connection file, configure all required Parameters and Credentials to connect to the Source and Target Cloud Storage System.
	For example, if you want to transfer a file from AWS S3 to Azure Blob Storage, you must configure the connection Parameters for AWS S3 and Azure Blob Storage
	For details on how to configure the Connection File, refer to Configure the Connection File.
Filter Type	[include, exclude, none]
	Define the type of filter to apply.
Filter	Provide the Patterns for matching file matching; for example, in a copy action:
	Filter Type: include
	Filter report[1-3].txt
	This means all reports with names matching report1.txt and report2.txt will be copied.
	For more examples on the filter matching pattern, refer to Rclone Filtering.
Other Parameters	This field can be used to apply additional flag parameters to the selected action.
	For a list of all possible flags, refer to Global Flags.
	Example:
	To Skip files that are newer on the destination during a move or copy action, you could add the flagupdate.
Dry-run	[checked , unchecked]
	Do a trial run with no permanent changes.
Trigger on Existence	[checked , unchecked]
	If checked, the monitor goes to success even if the file already exists when it was started.
Interval	[10s, 60s, 180s]
	Monitor interval to check of the file(s) in the configured directory.
	For example, Interval: 60s, would be mean that every 60s, the task checks if the file exits in the scan directory.
UAC Rest Credentials	Universal Controller Rest API Credentials
UAC Base URL	Universal Controller URL

	For example, https://192.168.88.40/uc
Loglevel	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]

The following example monitors s3 bucket folder stonebranchpm/out for the object report1.txt.

If the object is found, the monitor goes to success.

		s: monitor object in			Launch Task 👔 View Parents		- =
Inter-Cloud-Data-Tra	onsfer Task	Variables	Actions	Virtual Resources			
General							
	monitor object in	a a huskat		Version :	8		
					0		
Member of	#A9 monitor and	object of file in an ob	pject store or OS direct	ory			
Business							*
Services :				-			
Resolve Name Immediately :				Time Zone Preference	– System Default –	*	
Hold on Start :							
Virtual Resource	10		-	Hold Resources on			
Priority :	10			Failure :			
Agent Details							
Cluster :							
Agent :	\${AGT_LINUX}			Agent Variable :	1		
			- 5	Credentials			
Credentials :			*	Variable :			
Inter-Cloud-Data-Tran	sfer Details						
	monitor-object			 Loglevel : 	DEBUG		
Connection File :		f	-	Storage Type :			
connection rine .	010002010000.0011			Storage Type.	umu201_30		
Directory :	stonebranchpm/	/out		UAC Base URL :	https://p1.demosystem.cloud	/	
UAC Rest	UAC_REST_CREI		-	Filtor Turce	include		*
Credentials :	UAG_REST_CREI	0					
				Filter:	report1.txt		
Other Parameters :							
				Interval :	10s		*
Trigger on Existence :							

Universal Controller 7.0.x Available Integrations

Jenkins Integration

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Disclaimer

This download is designed as a template to be adapted to your environment. In some cases, templates will need to be changed to work with your current Universal Automation Center (UAC) setup. This download is free to use. However, the download is not supported, and no warranty is provided by Stonebranch for this document and the related download. The use of this document and the related download is at your own risk. Before using this download in a production system, please perform testing.

Stonebranch assumes no liability for any issues caused by the performance of this download.

Request Support:

Stonebranch offers paid support, by request, for select Universal Tasks. Paid support provides installation and on-going technical support. Universal Tasks that are eligible for paid support will be noted as "support eligible" within the Universal Task listing page. To learn more, please contact Stonebranch.

Introduction

This integration improves the functionality of Jenkins when orchestrated from Universal Controller. It encourages collaboration by enabling the well-controlled and automated deployment of applications over to the operations side.

Overview

- UAC communicates with Jenkins through the Python Jenkins module.
- Jenkins can make REST-API calls to the Universal Controller to trigger any task or workflow.
- This task can trigger or start an existing build job in Jenkins. Universal controller will monitor the build execution in Jenkins until completion, then send the build results to the Controller. With this task, users can create a build job in Jenkins from the Controller. Any Jenkins build job definitions in XML will be stored centrally in the Controller.
- This task offers the functionality to fetch the Jenkins job build information and list running build info in Jenkins from Universal Controller.
- Enable/disable Jenkins jobs and nodes and delete/copy/rename Jenkins jobs from Universal Controller.
- When users list the Installed plugin in Jenkins, a plugin install can be triggered from the Universal Controller.
- Set the next build info for Jenkins build jobs.

Software Requirements

This integration requires an Universal Agent and a Python runtime to execute the Universal Task against a Jenkins instance.

Software Requirements for Universal Template and Universal Task

- Requires Python 3.6 or higher. Tested with the Universal Agent bundled Python distribution.
- Python modules required:
 - requests
 - Jenkins

Software Requirements for Universal Agent

Either:

- Universal Agent for Windows x64 Version 6.6 and later with python options installed
- Universal Agent for Linux Version 6.6 and later with python options installed

Software Requirements for Universal Controller

• Universal Controller Version 6.6.0.0 and later

Software Requirements for the Application to be Scheduled

This Universal Task has been tested with the following Jenkins versions:

2.12.2

Technical Considerations

This Universal Task uses the Python Jenkins Module functions (https://python-jenkins.readthedocs.io/en/latest/) to make REST API calls to Jenkins server.

Jenkins Integration Key Features

Feature	Description

Get Jenkins Jobs build information	Get a Jenkins job build information details
Create a Jenkins Build Job	Allows you to create a Jenkins build job by passing the XML configuration script from Universal Controller
Get Last build number	Get the latest build number for a job
Set Next build number	Allows to set the next build number for the Jenkins job
Trigger or start an existing build job	Trigger an existing Jenkins build job in Jenkins and Universal Controller will monitor the build execution in Jenkins until completion, then send the build results to the Controller
List running build info	Allows to list the build job that are running
Enable/Disable Jenkins Job	function to enable or disable a Jenkins build job
Delete/Copy/Rename Jenkins Job	function to copy or delete or rename a Jenkins Job
Get Console output for a build	Get the output of a Jenkins Build job
Enable / disable Nodes in Jenkins	Enable or Disable a Jenkins node
Get all installed plugins info	List all the plugins that are installed in a Jenkins server
Install a plugin for Jenkins environment	Allows to install a specific Jenkins plugin

Import Jenkins Integration Built-In Universal Template

To use the built-in Universal Template, you first must perform the following steps:

- 1. This Universal Task requires the Resolvable Credentials feature. Check that the Resolvable Credentials Permitted system property has been set to true.
- 2. Copy or Transfer the Universal Template file to a directory that can be accessed by the Universal Controller Tomcat user.
- 3. In the Universal Controller UI, select Configuration > Universal Templates to display the current list of Universal Templates.
- 4. Right-click any column header on the list to display an Action menu.
- 5. Select Import from the menu, enter the directory containing the Universal Template file(s) that you want to import, and click OK.

When the files have been imported successfully, the Universal Template will appear on the list.

Configure Jenkins Integration Universal Task

For the new Universal Task type, create a new task, and enter the task-specific details that were created in the Universal Template.

Field Descriptions for Jenkins Integration Universal Task

Field	Description
Jenkins Function	Select the desired function you would need to perform in Jenkins
Jenkins URL	URL of the Jenkins server, to make api calls
Jenkins Credentials	Jenkins User credentials or auth token to authenticate API calls
Jenkins Function	Select the desired function you would need to perform in Jenkins

Jenkins Job Name	Name of the Jenkins Job Name
Jenkins Job Parameters	The parameters that would need to passed along for starting a Jenkins Build
Job Token	If the Jenkins can be triggered remotely by using a job token then pass on the Job token parameter
Config XML	Provide the XML script for the creation of new job in Jenkins
Rename Job	specify the job name that needs to be renamed
From jobname	give the existing from where its needs to be copied eg: demo_job or folder/demo_job
To Job Name	copy/rename to a new Job Name eg: demo_job or folder/demo_job
Enable Node	specify the node name that needs to be enabled
Disable Node	specify the node name that needs to be disabled
Delete Job	Specify the job that needs to be deleted in Jenkins
Next Build Number(+ Last Build Number)	should be greater than the last builder otherwise jenkins will ignore the request
Enable Job	Specify the job name that needs to be enabled
Disable Job	specify the job that needs to be disabled
Jenkins Build Number	Jenkins build number for the job(int)
Jenkins Connection Timeout(in secs)	Specify the connection time out interval in seconds
Jenkins Plugin Name	Provide the Jenkin Plugin short name to be installed

Examples for Jenkins Integration Universal Tasks

Start a Jenkins Build

http://172.31.9.188:8080	Jenkins Credentials : jenkins_cred	× .
Start a Jenkins Build Job	~	
NewBuildJob		
	Jenkins Connection Timeout(in secs) : 10	
		0 6
Name	Value	
		Start a Jenkins Build Job

Create a Jenkins Job

Jenkins URL :	http://172.31.9.188:8080	Jenkins Credentials : Jenkins_API_token	▼ 10
Jenkins-Function :	Create Jenkins Job	~	
Jenkins JobName :	NewBuildJob		
Config XML :	scr_Jenkins_XML_script		· • .
lenkins Connection Timeout(in secs) :			
Runtime Directory :			
Runtime Directory :			0 6
Runtime Directory : Environment	Name	Value	0 6
	Name	Value No items to show.	0 6

New Jenkins Job XML Configuration

			• ~	_
T T		刑 Update 🏾 🛃 Upload Script 🖺 Co	py 巓 Delete 📑 Refre	sh 💢 Cl
Script Tasks Not	es Versions			
Details				
Script Name :	scr_Jenkins_XML_script	Version :	1	
Description :				
Script Type :	Data 🗸	Resolve UAC Variables : 📝		
<pre></pre> <pre><pre></pre><pre><pre><pre><pre><pre><pre><pre><</pre></pre></pre></pre></pre></pre></pre></pre>		A		

Get Plugins List

http://172.31.9.188:8080	Jenkins jenkins_cred	×
Get-All-Plugins-Info	Jenkins Connection 10	
Name	Value	0 0
	No items to show.	
	Get-All-Plugins-Info	Get-All-Plugins-Info Jenkins Connection Timeout(in secs): 10 10 Name Value Value Value

Job Build Information

Jenkins URL :	http://172.31.9.188:8080	Jenkins Credentials : jenkins_cred	*
	Get Job's Build Information	*	
Jenkins JobName :	demo_jenkins		
Jenkins Build Number :		Jenkins Connection 10	
untime Directory :			
			•
Environment	Name	Value	
Variables :		No items to show.	

Document References

This document references the following documents:

Name	Location	Description
Universal Templates	https://docs.stonebranch.com/confluence/display/UC70/Universal+Templates	User documentation for creating Universal Templates in the Universal Controller user interface.
Universal Tasks	https://docs.stonebranch.com/confluence/display/UC70/Universal+Tasks	User documentation for creating Universal Tasks in the Universal Controller user interface.

JSCAPE MFT

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Introduction

This integration provides UAC customers the ability to manage and integrate their JSCAPE Managed File Transfer Server processes within their UAC automation processes and workflows.

Overview

This integration delivers a the JSCAPE MFT Universal Template that allows UAC customers to build Tasks to perform the following JSCAPE Managed File Transfer Server functions:

- PGP Encrypt
- PGP Decrypt
- Run a UDM Gateway Trigger
- SFTP File Upload
- SFTP File Download
- Trading Partner File Upload
- Trading Partner File Download
- Trading Partner File Upload using a Regex or Generic Filename Pattern
- Trading Partner File Download using a Regex or Generic Filename Pattern

Software Requirements

This integration requires a Universal Agent and a Python runtime to execute the Universal Task.

Software Requirements for Universal Template and Universal Task

- Requires Python 3.7.6 or higher. Tested with the Universal Agent bundled Python distribution.
- Python modules required:
 - requests version 2.22.0

Software Requirements for Universal Agent

Either:

- Universal Agent for Windows x64 Version 7.0.0.0 and later with python options installed
- Universal Agent for Linux Version 7.0.0.0 and later with python options installed

Software Requirements for Universal Controller

Universal Controller Version 7.0.0.0 and later

Software Requirements for the Application to be Scheduled

• JSCAPE Managed File Transfer Server version 12 and higher.

Integration Description

Integration Flow

The JSCAPE MFT Universal Task performs the following:

- 1. Login to JSCAPE MFT Server
- 2. Check JSCAPE MFT Server Version
- 3. Create Temporary JSCAPE MFT Server Trigger with a generated unique name to perform the desired action. Except Run Trigger which runs the requested Trigger definition directly.

4. Run JSCAPE MFT Server Trigger.

- 5. Get JSCAPE MFT Server Trigger Status
- 6. If Successful, delete the Temporary Trigger definition (Except Run Trigger)
- 7. Retrieve Trigger Log

Output Only Fields

The JSCAPE MFT Universal Task Instances will provide the following display information:

Fieldname	Description
Trigger Name	Returns the generated temporary trigger name, except for Run Trigger when the Trigger name is displayed.
Trigger Status	Returns the current status of the Trigger.
Trigger ID	Returns the JSCAPE MFT Server Trigger Process ID.
MFT Server Version	Returns the version of the JSCAPE MFT Server.

Dynamic Commands

The following Universal Task Instance specific commands are available:

Command Name	Allowed Task Instance Status'	Description
Cancel (Kill) Trigger	RUNNING	Issues the JSCAPE MFT Server Kill command against the running Trigger.
Cleanup (Delete) Temporary Trigger	FAILED	Deletes the temporary Trigger. Use this option if you do not want to rerun a failed temporary Trigger, failed triggers are not automatically deleted to facilitate a rerun of the Trigger. It is recommended to Force Finish the failed Universal Task instance after deleting the temporary trigger. This command is not effective for Run Trigger.

Task Instance Rerun Behavior

Performing a rerun against a JSCAPE MFT Universal Task instance behaves as follows.

- When the task is rerun and no JSCAPE MFT Server Trigger Process ID is available a new Trigger will be created and run.
- When the task is rerun and a JSCAPE MFT Server Trigger Process ID is available a JSCAPE MFT Server Rerun command will be issued against the existing Trigger. Note that for the Run Trigger Function the behavior of the JSCAPE MFT Server Rerun command can be impacted by the "On Rerun Restart All Actions" option in the Task instance definition.

Import Universal Template

To use the Universal Template, you first must perform the following steps:

- 1. This Universal Task requires the Resolvable Credentials feature, check that the Resolvable Credentials Permitted system property has been set to true. For more information about Resolvable Credentials click here.
- 2. Download the provided ZIP file.
- 3. In the Universal Controller UI, select Administration > Configuration > Universal Templates to display the current list of Universal Templates.

- Click Import Template.
 Select the template ZIP file and Import.

When the template has been imported successfully, the Universal Template will appear on the list, refresh your Navigation Tree to see these tasks in the Automation Center Menu.

Configure Universal Task

Create JSCAPE MFT Tasks as required.

Field Descriptions for JSCAPE MFT Universal Task

Function = PGPEncrypt

Field	Description
MFT Server URL	MFT Server URL i.e. https://localhost:11443
MFT Server Credential	UC credential definition containing a valid JSCAPE MFT Server Administrator username and password.
Domain	Select the required JSCAPE MFT Server Domain name.
Function	Select the PGPEncrypt Function.
Encrypted File Name	The name of the target encrypted file.
Plain Text File Name	The name of the source plaintext file.
PGP Key	Select the PGP Key to use for encryption.
Delete Source File	Specify if the source plaintext file is to be deleted.
Compress	Specify if the target encrypted file is to be compressed.

Function = PGPDecrypt

Field	Description
MFT Server URL	MFT Server URL i.e. https://localhost:11443
MFT Server Credential	UC credential definition containing a valid JSCAPE MFT Server Administrator username and password.
Domain	Select the required JSCAPE MFT Server Domain name.
Function	Select the PGPDecrypt Function.
Encrypted File Name	The name of the source encrypted file.
Plain Text File Name	The name of the target plaintext file
PGP Key	Select the PGP Key to use for encryption.

Delete Source File	Specify if the source encrypted file is to be deleted.

Function = RunTrigger

Field	Description
MFT Server URL	MFT Server URL i.e. https://localhost:11443
MFT Server Credential	UC credential definition containing a valid JSCAPE MFT Server Administrator username and password.
Domain	Select the required JSCAPE MFT Server Domain name.
Function	Select the RunTrigger Function.
Trigger Name	Select the required JSCAPE MFT Server Trigger.
On Rerun Restart All Actions	Check this option to restart Trigger form the beginning when performing a rerun of the task instance, leave unchecked to start from the failed or cancelled Trigger action.

Function = SFTPUpload

Field	Description
MFT Server URL	MFT Server URL i.e. https://localhost:11443
MFT Server Credential	UC credential definition containing a valid JSCAPE MFT Server Administrator username and password.
Domain	Select the required JSCAPE MFT Server Domain name.
Function	Select the SFTPUpload Function.
SFTP Host	Specify the remote SFTP server Host Name or IP address.
SFTP Port	Specify the remote SFTP server port.
SFTP Credential	Select the Credential definition to access the remote SFTP server.
Local File Name	Specify the location of the Local File.
Remote Directory	Specify the remote SFTP Server Directory.
Transfer Mode	Specify the Transfer Mode.
Overwrite if File Exists	Check to overwrite destination file(s) if it exists.
Retry Limit	Specify the Maximum Retry Attempts.
Retry Interval	Specify the Interval in Seconds Between Retries.

Function = SFTPDownload

Field	Description
MFT Server URL	MFT Server URL i.e. https://localhost:11443

MFT Server Credential	UC credential definition containing a valid JSCAPE MFT Server Administrator username and password.
Domain	Select the required JSCAPE MFT Server Domain name.
Function	Select the SFTPDownload Function.
SFTP Host	Specify the remote SFTP server Host Name or IP address.
SFTP Port	Specify the remote SFTP server port.
SFTP Credential	Select the Credential definition to access the remote SFTP server.
Local File Name	Specify the location of the Local File.
Remote File Name	Specify the remote SFTP File.
Transfer Mode	Specify the Transfer Mode.
Overwrite if File Exists	Check to overwrite destination file(s) if it exists.
Retry Limit	Specify the Maximum Retry Attempts.
Retry Interval	Specify the Interval in Seconds Between Retries.

Function = TradingPartnerUpload

Field	Description
MFT Server URL	MFT Server URL i.e. https://localhost:11443
MFT Server Credential	UC credential definition containing a valid JSCAPE MFT Server Administrator username and password.
Domain	Select the required JSCAPE MFT Server Domain name.
Function	Select the TradingPartnerUpload Function.
Trading Partner	Select the JSCAPE MFT Server Trading Partner definition.
Local File Name	Specify the location of the Local File.
Remote Directory	Specify the remote Trading Partner Directory.
Transfer Mode	Specify the Transfer Mode.
Passive Mode	Check to use passive mode.
Retry Limit	Specify the Maximum Retry Attempts.
Retry Interval	Specify the Interval in Seconds Between Retries.

Function = TradingPartnerDownload

Field	Description
MFT Server URL	MFT Server URL i.e. https://localhost:11443

MFT Server Credential	UC credential definition containing a valid JSCAPE MFT Server Administrator username and password.
Domain	Select the required JSCAPE MFT Server Domain name.
Function	Select the TradingPartnerDownload Function.
Trading Partner	Select the JSCAPE MFT Server Trading Partner definition.
Local File Name	Specify the location of the Local File.
Remote File Name	Specify the remote Trading Partner File.
Transfer Mode	Specify the Transfer Mode.
Passive Mode	Check to use passive mode.
Retry Limit	Specify the Maximum Retry Attempts.
Retry Interval	Specify the Interval in Seconds Between Retries.

Function = TradingPartnerRegExUpload

Field	Description
MFT Server URL	MFT Server URL i.e. https://localhost:11443
MFT Server Credential	UC credential definition containing a valid JSCAPE MFT Server Administrator username and password.
Domain	Select the required JSCAPE MFT Server Domain name.
Function	Select the TradingPartnerRegExUpload Function.
Trading Partner	Select the JSCAPE MFT Server Trading Partner definition.
Regular Expression / Wildcard	Specify the Regular Expression or Wildcard.
Expression Type	Select either "Regular Expression" or "Widlcard".
Local Directory	Specify the location of the Local File.
Remote Directory	Specify the remote Trading Partner Directory.
Transfer Mode	Specify the Transfer Mode.
Passive Mode	Check to use passive mode.
Fail if No Files Found	Check to fail if no files match the specified expression (Regular Expression or Wildcard).
Delete on Success	Check to delete source files after successful transfer.
Retry Limit	Specify the Maximum Retry Attempts.
Retry Interval	Specify the Interval in Seconds Between Retries.

Function = TradingPartnerRegExDownload

Field	Description
MFT Server URL	MFT Server URL i.e. https://localhost:11443
MFT Server Credential	UC credential definition containing a valid JSCAPE MFT Server Administrator username and password.
Domain	Select the required JSCAPE MFT Server Domain name.
Function	Select the TradingPartnerRegExDownload Function.
Trading Partner	Select the JSCAPE MFT Server Trading Partner definition.
Regular Expression / Wildcard	Specify the Regular Expression or Wildcard.
Expression Type	Select either "Regular Expression" or "Widlcard".
Local Directory	Specify the location of the Local File.
Remote Directory	Specify the remote Trading Partner Directory.
Transfer Mode	Specify the Transfer Mode.
Passive Mode	Check to use passive mode.
Fail if No Files Found	Check to fail if no files match the specified expression (Regular Expression or Wildcard).
Delete on Success	Check to delete source files after successful transfer.
Retry Limit	Specify the Maximum Retry Attempts.
Retry Interval	Specify the Interval in Seconds Between Retries.

Examples for JSCAPE MFT Universal Tasks

VIFT Server URL :	https://sbus08:11443		MFT Server Credential :	* R
Domain :	Local	- 🥺		
Function :	RunTrigger	•		
Trigger Name :	Sleep			
On Rerun Restart All Actions :				
Runtime Directory :				
				0 0
Environment Variables :	Name		Value	
		N	o items to show.	

IFT Server URL :	https://sbus08:11443	MFT Server Credential : UDMG API	T
Domain :	Local 🔹 🍕		
Function :	SFTPUpload		
SFTP Host :	sbus08	SFTP Port : 7822	
FTP Credential :	Docker SFTP		
ocal File Name :	C:\Program Files\JSCAPE MFT Server\users\Local\udmg\new	test.txt.pgp	
mote Directory :	/tmp		
Transfer Mode :	Binary	Overwrite If File Exists :	
Retry Limit :	0	Retry Interval : 60	
Runtime Directory :			
			0 0
Environment Variables :	lame	Value	
		No items to show.	

		04.0	
https://sbus08:11443		Credential: UDMG API	× 1
Local	- 2		
PGPEncrypt	*		
C:\Program Files\JSCAPE MFT Se	erver\users\Local\udmg\new-te	est.txt.pgp	
C:\Program Files\JSCAPE MFT Se	erver\users\Local\udmg\vendo	r.txt	
demo <stonebranch.demo@stonel< td=""><td>branch.com></td><td></td><td>- 🍭</td></stonebranch.demo@stonel<>	branch.com>		- 🍭
		Compress :	
			0 0
Name		Value	
	No) items to show.	
	C:\Program Files\JSCAPE MFT Se demo <stonebranch.demo@stone< td=""><td>Local PGPEncrypt C:\Program Files\JSCAPE MFT Server\users\Local\udmg\new-te C:\Program Files\JSCAPE MFT Server\users\Local\udmg\vendo demo <stonebranch.demo@stonebranch.com> Name</stonebranch.demo@stonebranch.com></td><td>Local Image: Credential : PGPEncrypt Image: Credential : C:\Program Files\JSCAPE MFT Server\users\Local\udmg\new-test.txt.pgp C:\Program Files\JSCAPE MFT Server\users\Local\udmg\vendor.txt demo <stonebranch.demo@stonebranch.com> Compress : Image: Compress : Image: Compress : Image: Compress : Image: Compress :</stonebranch.demo@stonebranch.com></td></stonebranch.demo@stone<>	Local PGPEncrypt C:\Program Files\JSCAPE MFT Server\users\Local\udmg\new-te C:\Program Files\JSCAPE MFT Server\users\Local\udmg\vendo demo <stonebranch.demo@stonebranch.com> Name</stonebranch.demo@stonebranch.com>	Local Image: Credential : PGPEncrypt Image: Credential : C:\Program Files\JSCAPE MFT Server\users\Local\udmg\new-test.txt.pgp C:\Program Files\JSCAPE MFT Server\users\Local\udmg\vendor.txt demo <stonebranch.demo@stonebranch.com> Compress : Image: Compress : Image: Compress : Image: Compress : Image: Compress :</stonebranch.demo@stonebranch.com>

Document References

This document references the following documents:

Name	Location	Description
Universal Templates	https://docs.stonebranch.com/confluence/display/UC70/Universal+Templates	User documentation for creating Universal Templates in the Universal Controller user interface.
Universal Tasks	https://docs.stonebranch.com/confluence/display/UC70/Universal+Tasks	User documentation for creating Universal Tasks in the Universal Controller user interface.

Microsoft Teams Integration

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- Examples for Microsoft Teams Integration Universal Tasks
 - Send Message
 - Approval Notification
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Disclaimer

This download is designed as a template to be adapted to your environment. In some cases, templates will need to be changed to work with your current Universal Automation Center (UAC) setup. This download is free to use. However, the download is not supported, and no warranty is provided by Stonebranch for this document and the related download. The use of this document and the related download is at your own risk. Before using this download in a production system, please perform testing.

Stonebranch assumes no liability for any issues caused by the performance of this download.

Request Support:

Stonebranch offers paid support, by request, for select Universal Tasks. Paid support provides installation and on-going technical support. Universal Tasks that are eligible for paid support will be noted as "support eligible" within the Universal Task listing page. To learn more, please contact Stonebranch.

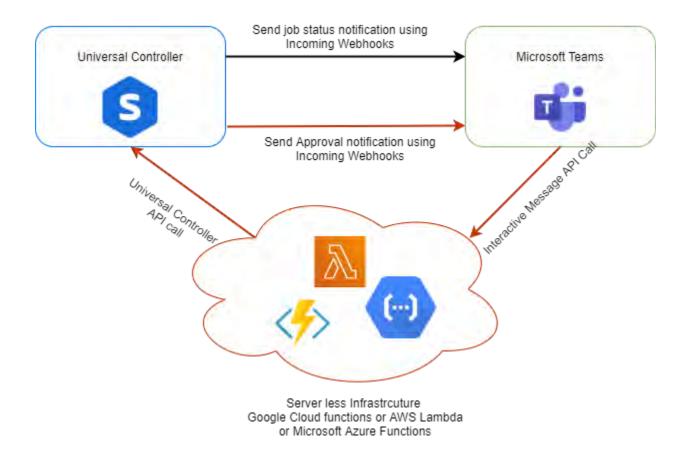
Introduction

This Universal Task allows you to send messages to an existing channel of Microsoft Teams. As a result, you can integrate this solution in UAC to notify users for UAC result or send approval notifications on Microsoft teams.

Overview

Key Features

- Quick reaction time on job failures.
- Manual task interruptions in workflows can be handled by concerned applications/business team, while workflows in Universal Controller can be resumed simply by responding to the approval notifications on Microsoft Teams.



Software Requirements

Software Requirements for Universal Template and Universal Task

This integration requires an Universal Agent and a Python runtime to execute the Universal Task.

- Requires Python 3.6 or higher. Tested with the Universal Agent bundled Python distribution.
- Python modules required:
 - requests

Software Requirements for Universal Agent

- Universal Agent for Windows x64 Version 6.6.0.0 and later with python options installed
- Universal Agent for Linux Version 6.6.0.0 and later with python options installed

Software Requirements for Universal Controller

• Universal Controller Version 6.6.0.0 and later

Software Requirements for the Application to be Scheduled

The Universal Task requires an Incoming Team channel and a Serverless Infrastructure like AWS Lambda or Google Cloud Functions or Microsoft Azure Functions.

Technical Considerations

Adding an Incoming webhook to a Microsoft Teams Channel

Note

If your MS Team's Settings => Member permissions => Allow members to create, update, and remove connectors is selected, any team member can add, modify, or delete a connector.

- 1. Navigate to the channel where you want to add the webhook and select (•••) More Options from the top navigation bar.
- 2. Choose Connectors from the drop-down menu and search for Incoming webhook.
- 3. Select the Configure button, provide a name, and, optionally, upload an image avatar for your webhook.
- 4. The dialog window will present a unique URL that will map to the channel. Make sure that you copy and save the URL you will need to provide it to the outside service.
- 5. Select the Done button. The webhook will be available in the team channel.

Additional Information on How to Use Approval Notification Feature

Manual tasks are typically used when there is a need for manual intervention of user in a workflow process. Traditionally the Manual Task is completed successfully in the Universal controller by clicking "Set Completed" command.

With this Universal Task for Microsoft Teams, we can provide you with a notification in the Microsoft team incoming webhook channel, when the workflow reaches the manual task with status "Action Required".

Upon receiving the notification on the teams channel, users can click on on the "Approve" Button in the interactive message for the workflow to proceed further. This interactive message is sent from the Universal Controller.

When the "Approve" or "Reject" button is clicked in the interactive message, an API call is made to a function where it can handle the event from the Microsoft Teams. For example we use python function in AWS lambda + API gateway or Azure functions or any custom URL where the Teams messaging platform can make an API POST call to handle the user action in the message as a payload and, based on the posted payload data from the Teams, Universal Controller API call will be made to set the manual task either to set complete status or No action in the function. Please refer to the handler.py file in the serverless function folder for a sample serverless function using AWS lambda.

For Approval Notification feature of the Universal Task, the "API Endpoint" provided in the task details could be an end point either in AWS lambda or Azure Function or GCP function or your custom API end point to handle the interactive message from Microsoft Teams.

Below is the sample python code that could be invoked for the Microsoft Teams Approval Notification. In the code below, update the following variables accordingly under def_handler()

```
uname = 'XXXX' # Universal Controller user name
     passwd = 'XXXX' # Universal Controller user password
     uc_url = 'http:// + uname + ':' + passwd + '@XXXXX/resources/taskinstance/setcompleted'# URL of the Universal Controller
import json
import boto3
import logging
from urllib.parse import parse_qs
import requests
logger = logging.getLogger()
logger.setLevel(logging.INFO)
def lambda handler(event, context):
   print(str(event))
   logger.info(json.dumps(event))
   payload = event['body']
   print(payload)
   jobname_split = payload.split(':')
   jobname = jobname_split[1]
   team_button = jobname_split[0]
   print(team_button)
   print(jobname)
   teams_incoming_webhook = 'XXXX'
   uname = 'XXXX'
   passwd = 'XXXX'
   uc_url = 'http://' + uname + ':' + passwd + \setminus
           '@XXXXXX/resources/taskinstance/setcompleted'
   # Posting request to Universal Controller
   uc post request(team button, jobname, uc url, teams incoming webhook)
   body = \{
      "message": "Teams Data parsed successfully and Universal controller ""confirmed the job !",
      "input": event
   response = {
      "statusCode": 200,
      "body": json.dumps(body)
   return response
def uc_post_request(team_button, jobname, uc_url, teams_incoming_webhook):
   header = { 'content-type': "application/json" }
   if team_button=="Approved":
      print("Intiating Request to Universal Controller")
      approval_message = {
          "name": jobname,
          "criteria": "Newest Instance"
      }
      print(uc_url)
      post uc = requests.post(uc url, data=json.dumps(approval message),
         headers=header)
      # print(post_uc.text)
```

teams incoming webhook = 'XXXX' # The incoming web hook of Microsoft Teams channel

```
if post_uc.status_code==200:
       format_response = post_uc.json()
       logger.info(format_response)
       if format_response['success'] is False:
            print("Something went wrong")
            error_message = {
                "@type": "MessageCard",
                "@context": "https://schema.org/extensions",
                "summary": "This is the summary property",
                "themeColor": "#FFFF00",
                "sections": [
                        "activityTitle": "**Couldn't not reach**",
                        "activitySubtitle": "Something went wrong, ""action not completed"
                ]
            print("Sending error report to MS Teams Channel")
            uc_response = requests.post(teams_incoming_webhook,
                data=json.dumps(error_message),
                headers={ 'CARD-UPDATE-IN-BODY': 'True',
                         'Content-Type': 'application/json'})
       elif format_response['success'] is True:
            print("Your request is approved")
            approval_response = {
                "@type": "MessageCard",
                "@context": "https://schema.org/extensions",
                "summary": "This is the summary property",
                "themeColor": "#008000",
                "sections": [
                    {
                        "activityTitle": "**Approved**",
                        "activitySubtitle": "Request was approved after ""review"
                ]
            header = {
                'content-type': 'application/json'
            print("Sending Notification to MS Teams Channel")
            uc_response = requests.post(teams_incoming_webhook,
                data=json.dumps(approval_response), headers=header)
            format_response = json.loads(uc_response.text)
            print(format_response)
elif team_button=="Rejected":
   print("Reqeust Denied")
    reject_response = {
        "@type": "MessageCard",
        "@context": "https://schema.org/extensions",
        "summary": "This is the summary property",
        "themeColor": "#FF0000",
        "sections": [
                "activityTitle": "**Rejected**",
                "activitySubtitle": "Request was rejected after review"
            },
       1
   print("Sending Notification to MS Teams Channel")
   uc_response = requests.post(teams_incoming_webhook,
       data=json.dumps(reject response),
       headers={'CARD-UPDATE-IN-BODY': 'True',
```

'Content-Type': 'application/json'})
print("Teams Response: ", uc_response.status_code)

Microsoft Teams Integration

Key Features

Feature	Description
Send Message	With Send Message function we can send a notification message to the Microsoft Teams channel with the current task instance details such as job failure, late start/run, and other important events.
Approval Notification	With Approval notifications, an interactive message is sent to the Microsoft Teams incoming channel. The user can chose to Approve or Reject the continuation of workflow execution.

Import Microsoft Teams Integration Built-In Universal Template

To use the built-in Universal Template, you first must perform the following steps:

- 1. This Universal Task requires the Resolvable Credentials feature. Check that the Resolvable Credentials Permitted system property has been set to true.
- 2. Copy or Transfer the Universal Template file to a directory that can be accessed by the Universal Controller Tomcat user.
- 3. In the Universal Controller UI, select Configuration > Universal Templates to display the current list of Universal Templates.
- 4. Right-click any column header on the list to display an Action menu.
- 5. Select Import from the menu, enter the directory containing the Universal Template file(s) that you want to import, and click OK.

When the files have been imported successfully, the Universal Template will appear on the list.

Configure Microsoft Teams IntegrationUniversal Task

For the new Universal Task type, create a new task, and enter the task-specific details that were created in the Universal Template.

Field Descriptions for Microsoft Teams Integration Universal Task

Field	Description
Send Message	
Teams Function	Send Message or Approval Notification.
Job Name	Name of the job, by default it takes the current job name \${ops_task_name}.
Job Status	Status of the job, by default it takes the current job name \${ops_status}.
MS Teams Webhook	The incoming web hook of Microsoft Teams channel.
Execution User	Details of the execution user, by default takes the current user name \${ops_execution_user}.

Job type	Task type of task instance, by default takes the current task instance type \${ops_task_type}.
Message Title	The title of the message sent to Microsoft Teams channel.
Message Text	The text of the message sent to Microsoft Teams channel.
Approval Notificati	on
API Endpoint	URL of the Serverless infrastructure endpoint.

Examples for Microsoft Teams Integration Universal Tasks

Send Message

- Microsoft Teams Inte	gration Details		
Teams Function :	Approval Notification	Job Name :	\${job_name}
Job Status :	\${task_status}	MS Teams Webhook :	xxxxxx
Execution User :	\${exec_user}	Job Type :	\${job_type}
Message Title :	Task Notification	Message Text :	You can refer to the following details for updates on the current \ldots
API Endpoint :	XXXXXX		

Task Notifica	ion	
You can refer to	the following details for updates on the current Task	
Notification	or Microsoft Teams	
Job Status:	DEFINED	
Executed by:	Operations	

Approval Notification

- Microsoft Teams Inte	gration Details		
Teams Function :	Approval Notification	Job Name :	\${job_name}
Job Status :	\${task_status}	MS Teams Webhook :	xxxxxx
Execution User :	\${exec_user}	Job Type :	\${job_type}
Message Title :	Task Notification	Message Text :	You can refer to the following details for updates on the current
API Endpoint :	XXXXXX		

inoming 1:14 PM		
 Pending approval		
Task Notification		
Approval Needed for: APPROVAL FOR SAP DATA UPLOAD Please review the approval request		
Job Status: ACTION REQUIRED		
Executed by: Operations		
Approve Reject		
Reason (optional)		
Submit		
😑 Reply		
inoming 1:14 PM		
Approved Request was approved after review		
e Reply		

Document References

This document references the following documents:

Name	Location	Description
Universal Templates	https://docs.stonebranch.com/confluence/display/UC70/Universal+Templates	User documentation for creating Universal Templates in the Universal Controller user interface.
Universal Tasks	https://docs.stonebranch.com/confluence/display/UC70/Universal+Tasks	User documentation for creating Universal Tasks in the Universal Controller user interface.
Microsoft Teams Wenhooks	https://docs.microsoft.com/en-us/microsoftteams/platform/webhooks-and-connectors/how-to/add-incoming-webhook	User documentation for creating incoming webhooks in Microsoft Teams Channel.
Requests	https://pypi.org/project/requests/#description	Documentation for python requests module.

PagerDuty

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 - PagerDuty Update Incident Note
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 - Create User in PagerDuty
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Introduction

This Universal Task allows Stonebranch users to notify PagerDuty (Incident management platform) in the event of job Failure or long run of a job or Early finish of a job or any other event in Universal Controller. Furthermore, PagerDuty can help to aggregate alerts and group them, and provide reliable notifications, automatic escalations and on-call scheduling that could help fix support issues quickly.

Overview

Users can orchestrate the following functionalities in PagerDuty using this Universal Task:

• PagerDuty Incident

- Create Incident
- List Incidents
- Update Incident Notes
- PagerDuty Event
 - Create PagerDuty Event
- PagerDuty User Management
 - Create a user in PagerDuty
 - Delete a user in PagerDuty

Software Requirements

This integration requires an Universal Agent and a Python runtime to execute the Universal Task against PagerDuty.

Software Requirements for Universal Template and Universal Task

Requires Python 3.6 or higher. Tested with the Universal Agent bundled Python distribution.

- Python modules required
 - requests

Software Requirements for Universal Agent

- Universal Agent for Windows x64 Version 6.6 and later with Python options installed
- Universal Agent for Linux Version 6.6 and later with Python options installed

Software Requirements for Universal Controller

Universal Controller Version 6.6.0.0 and later

Software Requirements for the Application to be Scheduled

This Universal Task has been tested with PagerDuty REST API V2 for incidents functionalities ,User creation & deletion and Events API V2 for event creation in PagerDuty.

Technical Considerations

- This task uses Python modules requests to make REST-API calls to the PagerDuty environment.
- PagerDuty API URL ,API token and PagerDuty user email would be required as basic input for this Universal Task.
- Refer to PagerDuty API URL: https://developer.pagerduty.com/api-reference/

Key Features

Feature	Description
Create Incident	This feature helps to create an incident in PagerDuty for an event in Universal Controller; for example: Job Failure or Job running longer.

List Incidents	List Incidents that are in PagerDuty with status triggered or resolved or acknowledged for a PagerDuty service ID.
Update Incident notes	Update a work note for an existing incident in PagerDuty.
Create Event	Create an event in PagerDuty; Specifying the details of the event in Universal Controller; severity, Job Name, Job Type, Description, Event Action.
Create User	Creates an user account in PagerDuty.
Delete User	Deletes an user account in PagerDuty.

Import PagerDuty Integration Built-In Universal Template

To use the built-in Universal Template, you first must perform the following steps:

- 1. This Universal Task requires the Resolvable Credentials feature. Check that the Resolvable Credentials Permitted system property has been set to true.
- 2. Copy or Transfer the Universal Template file to a directory that can be accessed by the Universal Controller Tomcat user.
- 3. In the Universal Controller UI, select Configuration > Universal Templates to display the current list of Universal Templates.
- 4. Right-click any column header on the list to display an Action menu.
- 5. Select Import from the menu, enter the directory containing the Universal Template file(s) that you want to import, and click OK.

When the files have been imported successfully, the Universal Template will appear on the list.

Configure PagerDuty Integration Universal Task

For the new Universal Task type, create a new task, and enter the task-specific details that were created in the Universal Template.

Field Descriptions for PagerDuty Integration Universal Task

Field	Description
PagerDuty Function	Select the functions that needs to be performed in PagerDuty.
PagerDuty API URL	For Event creation select : https://events.pagerduty.com/v2/enqueue and other functionality select : https://api.pagerduty.com/.
PD API Token /Routing Key	Provide the API token for incident and routing key for Event creation.
PD User Email	Provide the valid Pager Duty user Email address.
Summary	specify the incident title or an event summary.
Incident/Dedup Key	Provide an Incident key for PagerDuty incident E.g: Universal Controller job name.
PagerDuty Service ID	Service ID in PagerDuty where the incident needs to be created.
Incident Details	Provide the incidents that needs to be in pager duty.
Urgency	Select the urgency of the event in Universal Controller.
Conference Number	Conference Bridge Details for the meeting (Incase if the support needs to gets in to conference call).
Conference URL	URL for the conference meeting.

Incident ID	Provide the PagerDuty incident ID (Incase where the PagerDuty Incident note needs an update).
Incident Note	Include the note that needs to be updated for the incident.
Select Incident Status	Select the status for which the incident details needs to be retrieved from PagerDuty.
Event Action	Select the appropriate event Action trigger or acknowledge or resolve.
Severity	Select either one of the status that would be appropriate (Critical, Error, Warning, and Info).
Event Source System	The unique location of the affected system, preferably a hostname or FQDN.
Job Type	provide the job type which will fit in the component field of the pager duty event.
Job Status	Job status that will fit in to the class field for the pager duty event creation.
User ID	PagerDuty User ID.
Name	Name of the PagerDuty user.
User Email Address	User's Email Address.
Job Title	Provide the Job title of the user.
User Role	The role of the user; for example, administration.
Time Zone	Specify the user time zone.
Summary	Summary about the user creation request.

Examples for PageDuty Integration Universal Tasks

Create Incident in PagerDuty

PagerDuty Function :	Create Incident	~	PagerDuty API URL :	https://api.pagerduty.com/		
PD API Token /Routing Key :	pagerduty-Apitoken	× =		ravi.murugesan@stonebranch.com		
Summary :	demo-inicident-UAC		Incident/Dedup Key :	demo-job-3		
agerDuty Service ID :	PS8NBAT		Incident Details :			
Urgency :	low	~	Conference Number :			
Conference URL :						
Runtime Directory :						
Runtime Directory :					٢	C
Runtime Directory : Environment	Name		Value		٢	C

List Incidents in PagerDuty

PagerDuty Details -						
PagerDuty Function :	List Incidents 🗸 🗸	Pag	erDuty API URL :	https://api.pagerduty.com/		~
PD API Token /Routing Key :	pagerduty-Apitoken 👻 📰	PagerDu	y Service ID :	PS8NBAT		
Select Incident Status :	acknowledged v					
Runtime Directory :						
					\bigcirc	0
Environment	Name		Value			
Variables :		No items	to show.			

PagerDuty Update Incident Note

 PagerDuty Details – PagerDuty Function : 	Update Incident Notes	▼ Pag	erDuty API https://api.pagerduty.com/		*
PD API Token /Routing Key :	pagerduty-Apitoken	V PD Us	er Email : ravi.murugesan@stonebranch.com		
Incident ID :	8				
Incident Note :	Job failure fixed and incident can be set to resolved	status			
Runtime Directory :				0	
Environment	Name		Value		
Variables :		No items	to show.		

Create Event in Pager Duty

PagerDuty Details -						
PagerDuty Function :	Create Event 🗸	Page	erDuty API URL :	https://events.pagerduty.com/v2/enqueue		~
PD API Token /Routing Key :	pagerduty_IntegrationKey	s	ummary :	\${ops_trigger_task_name}		
Incident/Dedup Key :	\${ops_trigger_task_name}	Eve	nt Action :	trigger		~
Severity :	critical 🗸	Eve	nt Source System :	\${ops_agent_name}		
Job Type :	\${ops_task_type}	J	b Status :	\${ops_status}		
Runtime Directory :						
					\odot	0
Environment	Name		Value			
Variables :		No items	to show.			

Create User in PagerDuty

- PagerDuty Details - PagerDuty	Create User	PagerDuty	API https://api.pagerduty.com/
	pagerduty-Apitoken		AL: ravi.murugesan@stonebranch.com
		User	ID : jdoe
Name :	John doe	User En Addres	nail john.doe@stonebranch.com
Job Title :	IT Operations	User Ro	ole : admin
Time Zone :		Summa	ary : User Created by Universal controller
Runtime Directory :			
			0 0
Environment	Name	Value	
Variables :		No items to show	ν.

Delete User in PagerDuty

PagerDuty Details -		
PagerDuty Function :	Delete User PagerDuty API URL : https://api.pagerduty.com/	
PD API Token /Routing Key :	pagerduty-Apitoken	
User Email Address :	john.doel@stonebranch.com	
Runtime Directory :		
	© ©	
Environment	Name Value	
Variables :	No items to show.	

Document References

This document references the following documents:

Name	Location	Description
Universal Templates	https://docs.stonebranch.com/confluence/display/UC70/Universal+Templates	User documentation for creating Universal Templates in the Universal Controller user interface.
Universal Tasks	https://docs.stonebranch.com/confluence/display/UC70/Universal+Tasks	User documentation for creating Universal Tasks in the Universal Controller user interface.

Universal Controller 7.0.x Available Integrations

Power BI

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 - Select the Group that Contains the dataset to Refresh
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Introduction

This Universal Task allows Stonebranch users to perform end-to-end Orchestration and Automation of Jobs & Clusters in Databricks environment, either in AWS or Azure.

Overview

- This task will use the Databricks URL and the user bearer token to connect with the Databricks environment.
- · Users can perform the following with respect to the Databricks jobs.
 - Create and list jobs

- · Get job details
- Run now jobs
- Run submit jobs
- Cancel run jobs
- Also with respect to Databricks clusters, this Universal Task can perform the following operations:
 - · Create, start and restart a cluster
 - Terminate a cluster
 - Get a cluster info
 - List clusters
- With respect to Databricks DBFS , this Universal Task also provides a feature to upload larger files.

Software Requirements

Software Requirements for Universal Agent

- Universal Agent for Linux or Windows Version 7.0.0.0 or later is required.
- Universal Agent needs to be installed with python option (--python yes).

Software Requirements for Universal Controller

• Universal Controller Version 7.0.0.0 or later is required.

Software Requirements for the Application to be Scheduled

A Microsoft PowerBI Service User and Password are required

To use the Power BI REST API, a client application ID must be obtained by registering an application with Azure Active Directory. This registration can be completed via the four-step process at the following portal: Onboarding Embed Tool

Key Features

Some details about Universal Tasks for PowerBI:

- Refresh a dataset in a group-workspace or in my workspace.
- Refresh a dataflow in a group-workspace.
- Lookup datasets in a selected Group.
- Lookup dataflows in a selected Group.
- Connection to PowerBI Service REST API is done via the python MSAL library.
- Supports Windows and Linux Universal Agents in order to connect to the PowerBI REST API.

Current Limitations

- When a Power BI dataflow refresh fails, no detailed error description is provided by the current Power BI REST API.
- Canceling of dataflow is not provided by the current Power BI REST API.
- The task will be updated as soon as this feature is available by Microsoft.
- Canceling of a dataset refresh will be provided in the next Version.

Import the Power BI Universal Template

To use the Power BI Universal Template, you first must perform the following steps:

- 1. This Universal Task requires the Resolvable Credentials feature, check that the Resolvable Credentials Permitted system property has been set to true.
- 2. Download the provided ZIP file.
- 3. In the Universal Controller UI, select Administration > Configuration > Universal Templates to display the current list of Universal Templates.
- 4. Click Import Template.
- 5. Select the template ZIP file and Import.

When the template has been imported successfully, the Universal Template will appear on the list. Refresh your Navigation Tree to see these tasks in the Automation Center Menu.

Configure Power BI Universal Tasks

For Universal Task Power BI, create a new task and enter the task-specific Details that were created in the Universal Template.

Field Descriptions for Power BI Universal Task - Actions

The PowerBI Task provides two different Actions.

- refresh dataset
- refresh dataflow

For each action the specific fields are described and an example is provided.

refresh dataset - Action

The Action refreshes a dataset in a group-workspace or in the my workspace.

Field	Description
Power BI Credentials	Power BI Service User and Password.
client_id	Power BI Client ID.
	To use the Power BI REST API, a client application ID must be obtained by registering an application with Azure Active Directory.
	This registration can be completed via the four-step process at the following portal: Onboarding Embed Tool
Domain	Domain name.
	Go to Microsoft Azure> Azure Active Directory lookup: Primary domain (for example, psemeaaz.onmicrosoft.com)
Action	[refresh dataset, refresh dataflow]
	refresh dataset: Refreshes a dataset in a Group or my workspace.
	refresh dataflow: Refreshes a dataflow in a Group.
Group	In this field, the Group is selected, which contains the dataset to refresh. A Group is a workspace within Power BI.

	When pressing the magnifier you can dynamically choose the available Groups in your Power BI account (see Select the Group that Contains the dataset to Refresh).
	To select the My workspace, choose None; None as Group.
Dataset	Power BI dataset name.
	Power BI datasets represent a source of data ready for reporting and visualization
	When pressing the magnifier, you can dynamically choose from the datasets in the Group you pre-selected in the Group field (see Select dataset to Refresh).
Monitor Interval [s]	Default is 60s.
	The Monitor Interval is the frequency that the Universal Task checks the current refresh status of the dataset.
	The Maximum number of checks is defined by the field value Number of Monitor Retries.
	For example, Monitor Interval 60s and Number of Monitor Retries = 120 means that every 60s, the current refresh status is retrieved from Power BI, but only 120 times (120 x 60s = 2h). If after 2h, the refresh could not be completed, the Universal Task will go into status failed.
Number of	Default is 120 Monitor Retries.
Monitor Retries	The Number of Monitor Retries value is the the Maximum number of refresh status checks. As long as the refresh status is unknown, a retry will be performed with the frequency defined in the Monitor Interval [s] field.
	If the maximum number is reached the task will go into status failed.
	(See the Monitor Interval [s] field Description for an example.)
Log level (default is Inherited)	Universal Task logging settings: [Inherited Trace Debug Info Warn Error Severe]

Example for Power BI Universal Task - Action: refresh dataset

The following example refreshes a dataset in group.

refresh dataset - Action

Domain: psemeaaz Action: refresh_dataset Monitor refresh_dataset				6	🗐 Update 📮	Сору 🗔	Launch Task 🚡 Vie	w Parents 📓 Delete	🔄 Refre	sh 🐹 Cl
Task Name: PowerBi refresh.dataset in group Version: 10 Task Description: Member of Business Services: Resolve Name Immediately: Immediately: Inmediately: Inmediately: Inmediately: Inmediately: Inmediately: Inmediately: Inmediately: Inmediately: Inmediately: Interview Interview <t< th=""><th>PowerBi Task</th><th>Variables</th><th>Attions</th><th>- virtua</th><th>l Resources</th><th>- N</th><th>Autually Exclusive</th><th>Instances</th><th></th><th>4 1</th></t<>	PowerBi Task	Variables	Attions	- virtua	l Resources	- N	Autually Exclusive	Instances		4 1
Task Description: Member of Business Services: Resolve Name Immediately: Hold on Start: Hold on Start: Log Level: Inherited Agent Details Cluster: Agent: S(AGT_LINUX) Agent Variable: Variable	Jeneral —									
Member of Business Services: Resolve Name Immediately: Hold on Start: Virtual Resource 10 Privitiques: Inherited Agent Details Circedentials: Privitiques: Interact with Desktop: ProverBi Details Group: group3/2f76d8bc-a4c7-47ad-b49e-06b166902c02 PowerBi Details PowerBi Details Circedentials: Privitiques: Interact with Demain: psemeaaz Action: Irefresh_dataset Olentrici (1: 908aea47.365e-403c-820a-c63fb0304bed	Task Name :	PowerBI - refresh dat	aset in group			Version :	10			
Business Services : Resolve Name Immediately : Hold on Start : Virtual Resource 10 Priority : Log Level : Inherited · Agent Details Cluster : Agent : S{AGT_LINUX} Credentials : Run with Highest : Privileges : Interact with Desktop : Domain : psemeaaz Action : refresh_dataset · Magent Jable : PowerBi Details · Credentials : PowerBi Details · PowerBi Details · Domain : psemeaaz · Action : PowerBi Details · PowerBi Det	Task Description :									
Resolve Name Immediately: Hold on Start: Virtual Resource: Priority: Log Level: Inherited Grup: group3;2f76d8bc-a4c7-47ad-b49e-06b166902c02 PowerBi Domain: psemeaaz Action: refresh_dataset: Olimerdia Number of Meading	Business									*
Virtual Resource Priority : Inherited Agent Details Cluster : Agent : S(AGT_LINUX} Credentials : Run with Highest Privileges : Interact with Desktop : CrowerBi Details CrowerBi Details PowerBi Details Credentials : PowerBi Details PowerBi Details Credentials : PowerBi Details PowerBi Details	Resolve Name						System Default		•	
Priority : IU Failure : Failure : Green Details										
Agent Details Cluster:	Virtual Resource Priority :	10		-	Hold Res					
Cluster : Agent : S{AGT_LINUX} Credentials : Privileges : Interact with Desktop : PowerBi Details Credentials : PowerBi Details PowerBi Details PowerBi perivily : Domain : psemeaaz Action : refresh_dataset : Manier Interact : PowerBi Details : PowerBi powerBi powerBi powerBi powerbi_credentials : Credentials : PowerBi credentials	Log Level :	Inherited		-						
Group : group3;2f76d8bc-a4c7-47ad-b49e-06b166902c02 PowerBi powerBi powerBi Credentials Domain : psemeaaz client_idl : 908aea47-365e-403c-820a-c63fb0304bed Manine Interval Number of Manine Number of Manine										
Group : group 3;217688bc-a4c7-47ac-b49e-06b166902c02 Credentials : powerbi_credentials : Domain : psemeaaz client_id : 908aea47-365e-403c-820a-c63fb0304bed Monitor Interval Number of Monitor	Cluster : Agent : Credentials : Run with Highest Privileges : Interact with					Oredentials				
Action : refresh_dataset client_id : 908aea47-365e-403c-820a-c63fb0304bed	Cluster : Agent : Credentials : Run with Highest Privileges : Interact with Desktop :					Oredentials				
Monitor Interval	Cluster : Agent : Credentials : Run with Highest Privileges : Interact with Desktop :		07-47ad-b49e-06b166			Oredentials Variable : PowerBi				•
Monitor Interval 000 Number of Monitor 0000	Cluster : Agent : Credentials : Run with Highest Privileges : Interact with Desktop : PowerBi Details Group :	group3;2f76d8bc-a4c	57-47ad-b49e-06b164			Oredentials Variable : PowerBi				*
	Cluster : Agent : Credentials : Run with Highest Privileges : Interact with Desktop : PowerBi Details Group : Domain :	group3;2f76d8bc-a4c	27-47ad-b49e-06b164			PowerBi redentials	powerbi_credentials		1	*

Select the Group that Contains the dataset to Refresh

Refresh Group Choices		
Agent :	LONDON	-
Credentials :		*
PowerBi Credentials :	powerbi_credentials	* 📰
Domain :	psemeaaz	
client_id :	908aea47-365e-403c-820a-c63fb0304bed	

Select dataset to Refresh

Refresh Dataset Choice	es	
Agent :	LONDON	• 🖻
Credentials :		× 📰
Group :	None;None	- 🔍
PowerBi Credentials :	powerbi_credentials	• E=
Domain :	psemeaaz	
client_id :	908aea47-365e-403c-820a-c63fb0304bed	

refresh dataflow - Action

This Action refreshes a dataflow in group.

Description
Power BI Service User and Password.
Power BI Client ID.
To use the Power BI REST API, a client application ID must be obtained by registering an application with Azure Active Directory.
This registration can be completed via the four-step process at the following portal: Onboarding Embed Tool
Domain name.
Go to Microsoft Azure > Azure Active Directory lookup: Primary domain (for example, psemeaaz.onmicrosoft.com)

Action	[refresh dataflow, refresh dataflow]
	refresh dataflow: Refreshes a dataflow in a Group or my workspace.
	refresh dataflow: Refreshes a dataflow in a Group.
Group	In this field, the Group is selected, which contains the dataflow to refresh. A Group is a workspace within Power BI.
	When pressing the magnifier you can dynamically choose the available Groups in your Power BI account (see Select the Group that Contains the dataflow to Refresh).
	To select the My workspace, choose None; None as Group.
Dataflow	Power BI dataflow name.
	Power BI dataflows are Power Query processes running in the cloud, with the same set of data preparation functionalities, data source connectors, gateways, and transformations.
	When pressing the magnifier, you can dynamically choose from the dataflows in the Group you pre-selected in the Group field (see Select dataflow to Refresh).
Monitor Interval [s]	Default is 60s.
	The Monitor Interval is the frequency that the Universal Task checks the current refresh status of the dataflow.
	The Maximum number of checks is defined by the field value Number of Monitor Retries.
	For example, Monitor Interval 60s and Number of Monitor Retries = 120 means that every 60s, the current refresh status is retrieved from Power BI, but only 120 times (120 x 60s = 2h). If after 2h, the refresh could not be completed, the Universal Task will go into status failed.
Number of	Default is 120 Monitor Retries.
Monitor Retries	The Number of Monitor Retries value is the the Maximum number of refresh status checks. As long as the refresh status is unknown, a retry will be performed with the frequency defined in the Monitor Interval [s] field.
	If the maximum number is reached the task will go into status failed.
	(See the Monitor Interval [s] field Description for an example.)
Log level (default is Inherited)	Universal Task logging settings: [Inherited Trace Debug Info Warn Error Severe]

Example for Power BI Universal Task - Action: refresh dataflow

This example shows how a dataflow in a Group is refreshed,

refresh dataflow - Action

			📳 Upr	date 🔯 Copy 🗔	Launch Task 🚡 Vie	w Parents 🏙 Delete 📑 Refre	sh 🐹 Clo
PowerBiTask	 Variables 	Actions	Virtual Reso	urces 1	Autually Exclusive	• Instances	4 1
General							1 1
Task Name :	PowerBI - Refresh da	ataflow		Version :	7		
Task Description :							
Member of Business Services :							Ť
Resolve Name Immediately :				Time Zone Preference :	System Default	+	
Hold on Start :							
Virtual Resource Priority :	10		•	Hold Resources on Failure :			
Log Level :	Inherited		*	. and e.			
Cluster : Agent :	S{AGT_LINUX}			Agent Variable :			
Credentials :			· • =	Credentials Variable :			
Run with Highest Privileges :							
Interact with Desktop :							
PowerBi Details —							_
Group :	group3;2f76d8bc-a4	c7-47ad-b49e-06b16690	2c02 🔹 🔍	PowerBi Credentials :	powerbi_credentials	3	•
Domain :	psemeaaz			Dataflow :	dfazure;e8b64b4f-b	98d-43e8-85eb-1b5c69d320b0	• 🔍
4 100	refresh_dataflow			client_id :	908aea47-365e-403	3c-820a-c63fb0304bed	
Action :	Terresin_datanow						

Select the Group that Contains the dataflow to Refresh

Refresh Group Choices		
Agent :	LONDON	-
Credentials :		*
PowerBi Credentials :	powerbi_credentials	* 🔄
Domain :	psemeaaz	
client_id :	908aea47-365e-403c-820a-c63fb0304bed	

Select dataflow to Refresh

Refresh Dataflow Choi	ices	*
Agent :		* 📰
Credentials :		¥ 📰
Group :	group3;2f76d8bc-a4c7-47ad-b49e-06b166902c02	* 🖏
PowerBi Credentials :	powerbi_credentials	· ·
Domain :	psemeaaz	
client_id :	908aea47-365e-403c-820a-c63fb0304bed	

Salesforce

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- Examples for Salesforce Universal Tasks
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 - Execute SOQL
- Document References

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Introduction

This Universal Task allows users to create contact and lead objects in Salesforce, as well as execute Salesforce Object Query Language (SOQL) queries.

Overview

- Allows advanced automation by enabling creation of Salesforce objects, such as Contact and Leads, from the Universal Controller in combination with event-based triggers.
- Uses the Salesforce Object Query Language (SOQL) to search your organization's Salesforce data for specific information.
- SOQL is similar to the SELECT statement in the widely used Structured Query Language (SQL), but is designed specifically for Salesforce data.
- · With SOQL, users can construct simple but powerful query strings and execute them from within the Universal Controller.

Software Requirements

This integration requires an Universal Agent and a Python runtime to execute the Universal Task against a remote ServiceNow instance.

Software Requirements for Universal Template and Universal Task

- Requires Python 3.6 or higher. Tested with the Universal Agent bundled Python distribution.
- Python modules required:
 - simple-salesforce

Software Requirements for Universal Agent

Either:

- Universal Agent for Windows x64 Version 6.9.0.0 and later with python options installed
- Universal Agent for Linux Version 6.9.0.0 and later with python options installed

Software Requirements for Universal Controller

• Universal Controller Version 6.9.0.0 and later

Software Requirements for the Application to be Scheduled

The simple-salesforce Python module uses the Lightning Platform REST API. Salesforce supports each API version for a minimum of three years from the date of first release.

The module is also updated regularly to add features and support new API versions.

Universal Task Description

Key Features

Feature	Description
Create Contact, Lead	Create Contact and Lead objects in Salesforce. Combine with event-based triggers or use within workflows to create these objects as a result of events or predecessors.
Execute SOQL query	Query the Salesforce Database using the flexible querying language SOQL. Uses the Universal Controller script library to store and maintain SOQL scripts.

Please note: More functions can easily be added to this Universal Task, based on the available functionality of the simple-salesforce Python module. More fields to hold more information on; for example, Leads or Contacts can also be added to the Universal Template.

Import Salesforce Built-In Universal Template

To use the built-in Universal Template, you first must perform the following steps:

- 1. This Universal Task requires the Resolvable Credentials feature. Check that the Resolvable Credentials Permitted system property has been set to true.
- 2. Copy or Transfer the Universal Template file to a directory that can be accessed by the Universal Controller Tomcat user.
- 3. In the Universal Controller UI, select Configuration > Universal Templates to display the current list of Universal Templates.
- 4. Right-click any column header on the list to display an Action menu.
- 5. Select Import from the menu, enter the directory containing the Universal Template file(s) that you want to import, and click OK.

When the files have been imported successfully, the Universal Template will appear on the list.

Configure Salesforce Universal Task

For the new Universal Task type, create a new task, and enter the task-specific details that were created in the Universal Template.

Field Descriptions for Salesforce Universal Task

Field	Description
Credential	Username, Password and Security Token for your Salesforce user. Please use the "Passphrase" field for the Security Token.
Function	Select between the available functions of this Universal Task.
First Name	First name of the contact to be created.
Last Name	Last name of the contact to be created.
Email	Email address of the contact to be created.
SOQL Query	Script field. Stores the SOQL Query to be executed as a script in the internal script library.

Examples for Salesforce Universal Tasks

Create Contact

Environment Variables :	Name	Value No items to show.	
	News	Velue	0
untime Directory :			
Email :	john@doe.com		
First Name :	John	Last Name : Doe	
Function :	Create Contact	2	
creachtar.	Salesforce_Moritz	*	

Execute SOQL

F		100	Update 🛃 Upload Script 🛄 Copy 🚮	Delete 💲 Refresh 👗 Close
Contraction of the second	Script 🛛 Script			
	Details		10-10-1	
ent Details C	Description :	Salesforce SOQL_Moritz	Version :	6
1	Script Type :	Data	Resolve UAC Variables :	
Crede Run with F Priv		SELECT Id, FirstName, Las	Name, Email FROM Contact	
Inter: De	拱 Update	Copy Delete	Refresh Kolose	
esforce Details -				
Credential :	Salesforce_Moritz	*		
Function	Execute SOQL	*		

Document References

This document references the following documents:

Name	Location	Description
Universal Templates	https://docs.stonebranch.com/confluence/display/UC70/Universal+Templates	User documentation for creating Universal Templates in the Universal Controller user interface.
Universal Tasks	https://docs.stonebranch.com/confluence/display/UC70/Universal+Tasks	User documentation for creating Universal Tasks in the Universal Controller user interface.

SAP Batch Input

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- Field Descriptions for SAP Task for Batch Input
 - Task Variable
- Example for SAP Batch Input Task
 - SAP Batch Input: Session Overview
 - SAP Batch Input Task
 - Task Variable
 - Script

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Introduction

Batch input sessions enter data non-interactively into an SAP system. Batch input is typically used to transfer data from non-SAP systems to SAP systems or to transfer data between SAP systems.

This SAP Task for SAP batch input allows you schedule and execute batch input sessions in SAP.

Software Requirements

Software Requirements for Universal Agent

• Universal Agent for Linux or Windows Version 6.x or later is required, including SAP Connector license (USAP).

Software Requirements for Universal Controller

• Universal Controller 6.x or later is required.

Software Requirements for the Application to be Scheduled

This task allows you to run Batch Input session on the following SAP Systems:

- SAP ERP (SAP ECC 6.0)
- SAP S/4 HANA On Premise (not tested)

Key Features

Some details about the Universal Tasks for SAP Batch Input:

The SAP Task for SAP batch input allows you to schedule and execute batch input sessions in SAP

The following functionalities can be performed in UAC with respect to SAP Batch Input:

- Run a batch input session.
- You only need to provide the batch input session name in the task variable.
- It is possible to use wild cards "*" to run multiple Batch Input Sessions.
- There is no need to created manually a variant for the batch input session in SAP.
- The SAP Task uses the feature inline variants of USAP to create a temporary Variant for the ABAP RSBDCSUB with the batch input session name.

Import SAP Task for Batch Input

To use the SAP Task for Batch Input, you first must perform the following:

In the Universal Controller UI, select Automation Center > Tasks > All Tasks and load via the list Import functionality the Task XML files into the Controller (see Task List Import).

When the Task has been imported successfully, the Task will appear on the list of SAP Tasks in the Automation Center Menu under: Automation Center > Tasks > SAP Task

Configure SAP Task for Batch Input

- 1. Copy the imported "template" Task RUN SAP BATCH INPUT Session.
- 2. Provide a name according to your naming standards.
- 3. Adjust the field values to your requirements.

Field Descriptions for SAP Task for Batch Input

The SAP Task for Batch Input contains the following fields.

Field	Value	Description
Utility Agent	SAP Utility Agent	Universal Agent with SAP Connector (USAP)
SAP Connection	SAP Connection	SAP Connection to the SAP System in scope
		SAP Connections provide all the SAP server information necessary for Universal Controller to execute an SAP Task on an SAP system (see SAP Connection for details).

SAP Credentials	SAP Credentials	Login credentials that the Controller will use to access the SAP system.
Command Group	Submit	Submit the SAP Job to SAP.
start	checked	Starts the Submitted Job in SAP.
Wait	checked	Waits until the started Job in SAP finished or fails.
Definition or Model:	USAP Definition File	USAP Definition File.
Script or File System	Script	Script.
Script	new_variant	Script to run the Batch Input ABAP RSDBDCSUB with the temporary Variant containing the batch input session name.
SAP Command Options	-rawspool no	Output Parameter, to show the result of the ABAP RSDBDCSUB in the Task Output.

Task Variable

In the task Variable, you define the Batch Input Session to schedule. It is possible to use wild cards "*" to run multiple Batch Input Sessions.

Task Variable Name	Description
session_name	Name of the Batch Input Session(s) to schedule.
	Wild cards "*" are supported to run multiple Batch Input Sessions.

Example for SAP Batch Input Task

The following example runs a Batch Input Session.

SAP Batch Input: Session Overview

The following image shows the currently configured Batch Input Sessions in SAP.

In the following example, the Batch Input Session: Z_NBU_COM3 will be executed via the SAP Batch Input Task.

Batch Input	t: Se	ssion Overvi	iew							_ 🗆
9		~ « .		8 🖶	H IA 🚯	ti () ()		e 🔅		
Batch Input:	Sess	ion Overvie	w							
🕄 Analysis	🕞 Pr	ocess 📑 S	Statistics [H) Log	Recording	Ū 🗑	i 🖬 🏴	₹ ≞ (2 🗈	i
election criteria										
ess.: *		From:	To:		Created b	у: *				
Name -		Dec.	ocessed In	Process	In Background	Being C	Trantad Lov	cked		
New	In	correct Pro	JCesseu III	Process	In background			LKEU		
Session Name		Created By	Date	Time	Creation Pro		Authorizat.	Σ Trans	s. <mark>4</mark>	
·····				Time	Creation Pro				s. <mark>4</mark> 0	
Session Name	St	Created By	Date	Time 15:52:03	Creation Pro SAPMSBDT		Authorizat.			
Session Name Z_NBU_COM3	St	Created By DEVELOPER	Date 20.05.2021	Time 15:52:03 13:37:46	Creation Pro SAPMSBDT SAPMSBDT		Authorizat. DEVELOPER		0	
Session Name Z_NBU_COM3 Z_NBU_COM6	St	Created By DEVELOPER DEVELOPER	Date 20.05.2021 12.05.2021	Time 15:52:03 13:37:46 13:37:38	Creation Pro SAPMSBDT SAPMSBDT SAPMSBDT		Authorizat. DEVELOPER DEVELOPER		0 0	
Session Name Z_NBU_COM3 Z_NBU_COM6 Z_NBU_COM5	St	Created By DEVELOPER DEVELOPER DEVELOPER	Date 20.05.2021 12.05.2021 12.05.2021	Time 15:52:03 13:37:46 13:37:38	Creation Pro SAPMSBDT SAPMSBDT SAPMSBDT		Authorizat. DEVELOPER DEVELOPER DEVELOPER		0 0 0	
Session Name Z_NBU_COM3 Z_NBU_COM6 Z_NBU_COM5	St	Created By DEVELOPER DEVELOPER DEVELOPER DEVELOPER	Date 20.05.2021 12.05.2021 12.05.2021	Time 15:52:03 13:37:46 13:37:38	Creation Pro SAPMSBDT SAPMSBDT SAPMSBDT		Authorizat. DEVELOPER DEVELOPER DEVELOPER		0 0 0	
Session Name Z_NBU_COM3 Z_NBU_COM6 Z_NBU_COM5	st	Created By DEVELOPER DEVELOPER DEVELOPER DEVELOPER	Date 20.05.2021 12.05.2021 12.05.2021	Time 15:52:03 13:37:46 13:37:38	Creation Pro SAPMSBDT SAPMSBDT SAPMSBDT		Authorizat. DEVELOPER DEVELOPER DEVELOPER		0 0 0	

SAP Batch Input Task

AP Task Details: SAP	BATCH INPUT Session								
			📆 Update 🛄 Cop	y 🗔 Launch Ta	ask 🔓 View	Parents	💼 Delete	👍 Refresh	💥 Clo
SAP Task	Variables Actions	Virtual Resources	Mutually Exclus	ive	Instances	1	Triggers		• •
General									
Task Name :	SAP BATCH INPUT Session		Version :	2					
Task Description :	Runs the Batch Input Session provided in th	ne Task Variable (SM35)							
Member of Business Services :									
Resolve Name Immediately :			Time Zone Preference :	System Defa	ault		•		
Hold on Start :									
Virtual Resource Priority :	10	*	Hold Resources on Failure :						
Agent Details									
Cluster :									
Utility Agent :	S{AGT_LINUX_SAP}		Utility Agent Variable :						
Utility Credentials :		18	Utility Credentials Variable :						
SAP Details —									
SAP Connection :	S{var_sap_connection}		SAP Credentials :	S{var_cred_sa	p_connection)}			
SAP Connection Variable :			SAP Credentials Variable :	~					
Command Group :	Submit		SAP Language :	EN					
Definition or Model :	USAP Definition File	*							
Script or File System :	Script	¥							
Script :	Inline_variant_for_Batch_input_session								•
Start :									
Start Immediately :									
SAP Target Server :									
Wait :	~								
Print Job Log :									
Print Spooled Output :									
Print Application Log :									
Print Application RC :									
Use Application RC :									
Delete SAP Job on Completion :									
SAP Command Options :	-rawspool no								

Task Variable

In the task Variable, you define the Batch Input Session to schedule. It is possible to use wild cards "*" to run multiple Batch Input Sessions.

Details —		
Name	session_name	
	Z_NBU_COM3	
Value :		
escription :	Batch Input Session Name as created using SM35 in SAP	

Script

The USAP script dynamically creates a temporary Variant for the Batch Input session name.

Script 🔍 Tasks	Notes	Versions	
– Details –			
Script Name :	Inline_variant_for_E	Batch_inp	Version : 2
Description :			
Script Type :	SAP Definition	-	Resolve UAC Variables : 🗹
Content :	<pre>/** Description ** Script to n ** Author: Ni ** Version: 1. */ /* Job Header JOBNAME = "SAN JOB_CLASS = "C ; /* ABAP_STEP = "* /* STEP_NUMBEF</pre>	n 	Variants" : */ SUB"
Member of Business Services :			
🖷 Update 📑 Copy	ng Upload Script	🎢 Delete	🔯 Refresh 🛛 💥 Close

SAP Calendar Import

- Disclaimer
- Overview
- Software Requirements
 - Software Requirements Universal Agents and Controller
 - Software Requirements Universal Controller
 - Software Requirements for the Application to be scheduled
- Universal Task for SAP Calendar Import Key Features
- Import SAP Calendar Import Built-In Universal Template
- Configure SAP Calendar Definitions Task
- Field Descriptions for the SAP Calendar Import Definitions Task
- Example: SAP Import SAP Calendar Application Server Connection
- SAP Calendar Import Name
 - Example

Disclaimer

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Overview

This Universal Task allows you 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. The Calendar Import can be scheduled to be always in sync with SAP; for example, import all Calendar every day. It is also possible to import Calendars from different SAP System.

Software Requirements

Software Requirements Universal Agents and Controller

• Universal Agent for Linux or Windows Version 6.9.0.0 or later are required

Software Requirements Universal Controller

- Universal Controller 6.9.0.0. or later is required
- A Universal Controller license key with support for SAP connector is required

Software Requirements for the Application to be scheduled

In order to connect to the SAP System the SAP NetWeaver RFC SDK 7.50 libraries are required from SAP.

Those can be downloaded from the SAP Software Download: SAP NetWeaver RFC SDK 7.50

Universal Task for SAP Calendar Import Key Features

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, which match the configured selection criteria into the Universal Controller.
- The Calendar Import can be scheduled to be always in sync with SAP e.g. import all Calendar every day
- The csv list is saved incl. Versioning into the Universal Controller script library
- The Universal Task runs on Linux as well as Windows Universal Agents
- The calendar export is done using the SAP certified XBP-RFC interface
- SAP is always considered as the Master; Calendars are always export from SAP, never import to SAP.
- · All Calendar functionalities are support incl. Factory, Holiday and "Special Rules"
- Calendar can be imported from different SAP System automatically the SID and Client of the SAP, where the import was done is added as a Postfix to the imported Calendar
- · You can set different log-levels for the Universal task, providing you more information in case of issues
- Support for Application Server Connection and Destination Connection (nwrfc.ini) e.g. Load Balancer connections, SAP SNC, etc.

Import SAP Calendar Import Built-In Universal Template

To use the built-in Universal Template, you first must perform the following steps:

- 1. This Universal Task requires the Resolvable Credentials feature. Check that the Resolvable Credentials Permitted system property has been set to true.
- 2. Copy or Transfer the Universal Template file to a directory that can be accessed by the Universal Controller Tomcat user.
- 3. In the Universal Controller UI, select Configuration > Universal Templates to display the current list of Universal Templates.
- 4. Right-click any column header on the list to display an Action menu.
- 5. Select Import from the menu, enter the directory containing the Universal Template file(s) that you want to import, and click OK.

When the files have been imported successfully, the Universal Template will appear on the list.

Configure SAP Calendar Definitions Task

For the new Universal Task type, create a new task and enter the task-specific Details that were created in the Universal Template.

Field Descriptions for the SAP Calendar Import Definitions Task

Field	Description
Universal Controller URL	Universal Controller URL; for example,
	Local Universal Controller:
	http://192.168.88.10:8080/uc/
	Stonebranch SaaS Cloud Universal Controller:

	https://superstore.stonebranchdev.cloud/
Universal Controller Credentials	Credentials of the Universal Controller Webservice API
Import All Calendar	Yes No
	If "Yes" is selected all SAP Calendar based on the selection criteria entered in the fields: Start Year and Years are imported.
	If "No" is selected the Calendar provided in the Calendar Input File will be imported to Universal Controller
Start Year	From this year onwards the Calendar will be imported from SAP.
	Example: Start Year = 2020, Years = 2
	will import all calendar starting from 2020 until 2022
Years	Number of years to import starting from the year provide in the field Start Year.
First Day of Week	[Monday,Tuesday, Wednesday, Thursday, Friday, Sunday]
	Set the first day of the week for the calendar
Calendar Input File	This field is only used when the choice field import all calendar is set to No.
	The Calendar Input File file has the following structure:
	NOTE: If a factory calendar has no holiday calendar, then leave the filed empty; for example, 02, means extract factory calendar 02 without a holiday calendar.
	The format is:
	<factory calendar="" id="">,<holiday calendar="" id=""></holiday></factory>
	Example: calendar_import.csv
	factory_calid, holiday_calid
	01,08 02,
	AJ,04
Language	SAP Language e.g. EN for English
SAP Connection Type	[Application Server Connection NRFW.ini Connection)]
	Select the SAP Connection Type:
	Application Server Connection or Destination Connection using the nwrfc.ini file.
	Default location for the nwrfc.ini file is:
	 Linux: /opt/universal/uagsrv Windows: C:\Program Files\Universal\UAGSrv
SAP Credentials	Credentials of the SAP System
SAP ASHOST	SAP Application to connect to.
	This field is only visible in case of SAP Connection Type = "Application Server Connection"
SID	SAP System Identifier (3 digits); for example, NPL

	The Imported calendar will have the SID as prefix
	Imported Calendar Name:
	< SID >_ <sap client="">_<sap calendar="" id=""></sap></sap>
SAP CLIENT	SAP Client (3 digits); for examaple, 100
	The Imported calendar will have the SID as prefix
	Imported Calendar Name:
	<sid>_<SAP CLIENT>_<sap calendar="" id=""></sap></sid>
SAP SysNr	SAP System Number (2 digits) e.g. 00
SAP Destination	SAP Destination in the nwrfc.ini.
	This field is only visible in case of SAP Connection Type = "NRFW.ini Connection"
Loglevel	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]
USAP loglevel	Loglevel of the Universal Connector for SAP
	trace audit info warn error
Calendar Input File	This field is only used when the choice field import all calendar is set to No.
	The Calendar Input File file has the following structure:
	NOTE: If a factory calendar has no holiday calendar, then leave the filed empty; for example, 02, means extract factory calendar 02 without a holiday calendar.
	The format is:
	<factory calendar="" id="">,<holiday calendar="" id=""></holiday></factory>
	Example: calendar_import.csv
	factory_calid,holiday_calid
	01,08 02, AJ,04

Example: SAP Import SAP Calendar - Application Server Connection

- General			
Task Name :	SAP Import Calendar - ASHOST	Version :	17
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 :	
 Agent Details 			
Cluster :			
Agent :	\${AGT_WIN_LOCAL}	Agent Variable :	
Credentials :	× =	Credentials Variable :	
Run with Highest Privileges :			
Interact with Desktop :			
- SAP Import Calenda	rs Details		
SAP Connection Type :	Application Server Connection]	
	192.168.88.17	SID :	NPL
Client :	001	SAP Credentials :	SAP_CRED_WIESLOCH
SAP SysNr :	00	Import all Calendar :	No
Calendar Input File :	SAP-CAL-IMPORT	Language :	en
Years :	1	Start Year :	2020
Universal Controller Credentials :	CRED-REST API - Bill	Universal Controller URL :	http://127.0.0.1:8080/uc
USAP Loglevel :	info v	Loglevel :	DEBUG
First day of the week :	Monday v	-	

SAP Calendar Import Name

The Imported calendar will have the following naming in Universal Controller:

<SID>_<**SAP CLIENT**>_<SAP CALENDAR ID>

Example

NPL_100_01

SID = NPL, CLIENT = 100, SAP Factory Calendar ID = 01

Universal Controller 7.0.x Available Integrations

SAP Data Services

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- Software Requirements
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 - Software Requirements for Universal Controller
 - Software Requirements for the Application to be Scheduled
- Key Features
- Current limitations
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- Configure SAP Data Services Tasks
- Field Descriptions for SAP Data Services Tasks
- Example for SAP Data Services Task
- SAP Data Services Processing Steps
 - 1. Job Configuration in Data Service Designer
 - 2. Export job execution command in SAP Data Service Management Console
 - 3. Configure the SAP Data Services Task to run the exported job in Universal Controller
 - 4. Launch the Universal Task
 - 5. Verify job execution in SAP Data Service Management Console

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Introduction

Using analytics tools to collect massive amounts of Big Data from your organization is one thing. Extracting meaning from that data and using it to drive real growth is another. Business Objects analytics from SAP can help you unleash the power of collective insight by delivering enterprise business intelligence, agile visualizations, and advanced predictive analytics to all users.

Leverage the capabilities of SAP® Business Objects and schedule any SAP Business Object Data Services ETL job in Stonebranch's Universal Automation Center by using the "AL_RWJobLauncher.exe" utility, which comes with the SAP Data Services installation.

This Universal Task allows you to execute an SAP Data Services "ETL" Job using the "AL_RWJobLauncher.exe".

Software Requirements

Software Requirements for Universal Agent

- Universal Agent for Linux or Windows Version 6.9.0.0 or later is required.
- Universal Agent needs to be installed with python option (--python yes).

Software Requirements for Universal Controller

• Universal Controller 6.9.x or later is required.

Software Requirements for the Application to be Scheduled

- This Universal Task was tested against SAP Data Services 4.2 SP7.
- The Data Service Server needs to have a Universal Agent installed to call the AL_RWJobLauncher.exe utility.

Key Features

- It is based on the "AL_RWJobLauncher.exe". which is part of the Data Services Install.
- The Task runs on Data Services for Windows and Linux.
- The Universal Task provides the same error and trace information as the SAP Data Services Mgt. Console.
- You can select different log-levels ; for example, Info and Debug.
- You can configure all connection Parameters via the Universal Task.
- For all Parameters an exception handling has been implemented.

Current limitations

• Currently,only "Enterprise Security" is supported.

Import SAP Task for Batch Input

To use the SAP Data Services Universal Template, you first must perform the following steps:

- 1. This Universal Task requires the Resolvable Credentials feature. Check that the Resolvable Credentials Permitted system property has been set to true.
- 2. Download the provided ZIP file.
- 3. In the Universal Controller UI, select Administration > Configuration > Universal Templates to display the current list of Universal Templates.
- 4. Click Import Template.
- 5. Select the template ZIP file and Import.

When the template has been imported successfully, the Universal Template will appear on the list. Refresh your Navigation Tree to see these tasks in the Automation Center Menu.

Note

If you have Universal Controller 6.9., you must import the Universal Template via an XML list import. In Universal Controller, go to "All Tasks" and load the Universal Template XML file, via the Import function, into the Controller.

Configure SAP Data Services Tasks

For Universal Task SAP Data Services, create a new task and enter the task-specific Details that were created in the Universal Template.

Field Descriptions for SAP Data Services Tasks

The following fields must be configured for the SAP Data Services Task.

Field	Description
Agent	Universal Agent installed on the SAP Data Services Server.
	This Agent runs the AL_RWJobLauncher.exe CLI.
Jobserver Hostname	Name of the Jobserver, which runs the Data Services Job. The Jobserver can be looked up in the SAP Data Service Management Console under: Administrator -> Bata
Job server port	Port of the Jobserver, which runs the Data Services Job. The Jobserver Port can be looked up in the SAP Data Service Management Console under: Administrator -> Batch
Path to AL_RWJobLauncher. exe	Location, where the AL_RWJobLauncher.exe is installed on the SAP Data Services Server.
Jobdir	Directory, where the Job execution files are exported to. The directory must contain the following files: <jobname>.txt and <jobname>.bat Note: Those files are available only if the job Export job execution command has been performed in advance in the SAP Data Service Management Console. In the example above, the files have the names: • <i>loadinv.txt</i> • <i>loadinv.txt</i> • <i>loadinv.bat</i> To find the Location, open the data services Manager Tab: Run-time. The jobdir is the directory without pCache. SAP Data Services Server Manager Job Server Access Server SSL Run-time NCS SLD Miscellaneous Specify a directory with enough disk space for pageable cache: Peer-to-peer options Start port: 1025 End port: 32767 Use SSL protocol: Image: End port: 32767 Image: End</jobname></jobname>
	Close and Restart Close

tracedir	Directory where the trace and log files are located.
	The directory should contain trace/error files, which look as follows:
	trace_MM_DD_YYYY_HH_MM_SS
	error_MM_DD_YYYY_HH_MM_SS
Server_log_path	Path to the server log.
	It should contain the file:
	server_eventlog_YYYY-MM-DD.txt
loglevel	Logging settings DEBUG, INFO, WARNING, ERROR, CRITICAL
Poll interval	Interval, in seconds, for how often the Data Services Server is polled to get the current Job status.
Jobname	Name of the Data Services Job. It can be looked up in the SAP Data Service Management Console under: Administrator -> Batch
Log level (default is Inherited)	Universal Task logging settings: [Inherited Trace Debug Info Warn Error Severe]

Example for SAP Data Services Task

The following Task start the Data Service Job: loadinv on the server Walldorf

				Up	date 🛄 Copy 🗔 l	Launch Task 🚡	View Parents	💣 Delete 📑 Refr	resh 💥 Clo
SAP-Data-Services Tas	k	 Variables 	 Actions 	* Virt	ual Resources	• Mutualiy E	ixclusive	• Instances	4 1
eneral				-		-			
Task Name : F	Run DS JOB	"loadinv" new			Version :	3			
Task Description :									
Member of Business Services :									¥
Resolve Name Immediately :					Time Zone Preference	System Defai	ult —	÷	
Hold on Start :									
Virtual Resource Priority :	0		•	ł	Hold Resources on Failure :				
gent Details	_								
Cluster	_			_		-			
Agent : V	WALLDORF			· ·	Agent Variable : [
Credentials :					Credentials Variable [
Run with Highest Privileges :	3								
Desktop :									
AP-Data-Services Deta	iils								
Jobserver Hostname :	Walldorf				job server port :	3500			
path to L_RWJobLauncher :	C:\Program	m Files (x86)\SAP E	3usinessObjects\Da	ta Services	Jobname :	loadinv			
RW Job launcher parameters :	-W				server_log_path :		ata\SAP Busine	essObjects\Data Ser	vices\log\J
jobdir :	C:\Program	mData\SAP Busine:	ssObjects\Data Ser	vices\log	Pollinterval :	-t30			

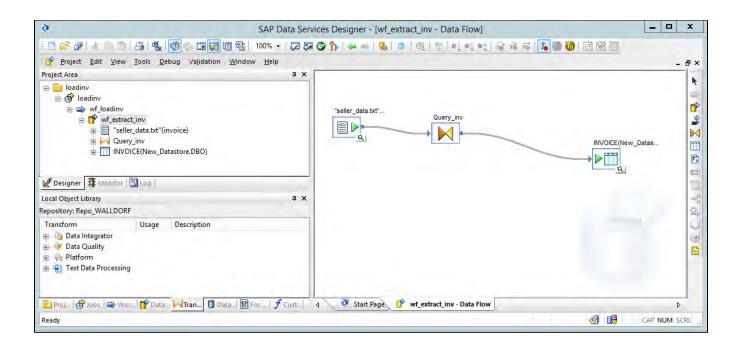
SAP Data Services Processing Steps

The following describes how to run a Data Services Task.

The Data Services Data Flow (Step 1) is only shown for completeness so that that Scheduling Operations team members with limited SAP Data Services Knowledge understand the concept.

1. Job Configuration in Data Service Designer

Configure the SAP Data Services ETL job in the Data Service Designer.



2. Export job execution command in SAP Data Service Management Console

Administrator		Home About	Release Notes Logout				
	Batch > Export Execution Command						
Administrator	Repository: Repo_WALLDORF						
ුයි Status හි Batch	Export Execution Command						
Repo_WALLDORF	and the second se	Job: loadinv					
SReal-Time	Export File name:	loadiny					
SAP Connections	Job Server or Server Group:	WALLDORF:3500	~				
	Export Job Server:		~				
Server Groups Goiject Promotion Management Job Execution History	Enable auditing:						
	Disable data validation statistics collection:						
	Enable recovery:						
	Recover from last failed execution:						
	Use password file:						
	Collect statistics for monitoring:						
	Collect statistics for optimization:						
	Use collected statistics:						
	Export Data Quality reports:						
	Distribution level:	Job 🗸					
	Substitution Parameters Add Overridden Parameter						

3. Configure the SAP Data Services Task to run the exported job in Universal Controller

Universal Task configuration:

P-Data-Services Tasl	k Details: R	un DS JOB "loadinv	" new						
				Upr	late 🛄 Copy 🗔	Launch Task	View Parents	s 🚮 Delete 📑 Re	fresh 💥 C
SAP-Data-Services Tas	ik	Variables	Actions		ual Resources	Mutuali	y Exclusive	• Instances	4 1
General									
Task Name :	Run DS JOE	3 "loadinv" new			Version :	3			
Task Description :									
Member of Business Services :									*
Resolve Name Immediately					Time Zone Preference	System De	fault —	₩.¥	
Hold on Start :				1					
Virtual Resource Priority :	10			e e	old Resources on Failure :				
gent Details Cluster : [Agent : [WALLDORF	1		•	Agent Variable :	Ē.			
Credentials :					Credentials Variable				
Run with Highest Privileges : Interact with Desktop :									
AP-Data-Services Deta	ails								
Jobserver Hostname :	Walldorf				job server port	350	00		
path to L_RWJobLauncher :		m Files (x86)\SAP B	usinessObjects\Da	ta Services	Jobname	e: loadinv			
RW Job launcher parameters :	-W				server_log_path	: C:\Program	nData\SAP Busi	nessObjects\Data Se	ervices\log\.
jobdir :	C:\Progra	mData\SAP Busines	sobjects\Data Serv	/ices\log	Pollinterval	l: -t30			
tracedir :	C:\Progra	mData\SAP Busines	sobjects\Data Serv	vices\log_	loglevel	I: INFO			
L_RWJobLauncher:	AL DW La	hi avaabaataa							

4. Launch the Universal Task

Universal Task Instance after the launch of the task:

				Update	Re-run 🔻 📴 Ret	rieve Output 🛛 🚮	Delete 📑 Refresh	X Clo
SAP-Data-Services	ask Instance	Virtual Resources	Exclusiv	/e Requests	Output	Notes		
General								
Instance Name :	Run DS JOB "loadi	nv"		Instance Number :	6			
Task :	Run DS JOB "loadi	nv"	10 m	Invoked By :	Manually Launch	ied		
Launch Source :	Launch Task / Use	er Interface						
Task Description :								
Member of Business Services			÷	Execution User :	ops.admin			
Calendar :	System Default			Time Zone Preference	- System Defaul	t	T	
Virtual Resource Priority	10		•	Hold Resources on Failure				
itatus								
	Success			Exit Code :	Ű.			
Status Description :								
Operational Memo :								
Trigger Time :				Launch Time	2021-06-18 10:3	1:29 +0000		
Queued Time :	2021-06-18 10:31:	29 +0000						
Start Time :	2021-06-18 10:31:	30 +0000		End Time :	2021-06-18 10:3	1:43 +0000		
Duration :	14 Seconds			CPU Time	483			
Process ID :	21980							
gent Details								

5. Verify job execution in SAP Data Service Management Console

Administrator					Hom	e Ab	oout Release Notes Logout @
	Job Execution His	tory				1.1.0	
G Repo_WALLDORF G Repo_WALLDORF G Real-Time G Web Sections	Job Execution His Available batch jobs View history for	Countration					
- Services	Repository name	Job name	Start time	End time	Execution time	Status	Job information
🗄 🋫 SAP Connections	Repo_WALLDORF	loadiny	2021-06-18 09:14:32	2021-06-18 09:14:48	00:00:16	0	Trace, Monitor, Error, Performance Monito
- Conver Groups	Repo WALLDORF	loadiny	2021-06-18 09:32:50	2021-06-18 09:32:55	00:00:05	0	Trace, Monitor, Error, Performance Monito
+ 🔂 Server Groups	The for the born						

🚱 Administrator		Home About Release Notes Logout
	(14.2) 06-18-21 12:31:32 (23192:6132) JOB: Reading	g job <b05fb9c7 008a="" 45fc="" 9dcd="" a62d7b624524=""> from the</b05fb9c7>
Administrator		7.0000>.
Status		nt directory of job <b05fb9c7_008a_45fc_9dcd_a62d7b62< td=""></b05fb9c7_008a_45fc_9dcd_a62d7b62<>
+ 🔂 Batch		es\bin>.
Real-Time	(14.2) 06-18-21 12:31:33 (23192:6132) JOB: Starti	ing job on job server host <walldorf>, port <3500>.</walldorf>
	(14.2) 06-18-21 12:31:34 (23192:6132) JOB: Job <1	loadinv> of runid <20210618123133231926132> is initia
- G Web Services		ssing job <loadinv>.</loadinv>
T SAP Connections		izing job <loadinv>.</loadinv>
E Server Groups		loadinv> is started.
	(14.2) 06-18-21 12:31:35 (23192:6132) WORKFLOW: Work f	
Object Promotion	(14.2) 06-18-21 12:31:36 (16036:17692) DATAFLOW: Proce (14.2) 06-18-21 12:31:38 (16036:17692) DATAFLOW: Data	
Management	(14.2) 06-18-21 12:31:38 (16036:17692) DATAFLOW: Data (14.2) 06-18-21 12:31:38 (16036:17692) DATAFLOW: Cache	
Job Execution History		to) 3757047808 bytes available for caches in virtual
	(14.2) 06-18-21 12:31:38 (16036:17692) DATAFLOW: Data	
	(14.2) 06-18-21 12:31:38 (16036:17692) DATAFLOW: Data	
	(14.2) 06-18-21 12:31:38 (16036:17692) DATAFLOW: Proce	
	(14.2) 06-18-21 12:31:38 (23192:6132) WORKFLOW: Work f	flow <wf loadinv=""> is completed successfully.</wf>
	(14.2) 06-18-21 12:31:38 (23192:6132) JOB: Job <1	loadinv> is completed successfully.

Note

The Log and trace file in the SAP Data Service Management Console are the same as in the output of the Universal Task.

The following shows the Universal Task Output:

Retrieve Output - R	Run DS JOI	B "loadinv"		
2 Output				e
Output				and the second se
2021-06-18 12:31	:43,827	- INFO - (14.		11 12:31:32 (23192:6132) JOB: Reading job <b05fb9c7_008a_45fc_9dcd_a62d7b624524> from the <14.2.7.0000>.</b05fb9c7_008a_45fc_9dcd_a62d7b624524>
(14.2) 06-18-21 1	2:31:32	(23192:6132)		Current directory of job <b05fb9c7_008a_45fc_9dcd_a62d7b624524> is <c:\program (x86)\sap="" files="" services\bin="">.</c:\program></b05fb9c7_008a_45fc_9dcd_a62d7b624524>
(14.2) 06-18-21 1	2:31:33	(23192:6132)	JOB:	Starting job on job server host <walldorf>, port <3500>.</walldorf>
(14.2) 06-18-21 1				Job <loadinv> of runid <20210618123133231926132> is initiated by user <admin>.</admin></loadinv>
(14.2) 06-18-21 1				Processing job <loadinv>.</loadinv>
(14.2) 06-18-21 1				Optimizing job <loadinv>.</loadinv>
(14.2) 06-18-21 1	2:31:35	(23192:6132)		Job <loadinv> is started.</loadinv>
				Work flow <wf loadinv=""> is started.</wf>
				Process to execute data flow <wf_extract_inv> is started.</wf_extract_inv>
(14.2) 06-18-21 1	2:31:38	(16036:17692)	DATAFLOW:	Data flow <wf_extract_inv> is started.</wf_extract_inv>
(14.2) 06-18-21 1	2:31:38	(16036:17692)	DATAFLOW:	Cache statistics determined that data flow <wf_extract_inv> uses 0 caches with a total size o equal to) 3757047808 bytes available for caches in virtual memory. Data flow will use IN MEMO</wf_extract_inv>
(14.2) 06-18-21 1	2:31:38	(16036:17692)	DATAFLOW:	Data flow <wf_extract_inv> using IN MEMORY Cache.</wf_extract_inv>
				Data flow <wf_extract_inv> is completed successfully.</wf_extract_inv>
				Process to execute data flow <wf_extract_inv> is completed.</wf_extract_inv>
(14.2) 06-18-21 1	2:31:38	(23192:6132)	WORKFLOW:	Work flow <wf_loadinv> is completed successfully.</wf_loadinv>
(14.2) 06-18-21 1	2:31:38	(23192:6132)	JOB:	Job <loadinv> is completed successfully.</loadinv>

SAP Event History Monitor

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Introduction

This Universal Task queries the SAP Event history table for a selected SAP Event & Parameter. If the Event is found, it gets confirmed, so that it is not triggered again. Optionally, a task can be launched based on the occurrence of an Event & Parameter.

Software Requirements

Software Requirements for Universal Agent

- Universal Agent for Linux or Windows Version 7.0.0.0 or later is required.
- Universal Agent needs to be installed with python option (--python yes).

Software Requirements for Universal Controller

• Universal Controller 7.0.0.0 or later is required.

Software Requirements for the Application to be Scheduled

SAP Credentials (Username and Password) to connect via the XBP-RFC Interface to SAP ERP System is required.

Key Features

Some details about Universal Tasks to monitor the SAP Event History:

- Query the SAP Event history table for a selected SAP Event & Parameter.
- For the Parameters, wildcards "*" are supported.
- Confirm Events in the SAP History Table (SM62). When the Event and Parameter have been identified, the Event is confirmed in SAP so that the monitor will not trigger a second time (optional setting).
- · Launch a task in Universal Controller based on the occurrence of an Event & Parameter.
- The Universal Task is supported on Linux and Windows Agents.
- An automatic re-start of the task can be achieved by adding an action to the Universal Task, which restarts the task in the case of status success.
- This Universal Task supports SAP Application Server and SAPNWRFC.INI Destination connections.
- You can set different log-levels for the Universal task, which provides you more information in case of issues.

Import the SAP Event History Monitor Universal Template

To use the SAP Event History Monitor Template, you first must perform the following steps:

- 1. This Universal Task requires the Resolvable Credentials feature. Check that the Resolvable Credentials Permitted system property has been set to true. For more information about Resolvable Credentials click here.
- 2. Download the provided ZIP file.
- 3. In the Universal Controller UI, select Administration > Configuration > Universal Templates to display the current list of Universal Templates.
- 4. Click Import Template.
- 5. Select the template ZIP file and Import.

When the template has been imported successfully, the Universal Template will appear on the list. Refresh your Navigation Tree to see these tasks in the Automation Center Menu.

Configure SAP Task for Batch Input

For Universal Task SAP Event History Monitor, create a new task and enter the task-specific Details that were created in the Universal Template.

Field Descriptions for SAP Task for Batch Input

Fill Out the Universal Task for each SAP Event and Parameter to monitor.

Field	Description
Agent	Linux or Windows Universal Agent to run the USAP commands.
Agent Cluster	Optional Agent Cluster for load balancing.
SAP Connection Type	[Application Server Connection, SAPNWRFC.INI Connection]
	The Universal Task support SAP Application Server and SAPNWRFC.INI Destination connections.
	Application Server Connection:

	 Client: SAP Client to connect to; for example, 100 SAP SysNr: SAP System Number; for example, 00 ASHOST: SAP Application Server hostname or IP; for example, walldorf SAPNWRFC.INI Connection: Client: SAP Client to connect to; for example, 100 Destination: name of the destination entry in the file sapnwrfc.ini; for example, walldorf Note The file sapnwrfc.ini needs to be in the home directory of the user executing the task. If no user credentials are provided, this is: Linux: /opt/universal/uagsrv Windows: C:\Program Files\Universal\UAGSrv
SAP ASHOST	SAP Application to connect to.
	This field is visible only if SAP Connection Type = "Application Server Connection"
SAP CLIENT	SAP Client (3 digits); for example, 100
	The Imported calendar will have the SID as prefix
	Imported Calendar Name:
	<sid>_<SAP CLIENT>_<sap calendar="" id=""></sap></sid>
SAP SysNr	SAP System Number (2 digits) e.g. 00
	This field is visible only if SAP Connection Type = "Application Server Connection"
SAP Destination	SAP Destination in the nwrfc.ini.
	This field is visible only if SAP Connection Type = "NRFW.ini Connection"
USAP Dir	Directory where the USAP binary is stored
	Linux: /opt/universal/usap/bin
	Windows: C:\Program Files\Universal\USap\bin
Event ID	Name of the Event to Scan for in the SAP Event History Table.
Event Parameter	Name of the parameter to scan for.
	Note: wildcard "*" is supported ; for example, ua* searches for all event parameters beginning with ua.
	If no Event Parameters is provided, any Event Parameter will match.
Event Status to Select	 [New, Confirmed, Any Status] NEW: scan only for new Events (default). Confirmed: scan only for confirmed Events. Any Status: scan for any status of Events.

Universal Controller URL	Universal Controller URL.
	For example, https://192.168.88.40/uc
Taskname	Name of the task to start in case a new event has been identified.
	If no task is specified, the UT runs in Monitoring mode and goes to success in case an Event has been identified; for example, you can add the Event Monitor to a Workflow (Note: in that case remove the action, which automatically re-starts the UT in case of status "success")
Confirm Events	[Confirm , New]
	Default is "Confirm".
	Confirm: This ensures that the same event only triggers the event monitor once.
	New: Leaves the event in status "New", mainly for testing purpose.
USAP loglevel	Log level of the Universal Connector for SAP
	trace audit info warn error
rfc_logon_retry_i nterval in s	interval in seconds between an new logon attempt to SAP.
	Per default, 10 retries will be performed; for example, 120s means every 120s a new logon attempt to SAP is performed. If after 10 retries no logon to SAP was possible the Task fails.
Loglevel	Universal Task logging settings
	[DEBUG INFO WARNING ERROR CRITICAL]

Example for SAP Event History Monitor Task

The following example monitors the SAP Event: UAC_TEST with Parameter: UAC in the SAP Event History.

If the Event occurs in the SAP Event history table with status "NEW", the Task "Collect_Orders" is launched and the Event is confirmed in SAP.

In the following example, the Parameter "Multilaunch" is enabled. This means that if several events are found with the status "New", the task "Collect_Orders" will be launched for each confirmed event.

P Event History Mo	mitor lask Deta	ills: SAP Event Histor	y wonitor - Ingger		🔛 Update 🏼 🛄 Co	ov 🖪 Launch Ta	sk 🔒 View	Parents 🕼 Delet	e 👍 Refresh	
SAP Event History M	onitor Task	 Variables 	Actions	- V	irtual Resources	 Mutually Exclusion 	_	• Instances		4 1
Seneral										
Task Name	: SAP Event His	story Monitor - Trigger	() · · · · · · · · · · · · · · · · · ·		Version :	4				
Task Description										
Member of Business Services										×
Resolve Name	• —				Time Zone	System Defau	ult			
Immediately					Preference :	System Derat				
Hold on Start					Hold Resources on					
Virtual Resource Priority			-		Fold Resources on Failure :					
gent Details										
Cluster										
Agent	: S{AGT_LINUX	(_SAP}			Agent Variable :	 Image: A start of the start of				
Credentials	1				Credentials Variable :					
Run with Highest										
Privileges Interact with										
Desktop										
AP Event History Mo	nitor Details —									
SAP Connection	Application Ser	ver Connection		-	Client :	001				
E	walldorf			_	SAP SysNr :	00				_
SAP Credentials :	SAP_CRED_DEV	/ELOPER		- 53		/opt/universal/I	pin			
Event ID :	UAC_TEST									
Event Parameter :	*				Poll Interval (in	10				
Event Status to					seconds) :					
Select :	New			*	Confirm Events :	Confirm				*
USAP Loglevel :	info			•	Loglevel :	DEBUG				
Task Name :	Collect_Orders				rfc_logon_retry_interval in s :	120				
Multilaunch :	~				Universal Controller URL :	http://192.168.8	38.40:8080/u	JC		
in a start T	UAC_REST_CRE			• 🖂						

Event Configuration in SAP

The SAP History Event Task Monitor scans for Events in the SAP Event history.

An Event only shows up in the Event history if an appropriate event criteria profile has been set-up in SAP by using transaction SM62.

Note

Optionally, a criteria profile can also be set-up via an SAP Task of command group "Set CM Profile" in Universal Controller.

The following screen shows an example of the set-up in SAP using SM62.

🖙 Event History: Profiles and Criteria 📃	1×
😻 🖸 🗔 💭 🐨 😓 😒 😒 👘 🔥 🖄 💭 💭 💭 🐨	
Event History: Profiles and Criteria	
Event History Criteria Reorganization BckProcEvnts	Ŷ
🎢 🎢 🖻 🖛 🖍 💼 🔁 🕒 🕄 🚱 🚊 🗮 🖍 🍂 🛤 🚉 AND 🚉 OR 🗋 Criterion 📺 🕄 🚱	
Criteria Hierarchy of the Profile UAC_TEST	
Criteria Profiles	
Type Profile ID Description Status Owner Changed By	1
Event History 1 UAC_TEST DEVELOPER DEVELOPER	
	1
Text FId Option Lower Limit Upper	
UAC_TEST EVENTID UAC_TEST	
	Û

Event History Table

The following provides and example of the Event history table in SAP (SM62).

Only Events showing up here can trigger the SAP Event History Monitor UT.

Event H	istory: O	verview						_ 0	
•		~ 《		0	е н I	K 1	6 f		
Event Hist	tory: Ove	erview							
Event Histo	rv Crit	eria Reoro	anization	BckPr	ocEvnts				
Evene histo		iena i Neorg	gamzacion	DCKFT	OCEVIICS				
5] 🕻 🚸	6à 🕁	1 🕄 🚊 🎙	- 11 14	Y	B . 🖽				
Event History:	21 Entries					1			
Current Date	Time	Event	Event p	Numb	Status	Status	Background Se	erver	
27.05.2021	08:59:18	UAC_TEST	UAC	0	Confirmed	ОК	ip-30-0-1-83_N	IPL_0	^
27.05.2021	09:02:10	UAC_TEST	UAC	0	Confirmed	ОК	ip-30-0-1-83_N	IPL_0	¥
27.05.2021	09:04:34	UAC_TEST	UAC	0	Confirmed	ОК	ip-30-0-1-83_N	IPL_0	
27.05.2021	09:06:53	UAC_TEST	UAC	0	Confirmed	ОК	ip-30-0-1-83_N	IPL_0	
27.05.2021	09:13:21	UAC_TEST	UAC	0	Confirmed	OK	ip-30-0-1-83_N	IPL_0	
27.05.2021	09:15:59	UAC_TEST	UAC	0	Confirmed	OK	ip-30-0-1-83_N	IPL_0	
27.05.2021	11:41:42	UAC_TEST	UAC	0	Confirmed	ОК	ip-30-0-1-83_N	IPL_0	
27.05.2021	11:42:46	UAC_TEST	UAC	0	New	ОК	ip-30-0-1-83_N	IPL_0	
		1			1			<	>
>									

Task Monitor Trigger mode

You can create a Task Monitor trigger from this task by adding an action to the Universal Task, which restarts the task in the case of status success.

ystem Operatio	n Details			
			🐺 Update 📸 Delete 🐚 Refre	sh 🐹 Close
System Operati	on			
Action Criteria -				
Status :	Success			-
Exit Codes :	-			
On Late Start :				
On Late Finish :				
On Early Finish :				
Description :				
Action Details —				
System Operation :	Launch Task	System Notification :	peration Failure	-
Task Reference :	\${ops_task_name}	Task Reference Variable :	1	

SAP Extract Job Definitions

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Overview

This Universal Task allows you to export SAP Job definitions from SAP into one flat file for each Job selected for extraction. The Jobs definitions to extract from SAP are provided in a CSV input file saved in the Universal Controller script library. For each Job to extract the SAP Jobname and SAP Job count ID needs to be provided in the input file.

The extracted SAP Job definition files can then by read by the Stonebranch Conversion Tool (CTK), which transitions each read Job definition file into an SAP Task. If the SAP Job was in status Released, meaning Start conditions had been defined in SAP for that Job, than automatically a time trigger with the scheduling criteria will be created by the transition tool. As result the transitioned SAP Task are ready to be scheduled in the same way as in SAP.

This document focuses on the Universal Task, which extracts the Job definitions from SAP. The Stonebranch Conversion Tool (CTK) to read the extracted Job definitions files and create SAP Tasks and related trigger from it is described in the CTK documentation.

Software Requirements

Software Requirements Universal Agents and Controller

• Universal Agent for Linux or Windows Version 6.9.0.0 or later are required

Software Requirements Universal Controller

- Universal Controller 6.9.0.0. or later is required
- A Universal Controller license key with support for SAP connector is required

Software Requirements for the Application to be Scheduled

In order to connect to the SAP System the SAP NetWeaver RFC SDK 7.50 libraries are required from SAP.

Those can be downloaded from the SAP Software Download: SAP NetWeaver RFC SDK 7.50

SAP Extract Job Definitions Key Features

- EDxport SAP Job definitions from SAP into one flat file for each SAP Job
- Also any defined start criteria will be exported for SAP each Job
- Jobs to be extracted can be in any Status (for example, SCHEDULED, RELEASED, CANCELED, FINISHED)
- The Jobs to be extracted are provide via list saved in the Universal Controller script library
- A detailed log file will be provided after each extraction process to identify Jobs which could not be found in SAP; for example, a Jobname has been provided in the input file, which does not exists in the SAP System
- The extracted SAP Job definition files can than by read by the Stonebranch Conversion Tool (CTK), which transitions each read Job definition file into an SAP Task, including defined Start criteria
- Support for Application Server Connection and Destination Connection (nwrfc.ini); for example, Load Balancer connections, SAP SNC)

Import SAP Extract Job Definitions Built-In Universal Template

To use the built-in Universal Template, you first must perform the following steps:

- 1. This Universal Task requires the Resolvable Credentials feature. Check that the Resolvable Credentials Permitted system property has been set to true.
- 2. Copy or Transfer the Universal Template file to a directory that can be accessed by the Universal Controller Tomcat user.
- 3. In the Universal Controller UI, select Configuration > Universal Templates to display the current list of Universal Templates.
- 4. Right-click any column header on the list to display an Action menu.
- 5. Select Import from the menu, enter the directory containing the Universal Template file(s) that you want to import, and click OK.

When the files have been imported successfully, the Universal Template will appear on the list.

Configure SAP Extract Job Definitions Task

For the new Universal Task type, create a new task and enter the task-specific Details that were created in the Universal Template.

Field Descriptions for the SAP Extract Job Definitions Task

Field	Description
UAC REST URL	Universal Controller URL; for example:
	Local Universal Controller:
	http://192.168.88.10:8080/uc/
	Stonebranch SaaS Cloud Universal Controller:
	https://superstore.stonebranchdev.cloud/
UAC REST Credentials	Credentials of the Universal Controller Webservice API
Working Directory	Any Linux or Windows directory, which will be used to store the extracted Job definitions in. The directory must exist on the server where the Universal SAP Connector Agent is installed.
	Examples:
	 Windows: C:\work\CTK\sap Linux: /home/stone/work/CTK/sap
Input File Separator	This field contains the Input File Separator used in the Input File; for example, "," or ";"
Input File	Input file containing the SAP Jobs to extract.
	The format is:
	<sap jobname="">,<sap id="" jobcount=""></sap></sap>
	Example: sap_jobs.csv
	SAP-CTK-01_EVERYDAY_1000,15444900 SAP-CTK-02_FDOM_1000,16483700
	SAP-CTK-03-WORDAY-1000,09063600 SAP-CTK-04-EVERYDAY,11290200
	SAP-CTK-04_MULTISTEP_EVERYHOUR,17402500
SAP Connection Type	[Application Server Connection NRFW.ini Connection)]
	Select the SAP Connection Type:
	Application Server Connection or Destination Connection using the nwrfc.ini file.
	Default location for the nwrfc.ini file is:
	 Linux: /opt/universal/uagsrv Windows: C:\Program Files\Universal\UAGSrv
SAP Credentials	
SAP ASHOST	SAP Application to connect to.
	This field is only visible in case of SAP Connection Type = "Application Server Connection"

SAP CLIENT	SAP Client e.g. 100	
SAP Sysnr	SAP System Number; for example, 00	
SAP Dest	SAP Destination in the nwrfc.ini.	
	This field is only visible in case of SAP Connection Type = "NRFW.ini Connection"	
Loglevel	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]	

Example: SAP Extract Job Definition - Application Server Connection

General		
Task Name :	SAP Extract Job Definitions - ashost	Version : 2
Task Description :		
Member of Business Services :	SAP_CONV	*
Resolve Name Immediately :		Time Zone Preference : System Default
Hold on Start :		
Virtual Resource Priority :	10 👻	Hold Resources on Failure :
Agent Details		
Cluster :		
Agent :	\${AGT_WIN_LOCAL}	Agent Variable :
Credentials :		Credentials Variable :
Run with Highest Privileges :		
Interact with Desktop :		
SAP Extract Job Def	initions Details	
UAC REST URL :	http://192.168.88.10:8080/uc/	UAC_REST_CRED
Working Directory :	C:\work\CTK\sap	Input File Separator : '
Input File :	sap_all_jobs.csv	SAP Connection Type : Application Server Connection
SAP Credentials :	SAP_CRED_WIESLOCH	SAP Ashost : 192.168.88.17
SAP Client :	001	SAP Sysnr : 00
Transferration of the	DEBUG	

Example: SAP Extract Job Definition - Destination Connection (nwrfc.ini)

General —					
Task Name :	SAP Extract Job Definitions - nwrfc.ini		Version :	6	
Task Description :					
Member of Business Services :	SAP_CONV				~
Resolve Name Immediately :			Time Zone Preference :	System Default	~
Hold on Start :					
Virtual Resource Priority :	10 💌	[Hold Resources on Failure :		
Agent Details					
Cluster :					
Agent :	\${AGT_WIN_LOCAL}		Agent Variable :		
Credentials :		*	Credentials Variable :		
Run with Highest Privileges :					
Interact with Desktop :					
SAP Extract Job Det	finitions Details				
UAC REST URL :	http://192.168.88.10:8080/uc/		UAC REST Credentials :	UAC_REST_CRED	
Working Directory :	C:\work\CTK\sap		Input File Separator :	1	
Input File :	sap_all_jobs.csv	*	SAP Connection Type :	SAPNWRFC.INI Connection	1
SAP Credentials :	SAP_CRED_WIESLOCH	*			
SAP Client :	001				
SAP Dest :	WIESLOCH				
Loglevel :	DEBUG	¥.			

Execute SAP Extract Job Definitions Task

When you launch the SAP Extract Job Definitions Task it will connect to the provide SAP System an extract the Job definition to one flat file per SAP Job. In addition the a log-file will be generated, showing you if all SAP Jobs could be extracted or if some jobs could not be found.

The Log-files and Job definition flat files will be written to the following directories:

- <Working Directory>jobdef<DDMMYYY_HHMMSS_convout>
- «Working Directory»log

<Working Directory>: is the directory set in the Task Field: Working Directory e.g. C:\work\CTK\sap\

Example Output:

Working Directory = C:\work\CTK\sap\

Extracted Job Definitions

Name	Date modified	Туре	Size
SAP-CTK-01_EVERYDAY_1000_ID#15444900	11/5/2020 6:09 PM	Text Document	3 KB
SAP-CTK-02_FDOM_1000_ID#16483700	11/5/2020 5:09 PM	Text Document	3 KB
SAP-CTK-03-WORDAY-1000_ID#09063600	11/5/2020 6:09 PM	Text Document	3 KB
SAP-CTK-04_MULTISTEP_EVERYHOUR_ID	11/5/2020 6:09 PM	Text Document	7 KB
SAP-CTK-04-EVERYDAY_ID#11290200	11/5/2020 6:09 PM	Text Document	3 KB

Log-file Example

create_sap_usap_files.05112020.180924 - Notepad	Ţ	
File Edit Format View Help		
### Processing start: 05112020.180924		
### The following SAP Job definitions have been e	xtrac	ted:
SAP-CTK-01_EVERYDAY_1000,15444900		
SAP-CTK-02 FDOM 1000,16483700		
SAP-CTK-03-WORDAY-1000,09063600		
SAP-CTK-04-EVERYDAY, 11290200		
SAP-CTK-04_MULTISTEP_EVERYHOUR, 17402500		
### 5 Job definitions have been extracted		
### 1 Job definitions could NOT be extracted		
test,12345678 could NOT be extracted		
### Processing done: 05112020.180924		

ServiceNow Integration

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Introduction

This Universal Task allows customers to create incident tickets, problem tickets, and change requests in ServiceNow straight from the Universal Controller. It can then be combined with the event- or timebased automation capabilities of the Controller to, for example., automatically create an incident ticket in case a task execution fails.

Creating or modifying other objects in ServiceNow can easily be achieved by adding respective fields to the Universal Template and extending the script.

Overview

This task enables customers to create an incident ticket in ServiceNow and optionally attach the output of predecessor tasks to the ticket.

- It can create problem tickets in ServiceNow.
- It can create change requests in ServiceNow.
- This task combines with the event- or time-based automation capabilities of the Controller to automate the IT service management process.

Software Requirements

This integration requires an Universal Agent and a Python runtime to execute the Universal Task against a remote ServiceNow instance.

Software Requirements for Universal Template and Universal Task

- Requires Python 3.6 or higher. Tested with the Universal Agent bundled Python distribution.
- Python modules required:
 - requests

Software Requirements for Universal Agent

- Universal Agent for Windows x64 Version 6.9.0.0 and later with python options installed, or
- Universal Agent for Linux Version 6.9.0.0 and later with python options installed

Software Requirements for Universal Controller

• Universal Controller Version 6.9.0.0 and later

Software Requirements for the Application to be Scheduled

This Universal Task has been tested with the following ServiceNow versions:

- Paris
- Orlando
- New York
- Madrid

ServiceNow Key Features

Feature	Description
Create	Create an incident ticket in your ServiceNow instance and assign it to certain users or groups in order to raise awareness of, for example, failed tasks in UAC.
an incident ticket	Optionally, attach the STDOUT and STDERR of a sibling task (task in the same workflow) or any task in UAC directly to the incident so that the assigned users can immediately start investigations on the error and act accordingly.
Create problem	Create a problem in ServiceNow to report on problems that could have arisen in your IT environment.
Create	Create a change request in ServiceNow to start the change management procedure depending on the configuration item.
change request	Note: Changes of UAC environments (e.g. promotion of a new workflow from DEV to PROD) can be enforced to follow your ServiceNow Change management procedure by automating the promotion of bundles (see Bundles & Promotion) from ServiceNow (for example, when the Change Request on the UAC configuration item moves to the "implement" phase) to UAC via the Web Service API. This requires some configuration in ServiceNow via Flows or Workflows.

Import ServiceNow Built-In Universal Template

To use the built-in Universal Template, you first must perform the following steps:

- 1. This Universal Task requires the Resolvable Credentials feature. Check that the Resolvable Credentials Permitted system property has been set to true.
- 2. Copy or Transfer the Universal Template file to a directory that can be accessed by the Universal Controller Tomcat user.
- 3. In the Universal Controller UI, select Configuration > Universal Templates to display the current list of Universal Templates.
- 4. Right-click any column header on the list to display an Action menu.
- 5. Select Import from the menu, enter the directory containing the Universal Template file(s) that you want to import, and click OK.

When the files have been imported successfully, the Universal Template will appear on the list.

Configure ServiceNow Universal Task

For the new Universal Task type, create a new task and enter the task-specific details that were created in the Universal Template.

Field Descriptions for ServiceNow Universal Task

Field	Description
Function	Select ServiceNow function to be used (Create Incident, Create Problem, Create Change).
ServiceNow Credential	Credential object, save Username/Password for accessing ServiceNow via API.
Logging Level	Select level of logging for the task execution.
Caller	Person who reported or is affected by this incident (sys_id).
Category	Select pre-defined categories for incident creation.
Subcategory	Select pre-defined subcategories for incident creation.
Impact	Select impact of incident (high, medium, low).
Urgency	Select urgency of incident (high, medium, low).
Assigned to	Person primarily responsible for working this task in ServiceNow (sys_id).
Short Description	Short description of the incident, Universal Controller Variables can be used.
Description	Description of the Incident Ticket, Universal Controller Variables can be used.
Request Format	Select request format of API call (json, xml, text).
Response Format	Select response format of API call (json, xml, text).
Instance URL	URL of the ServiceNow instance; for example, https://dev53724.service-now.com.
Attach output from Sibling Task	Check if output from a sibling task (task within the same workflow) should be attached to the incident ticket.
Sibling Task Name	Name of the sibling task to which the output will be attached.

Attach output from any task instance	Check if output from any task instance available from any Controller should be attached to the incident ticket. Uses the REST API.
Task Instance ID	UUID of the task instance of which the output shall be attached (can be a variable).
UC URL	URL of the target Universal Controller; for example, https://frankfurt.stonebranchdev.cloud:8443/uc or http://localhost:8080/uc.
UC Credential	Credential for accessing the Controller. Must have API access on the target system.

Examples for ServiceNow Universal Tasks

Create ServiceNow Incident Ticket - Attach Output from Sibling Task

 ServiceNow Details 				
Function :	Create Incident	۷	ServiceNow Credential :	ServiceNow MRO
Logging Level :	Info	۷	Caller :	1f00b1f44f823300cbec4ebf9310c743
Category :	Software	٧	Subcategory :	Operating System
Impact :	1 - High	~	Urgency :	1 - High 🗸
Assigned to :			Short description :	Task failed!
Description :	Task Name: \${ops_snow_siblingname}, Task ID: \${_siblingid('\$	{	Request Format :	application/xml 👻
Response format :	application/xml	٧	Instance URL :	https://dev63726.service-now.com/
Attach output from Sibling Task :	V		Sibling Task Name :	My_Demo_Task_in_Error
Attach output from any task instance :				

Create ServiceNow Incident Ticket - Attach Output from Task Instance

-	 ServiceNow Details 				
		Create Incident	v	ServiceNow Credential :	ServiceNow MRO
	Logging Level :	Info	*	Caller :	1f00b1f44f823300cbec4ebf9310c743
	Category :	Software	Y	Subcategory :	Operating System
	Impact :	1 - High	Y	Urgency :	1 - High 🗸
	Assigned to :			Short description :	Task failed!
	Description :			Request Format :	application/xml 🗸
	Response format :		Y	Instance URL :	https://dev63726.service-now.com/
	Attach output from Sibling Task :				
	Attach output from any task instance :			Task Instance ID :	1596578401736416762TV6VC62PP06ZE
	UC URL :	https://frankfurt.stonebranchdev.cloud:8443/opswise		UC Credential :	Moritz_UC 👻 📰

Create Problem Ticket

 ServiceNow Details 			
Function :	Create Problem	ServiceNow Credential :	ServiceNow MRO
Logging Level :	Info	Category :	×
		Impact :	2 - Medium 💌
Urgency :	2 - Medium	Assigned to :	
Short description :	Problem!!!	Description :	This is a problem
Request Format :	application/xml	Response format :	application/xml 👻
Instance URL :	https://dev63726.service-now.com/		

Create Change Request

	 ServiceNow Details 			
	Function :	Create Change	ServiceNow Credential :	ServiceNow MRO
	Logging Level :	Info	Category :	~
			Impact :	2 - Medium 💌
	Assigned to :		Short description :	Changes to UC Prod - SNUG Bundle
	Description :	Bundle_ID:5bd54861d47045298e29e85bdbf7416b	Request Format :	application/xml 👻
1	Response format :	application/xml 👻	Instance URL :	https://dev63726.service-now.com/

Document References

This document references the following documents:

Name	Location	Description
Universal Templates	https://docs.stonebranch.com/confluence/display/UC70/Universal+Templates	User documentation for creating Universal Templates in the Universal Controller user interface.
Universal Tasks	https://docs.stonebranch.com/confluence/display/UC70/Universal+Tasks	User documentation for creating Universal Tasks in the Universal Controller user interface.

Slack Notifications

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- Technical Considerations
 - Steps to Activate Incoming Webbooks:
- Slack Notification Key Features
- Import Slack Notification Built-In Universal Template
- Configure Slack Notification Universal Task
- Field Descriptions for Slack Notification Universal Task
- Examples for Slack Notification Universal Tasks
 - Send a Job Status Notification to slack
 - Calling a slack Job Status Notification through Action -->System Operations and Launch Task
 - Send a Approval Notification to slack
 - Approval Message in Slack
- Document References

Disclaimer

This download is designed as a template to be adapted to your environment. In some cases, templates will need to be changed to work with your current Universal Automation Center (UAC) setup. This download is free to use. However, the download is not supported, and no warranty is provided by Stonebranch for this document and the related download. The use of this document and the related download is at your own risk. Before using this download in a production system, please perform testing.

Stonebranch assumes no liability for any issues caused by the performance of this download.

Request Support:

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Introduction

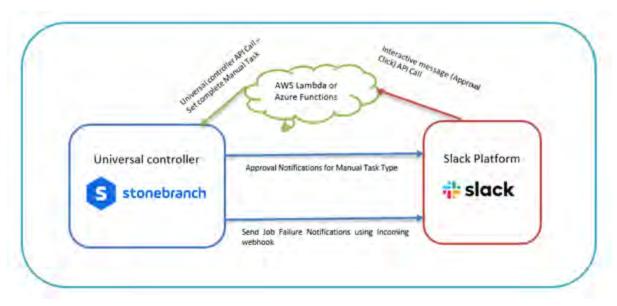
This Universal Task sends job status notifications to a Slack channel. It also enables users to send interactive messages in Slack for Universal Controller manual task approvals.

Overview

· Notifies users of job failure, late start/run, and other important events via a Slack channel.

Approval in Slack for Manual task type – users simply click on an approval button in Slack message to run manual tasks to success in Universal Controller, triggering continuation of workflow execution.

- Quick reaction time on job failures.
- Manual task interruptions in workflows can be handled by concerned applications/business team, while workflows in Universal Controller can be resumed simply by responding to the approval message in Slack.



Software Requirements

This integration requires an Universal Agent and a Python runtime to execute the Universal Task against a Slack account with Incoming webbook enabled for a job notification. Also, in order to cater the approval functionality from slack for an manual task type in Universal Controller, you will need to have an Interactivity enabled in slack with the request URL which will be used to send the http POST request for interactive messages by slack.

Software Requirements for Universal Template and Universal Task

This integration requires an Universal Agent and a Python runtime to execute the Universal Task against .

- Requires Python 3.6 or higher. Tested with the Universal Agent bundled Python distribution.
- Python modules required:
 - requests

Software Requirements for Universal Agent

Either:

- Universal Agent for Windows x64 Version 6.8.0.0 and later with python options installed
- Universal Agent for Linux Version 6.8.0.0 and later with python options installed

Software Requirements for Universal Controller

• Universal Controller Version 6.8.0.0 and later

Software Requirements for the Application to be Scheduled

The task can be used against any of your slack account or workspace that is of either free or standard or plus or enterprise grid

Technical Considerations

The request URL provided in Slack could be an end point either in AWS lambda or Azure Function, GCP function, or your custom API end point to handle the interactive message from slack and advise universal controller on approval or rejection of the manual task.

Below is the sample python code that could be invoked for the slack interactive message handling

Steps to Activate Incoming Webbooks:

- Go to your Browser and provide the URL: https://api.slack.com/apps/.
- Select or create an application that would be appropriate for sending Universal Controller notifications.
- Click on Incoming webhooks on the left menu and activate Incoming webhooks as below.

Settings	
Basic Information	Activate Incoming Webhooks
Collaborators	Incoming webbooks are a simple way to post messages from external sources into
install App	Slack. They make use of normal HTTP requests with a JSON payload, which includes
Manage Distribution	the message and a few other optional details. You can include message attachments to
Submit to App Directory	display richly-formatted messages.
Features	Adding incoming webhooks requires a bot user. If your app doesn't have a bot user,
App Home	we'll add one for you.
Incoming Webhooks	Each time your app is installed, a new Webhook URL will be generated.
Interactivity & Shortcuts	If you deactivate incoming webhooks, new Webhook URLs will not be generated
Slash Commanids	when your app is installed to your team. If you'd like to remove access to existing
Workflow Steps	Webhook URLs, you will need to Revoke All DAuth Tokens.
OAuth & Pennissions	
Event Subscriptions	
User ID Translation Where's Bot User	Webhook URLs for Your Workspace
	To dispatch messages with your webhook URL, send your message in JSON as the
Slack •	body of an application room POST request.
Holp	Add this webhook to your workspace below to activate this curl example.
Contact	
Policies	Sample curl request to post to a channel:
Our Bloc	corl -X POST -R "Context-type: application/jess"data "("text":"Hello, margin("))
	Copy

The URL generated here will be used in the Universal Task for posting message to slack platform

Slack Notification Key Features

Feature	Description
Job Notification	This feature can be used to send any job notification to a slack channel; for example, a job failure, Job long running, or Job held.
Approval Notification	Typically, Manual task types in universal controller are used, when there is a user manual intervention needed in a workflow task type and the Manual Task is completed successfully in universal controller by clicking on to the manual task command "Set Completed" traditionally .
	Now this task for slack can notify slack channel when the manual task reaches status: "Action Required" and User in slack can simply click on the approve/Reject Button in the slack interactive message that was sent by universal controller and then the manual task in the workflow can either go to success if approved or wait in the same status if rejected

Import Slack Notification Built-In Universal Template

To use the built-in Universal Template, you first must perform the following steps:

- 1. This Universal Task requires the Resolvable Credentials feature. Check that the Resolvable Credentials Permitted system property has been set to true.
- 2. Copy or Transfer the Universal Template file to a directory that can be accessed by the Universal Controller Tomcat user.
- 3. In the Universal Controller UI, select Configuration > Universal Templates to display the current list of Universal Templates.
- 4. Right-click any column header on the list to display an Action menu.
- 5. Select Import from the menu, enter the directory containing the Universal Template file(s) that you want to import, and click OK.

When the files have been imported successfully, the Universal Template will appear on the list.

Configure Slack Notification Universal Task

For the new Universal Task type, create a new task, and enter the task-specific details that were created in the Universal Template.

Field Descriptions for Slack Notification Universal Task

Field	Description		
Slack Function	Approval Notification (ideal to associate with manual tasks)		
Job Name	Name of the job :\${ops_task_name}		
Job Status	Status of the job:\${ops_status}		
Slack Incoming Webhook	Incoming webhook URL for your slack account		
Execution User	Execution User of the Manual Task:\${ops_execution_user}		
Job type	Task type of task instance: \${ops_task_type}		

Examples for Slack Notification Universal Tasks

Send a Job Status Notification to slack

Slack Function :	Job Notification	*	Jobname :	\${task_name}	
Job Type :	S(job_type)		Job Status :	\${task_status}	
Slack Webhook URL :			invoked by :	S(invoked_by)	
Execution User	S(exec_user)				

Calling a slack Job Status Notification through Action -->System Operations and Launch Task

(Also this could be made generic for a group of jobs or all jobs by calling the slack notification job from Task monitor job.)

ux/onix lask Details: s	CAN-DATA-FILE-AND-FORMAT			-
inux/Unix Task	ariables Actions Virtual Resources Mutually Exclusive Instances Triggers Notes Versi	ons		
0 Abort Actions		New		2
0 Email Notifications		New		1 2
3 Set Variables		New		12
stem Operation Details				_ 0
	📑 Update 🎁 Delet	e 🔰 Refresh	×	Close
System Operation				
- Action Criteria				_
Status :	Failed		÷	
Exit Codes :				-
On Late Start :				
On Late Finish :				
On Early Finish :				
On Projected Late :				
Description :				
- Action Details				
System Operation :	Launch Task System Operation Failure		÷	
Task Reference :	FAIL-NOTIF-SLACK Task Reference Variable :			
		٥	0	
	Name Value			
Override Variables :	task_status \${ops_status}		* H	
	exec_user \${ops_execution_user}			
Override Variables	job_type \${ops_task_type}		Ŧ	
Resolution				

Job Failure Notification		
Job Name:	Job Type:	
SCAN-DATA-FILE-AND-FORMAT	Linux/Unix	
Job Status:	Invoked By:	
FAILED	Demo-Workflow-Frankfurt TJ - Slack	
	approval	
Execution User:		
tjbackup		

Send a Approval Notification to slack

SLACK-NOTIFY De	tails			
Stack Function	Approval Notification	·	Jobname :	S(job_name)
Job Approval Description	\$(desc)		Job Type :	Manual
	S(lask_status)		Slack Webhook URL :	and the second se
invoked by	\$(invoked_by)		Execution User	\$(exec_user)

Approval Message in Slack

ob Name:	Job Type:
Jser-Creation-Approval-Demo User	Manual
PagerDuty, Zendesk,SNOW)	
ob Status:	Invoked By:
CTION REQUIRED	Demo-Workflow
Description:	
ser creation approval- Demo User	

Document References

This document references the following documents:

Name	Location	Description
Universal Templates	https://docs.stonebranch.com/confluence/display/UC70/Universal+Templates	User documentation for creating Universal Templates in the Universal Controller user interface.
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Universal Controller 7.0.x Available Integrations

Snowflake

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 - Copy Multiple Files (Linux Server) to Snowflake Staging Area
 - Executing a Snowflake Command
 - Snowflake Universal Task Functions
- Document References

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Request Support:

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Introduction

This Universal Task allows Stonebranch users to orchestrate, schedule, trigger, and monitor the Snowflake load and unload process from different data sources (cloud storage or local VM's) directly from Universal Controller. It uses Python libraries to perform all functions listed in the following sections. Alternatively, you also can perform all these operations using the snowflake JDBC driver which you can add to the Universal Controller libraries, and use SQL Task to perform any operations with Snowflake (https://docs.snowflake.com/en/user-guide/jdbc-download.html)

Overview

Users can orchestrate the Snowflake functionalities using the following features available in the Universal Task

- UAC functionalities (Snowflake -Loading)
 - Load data from AWS S3 to Snowflake.
 - Load data from Azure Storage to Snowflake.
 - Load data from Google storage to Snowflake.
 - Load Internal stage file to Snowflake Table.
 - Copy from local server to Internal staging.
- UAC functionalities (Snowflake Unloading)
 - Unload Snowflake data to AWS S3.
 - Unload Snowflake data to Azure Storage.
 - Unload Snowflake data to Google Storage.
 - Unload Snowflake data to Internal stage.
 - Unload from internal stage to local server.
- UAC functionalities (Snowflake Execute Commands)
 - Execute a Snowflake command.

Software Requirements

This integration requires an Universal Agent and a Python runtime to execute the Universal Task against Snowflake.

Software Requirements for Universal Template and Universal Task

- Requires Python 3.6 or higher. Tested with the Universal Agent bundled Python distribution.
- Python modules required:
 - https://raw.githubusercontent.com/snowflakedb/snowflake-connector-python/v2.3.9/tested_requirements/requirements_36.reqs
 - snowflake-connector-python
 - snowflake-ingest
 - Please refer to Snowflake URL : https://docs.snowflake.com/en/user-guide/python-connector-install.html for the latest Python connector details.

Software Requirements for Universal Agent

Either:

- Universal Agent for Windows x64 Version 6.6 and later with Python options installed.
- Universal Agent for Linux Version 6.6 and later with Python options installed.

Software Requirements for Universal Controller

• Universal Controller Version 6.6.0.0 and later.

Software Requirements for the Application to be Scheduled

This Universal Task has been tested with the snowflake-connector-python=2.3.9 and snowflake-ingest=1.0.3.

Technical Considerations

- This task uses Python modules snowflake-connector-python and snowflake-ingest to make REST-API calls to Snowflake, Additionally, as a prerequisite, users might need to install other packages
 listed in https://raw.githubusercontent.com/snowflakedb/snowflake-connector-python/v2.3.9/tested_requirements/requirements_36.reqs.
- Snowflake login credential, Snowflake Account name, and URL would be needed in UAC for this Universal Task.
- In the case of data ingest from internal staging to Snowflake table through a pipeline, you would need to supply a private key file from local server and public key for the same to be loaded against the Snowflake user used in Universal Task.
- Use the Snowflake instructions is in URL : https://docs.snowflake.com/en/user-guide/key-pair-auth.html for Key pair authentication and rotation process.

Key Features

Feature	Description
Load data from AWS S3 to Snowflake	Load the S3 bucket file(s) into a Snowflake table, You may specify the file format options and copy options appropriately.
Load data from Azure Storage to Snowflake	Load the Azure container blobs into a Snowflake table, You may specify the file format options and copy options appropriately.
Load data from Google storage to Snowflake	Load the google storage bucket files into a Snowflake table, You may specify the file format options and copy options appropriately. Please note that you will need to define the storage integration in Snowflake and provide this in the Universal Task.
Load Internal stage file to Snowflake Table	Files that are available in Snowflake internal storage to be loaded into a Snowflake table using the pipe name and authentication using private public key files. The data can be loaded in Snowflake using patterns.
Copy from local server to Internal staging	Copies files from local Windows or Linux server to Snowflake internal staging area.
Unload Snowflake data to AWS S3	This feature helps to unload the data from a Snowflake table to a AWS S3 bucket, file format options and copy options can be provided appropriately.
Unload Snowflake data to Azure Storage	This feature helps to unload the data from a Snowflake table to an Azure container; file format options and copy options can be provided appropriately.
Unload Snowflake data to Google Storage	This feature helps to unload the data from a Snowflake table to a Google cloud Storage; file format options and copy options can be provided appropriately. Also, this would need an storage integration name from Snowflake.
Unload Snowflake data to Internal stage	Unloads the Snowflake table into an internal staging area in Snowflake.
Unload from internal stage to local server	This feature helps to copy the files in staging area to a local windows or a Linux server.
Execute a Snowflake command	Users can use this feature to execute snowflake commands; for example: Copy, Remove, Select, Delete, etc.

Import Snowflake Integration Built-In Universal Template

To use the built-in Universal Template, you first must perform the following steps:

- 1. This Universal Task requires the Resolvable Credentials feature. Check that the Resolvable Credentials Permitted system property has been set to true.
- 2. Copy or Transfer the Universal Template file to a directory that can be accessed by the Universal Controller Tomcat user.
- 3. In the Universal Controller UI, select Configuration > Universal Templates to display the current list of Universal Templates.
- 4. Right-click any column header on the list to display an Action menu.
- 5. Select Import from the menu, enter the directory containing the Universal Template file(s) that you want to import, and click OK.

When the files have been imported successfully, the Universal Template will appear on the list.

Configure Snowflake Integration Universal Task

For the new Universal Task type, create a new task, and enter the task-specific details that were created in the Universal Template.

Field Descriptions for Snowflake Integration Universal Task

Field	Description
Snowflake Account	Provide the Snowflake user account; for example, sr14548.eu-central-1.
Snowflake Host URL	Specify your host information in the form of a URL; for example, sr14548.eu-central-1.snowflakecomputing.com.
Snowflake Login Name	Specify your Snowflake login name
Log Level	Select a log level.
Select a Snowflake function	Select the required Snowflake function (if the required function not available, check the SQL task to invoke snowflake DB).
Snowflake Command	Provide a Snowflake command either in SQL or put / get commands etc.
Local file Name & Path	Provide the local file name that need to be copied to stage.
Stage Name	Provide the stage(internal) name in Snowflake.
Encrypted Private Key	Select only if you have a encrypted private key.
Stage File Name(s)	Provide the stage file names; if there are multiple files, separate by comma.
Pipe Name	Specify the fully-qualified name of the pipe to use to load the data.
Private Key File Path	Provide the private key file path to establish connection to Snowflake for data ingest.
Private Key Password	Provide the password for private if it is encrypted.
Snowflake Table Name	Provide the full path and the Snowflake table name where the table to be loaded.
Use AWS Credentials	Check this if you need to supply AWS access key credentials.
AWS Key ID & Secret Access Key	Provide the AWS secret Access Key (runtime user AWS Key id and secret key in the password section).
AWS Storage Integration	Provide the name of the AWS storage integration created in Snowflake.

Load using Pattern	If you need load the data using pattern, check this option.
S3 Bucket URL	Provide your S3 bucket URL s3:// <your_s3_bucket>/data/.</your_s3_bucket>
Azure container File	Provide the Azure container file URL starting with azure://
Azure Storage Integration	Provide the Azure storage integration created in Snowflake.
GCP storage URL	Provide the bucket name and the file name; for example, gcs://mybucket/data/files.
Azure Sas Token	Provide the Azure Sas Token.
Existing File Format Name	Specify an existing named file format to use for loading data into the table.
Storage Integration	Provide the Snowflake storage integration details.
Pattern	Regular expression pattern string - specifying the file names and/or paths to match.
File Format Name	Specifies an existing named file format to use for loading data into the table.
Format Type	Specify the format type: CSV JSON AVRO ORC PARQUET XML.
File Format Type Options	Specify the file format type options; for example, FIELD_DELIMITER = ' ' if CSV type Refer to https://docs.snowflake.com/en/sql-reference/sql/copy-into-table.html
Copy Options	Include other copy options; for example, ON_ERROR = CONTINUE or FORCE=TRUE- Refer to https://docs.snowflake.com/en/sql-reference/sql/copy-into-table.html
Polling Interval (Secs)	Provide the Polling Interval time in Seconds, in the case of data ingestion from internal staging to Snowflake Table.
Number of times to Poll	Specify the number of times to poll; otherwise, default is set to 50, in the case of data ingestion from internal staging to Snowflake Table.

Examples for Snowflake Integration Universal Tasks

Load Data from Azure Storage to Snowflake Table

 Snowflake_Load_Ur 	load_Data Details		
Snowflake Account :	sr14548.eu-central-1	Snowflake Host URL :	sr14548.eu-central-1.snowflakecomputing.com
Snowflake Login Name :	snowflake	Log Level :	INFO 🗸
Select a Snowflake function :	Load data from Azure Storage to Snowflake	Snowflake Table Name :	demo_db.public.mytable
Azure container File :	azure://sbsolutionengineering.blob.core.windows.net/sapcsvdat	Azure Sas Token :	azure_sas_token
Existing File Format Name :		Format Type :	CSV 🗸
File Format Type Options :	field_delimiter = ',' skip_header = 1		
Copy Options :	FORCE=TRUE		
Runtime Directory :			
			o o
Environment	Name	Value	
Variables :		No items to show.	

Load Data from AWS S3 to Snowflake Table

Snowflake Account :	ko98700.eu-central-1	Snowflake Hos URL	t ko98700.eu-central-1.snowflakecomputing.com		
Snowflake Login Name :	snowflake	▼ 🔚 Log Level			~
Select a Snowflake function :	Load data from AWS S3 to Snowflake	Snowflake Table	e demo_db.public.mytable		
AWS Access Key :	\checkmark	AWS Key ID 8 Secret Access Key	AWS_snowflake_access	~	11/ 11/
S3 Bucket URL :	s3://stonebranchse/demo_data1.csv	Existing File Forma Name	it 🔲		
Format Type :	CSV	*			
File Format Type Options :	field_delimiter = ',' skip_header = 1				
Copy Options :	FORCE=TRUE				
Runtime Directory :					
				\odot	0
Environment	Name	Value			
Variables :		No items to show.			

Load Data from Google Cloud Storage to Snowflake Table

nowflake v 💽	Log Level :	sr14548.eu-central-1.snowflakecomputing.com		
oad data from Google storage to Snowflake				1
	Snowflake Table Name :	demo_db.public.mytable		
cs://load_so_data-1/demo_data.csv	Existing File Format Name :			
es_int	Format Type :	CSV		•
eld_delimiter = ',' skip_header = 1				
DRCE=TRUE				
			\odot	C
ame	Value			
	No items to show.			
cs ele	_int d_delimiter = ',' skip_header = 1 RCE=TRUE	_int Format Type : d_delimiter = ',' skip_header = 1 RCE=TRUE me Value	_int Format Type : CSV d_delimiter = ',' skip_header = 1 RCE=TRUE me Value	_int Format Type : CSV d_delimiter = ',' skip_header = 1 RCE=TRUE

Copy Local File to Snowflake Staging

Snowflake Account :	sr14548.eu-central-1	Snow	wflake Host URL : sr14548.eu-central-1.snowflakecomputing	J.com
Snowflake Login Name :	snowflake		Log Level : INFO	
Select a Snowflake function :	Copy from local server to Internal staging	✓ Local f	file Name & //home/ravi/snowflake/demo_data.csv	
Stage Name :	@DEMO_DB.public.snowpipe_stage			
Runtime Directory :				
				O
Environment	Name		Value	
Variables :		No item	ns to show.	

Load Snowflake Staging File to Table

Account :	sr14548.eu-central-1	Snowflake Host URL :	sr14548.eu-central-1.snowflakecomputing.com
Snowflake Login Name :		Log Level :	INFO
Select a Snowflake function :	Load Internal stage file to Snowflake Table	Encrypted Private Key :	
Stage File Name(s) :	demo_data.csv.gz		
Pipe Name :	demo_db.public.mypipe	Private Key File Path :	/home/ravi/snowflake/rsa_key.p8
Private Key Password :	private_key_password	Snowflake Table	demo_db.public.mytable
Load using Pattern :		Polling Interval (Secs) :	
Number of times to Poll :			
Runtime Directory :			
			0
Environment	Name	Value	
Variables :		No items to show.	

Unload Snowflake Table to AWS S3 Storage

ost ko98700.eu-central-1.snowflakecomputing.com vel : INFO ble ne : demo_db.public.mytable age nn : s3_integration me : Image
age s3_integration
mat 🔽
0 \ominus
v.

Unload Snowflake Table to Azure Storage

Snowflake Account :	ko98700.eu-central-1	central-1.snowflakecomputing.com
Snowflake Login Name :		
elect a Snowflake function :	Unload Snowflake data to Azure Storage Snowflake Table demo_db.pul	blic.mytable
Azure container File :	azure://sbsolutionengineering.blob.core.windows.net/sapcsvdat Azure Storage Integration :	
zure Sas Token :	azure_sas_token	
Format Type :	CSV	
File Format Type Options :		
Copy Options :		
untime Directory :		
		o (
Environment	Name Value	
Variables :	No items to show.	

Download Snowflake Stage File to Local Linux Server

Snowflake Account :	ko98700.eu-central-1	Snowflake Host URL :	ko98700.eu-central-1.snowflakecomputing.com		
Snowflake Login Name :	snowflake 💌 📰	Log Level :			
Select a Snowflake function :	Unload from internal stage to local server	Local file Name & Path :	/home/ravi/snowflake/		
Stage File Name(s) :	@DEMO_DB.public.snowpipe_stage/data_0_0_0.csv.gz				
Runtime Directory :					
Environment Variables :			• •		
	Name	Value			
	No items to show.				

Copy Multiple Files (Linux Server) to Snowflake Staging Area

Snowflake Account :	sr14548.eu-central-1 Snowflake Host URL : sr14548.eu-central-1.snowflakecomputing.com	n		
Snowflake Login Name :	snowflake 🔽 🔚 Log Level : INFO			
elect a Snowflake function :	Copy from local server to Internal staging Local file Name & //home/ravi/snowflake/demo_dat*.csv Path:			
Stage Name :	@DEMO_DB.public.snowpipe_stage			
untime Directory :				
		0	C	
Environment	Name Value			
Variables :	No items to show.			
	Ho Ichis to show.			

Executing a Snowflake Command

Account :	ko98700.eu-central	-1		Snowflake Host URL :	ko98700.eu-central-1	.snowflakecon	nputing.com		
Snowflake Login Name :	snowflake		*	Log Level :	INFO				*
Select a Snowflake function :	e Execute a Snowflake command								
		mand_remove_files						*	
cript Details: scr_s	nowflake_command	remove_files							
				📳 Update	e 🔏 Upload Script	Сору	Delete	Sefresh	X Clos
Script	Tasks No	otes 🛛 😝 Versions							
- Details									
100	Script Name :	scr_snowflake_com	mand_remove_files	1	Version :		2		-
	Description :								
	Script Type :	Data		Resolv	e UAC Variables : 😰	1			
		remo∨e @demo_db	.public.snowpipe_sta	ge pattern='.*.o	sv.gz';				

Snowflake Universal Task Functions

Account :	ko98700.eu-central-1	URL :	ko98700.eu-central-1.snowflakecomputing.com
Snowflake Login Name :	snowflake		
elect a Snowflake function :	Unload Snowflake data to Google Storage	Snowflake Table Name :	demo_db.public.mytable
GCP storage	Copy from local server to Internal staging Load Internal stage file to Snowflake Table	Existing File Format Name :	
	Load data from AWS S3 to Snowflake Load data from Azure Storage to Snowflake	File Format Name :	demo_db.public.uacformat
Copy Options :	Load data from Google storage to Snowflake Unload Snowflake data to AWS S3		
luntime Directory :	Unload Snowflake data to Azure Storage		
	Unload Snowflake data to Google Storage Unload Snowflake data to Internal stage		0
Environment	Unload from internal stage to local server Execute a Snowflake command	Value	
Variables :		No items to show.	

Document References

This document references the following documents:

Name	Location	Description
Universal Templates	https://docs.stonebranch.com/confluence/display/UC70/Universal+Templates	User documentation for creating Universal Templates in the Universal Controller user interface.
Universal Tasks	https://docs.stonebranch.com/confluence/display/UC70/Universal+Tasks	User documentation for creating Universal Tasks in the Universal Controller user interface.

SQL

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 - Database Type: SAP HANA
 - Example: Run a SQL Script on SAP HANA
- Document References

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Introduction

This Universal Task allows users to execute SQL scripts and functions against a MySQL, PostgreSQL, Microsoft SQL Server, Oracle and SAP HANA database.

It uses an agentless connection via ODBC towards SQLSERVER, MySQL and PostgreSQL and the oracle basic instant client to connect to an Oracle database.

Software Requirements

Software Requirements for Universal Template and Universal Task

- Universal Agent for Linux or Windows Version 6.9.0.0 or later is required.
- Universal Agent needs to be installed with python option (--python yes).
- The python ODBC module pyodbc v4.0.30 needs to be installed for MySQL, PostgreSQL and Microsoft SQL Server connections.
- The python SAP HANA module hdbcli v2.6.58 needs to be installed for SAP HANA connections.
- The python Oracle module cx_oracle 8.0.1needs to be installed for Oracle Database connections.

Software Requirements Universal Controller

• Universal Controller 6.9.0.0. or later is required

Software Requirements for the Application to be Scheduled

The Universal Task has been tested for the following databases, Versions and Connector. Please make sure that the connector is installed for your database.

Name	Version	Database Connector
MySQL	8	MySQL ODBC 8.0 Unicode Driver
PostgreSQL	13	PostgreSQL Unicode
Microsoft SQL Server	15	either one of them: • SQL Server Native Client 11.0, • ODBC Driver 17 for SQL Server
Oracle	18XE	Oracle Instant Client v19.6.0.0.0
SAP HANA		not required - part of the SAP Python hdbcli module

Note

If you have a different Database Connector than mentioned in the table above. you can add a new connector to the Universal Task by adding it to the Universal Template of the Universal Task with name SQL.

In Universal Controller

Administration Universal Templates SQL Fields odbc_drivername New - button

Field	Field Details: odbc_drivername				
	Field O Choices				
4 CI	hoices	New 😂			
	Value	Label			
II	SQL Server Native Client 11.0	SQL Server Native Client 11.0			
II	ODBC Driver 17 for SQL Server	ODBC Driver 17 for SQL Server			
II	MySQL ODBC 8.0 Unicode Driver	MySQL ODBC 8.0 Unicode Driver			
11 11	PostgreSQL Unicode	PostgreSQL Unicode			

SQL Universal Task Key Features

The solution supports the following file transfer scenarios:

- The Universal Task supports execution of SQL scripts for Oracle, MySQL, PostgreSQL, Microsoft SQL Server and SAP HANA.
- For Oracle the execution of SQL scripts and oracle PLSQL blocks are supported.
- All connections are agentless via ODBC for SQLSERVER, MySQL and PostgreSQL.
- Oracle connections are performed agentless using the oracle basic instant client.
- SAP Hana Database connections are performed agentless using the SAP HANA client for Python.
- The Universal Task supports both Universal Agent for Linux/Unix and Windows.
- You can select different log-levels e.g. Info and debug.
- You can decide whether or not the SQL-output is provided in the standard out.
- All Passwords are encrypted using Controller Credentials.
- For SQLSERVER Windows Authentication and SQLSERVER Authentication is supported.

Import SQL Universal Task Built-In Universal Template

To use the built-in Universal Template, you first must perform the following steps:

- 1. This Universal Task requires the Resolvable Credentials feature. Check that the Resolvable Credentials Permitted system property has been set to true.
- 2. Copy or Transfer the Universal Template file to a directory that can be accessed by the Universal Controller Tomcat user.
- 3. In the Universal Controller UI, select Configuration > Universal Templates to display the current list of Universal Templates.
- 4. Right-click any column header on the list to display an Action menu.
- 5. Select Import from the menu, enter the directory containing the Universal Template file(s) that you want to import, and click OK.

When the files have been imported successfully, the Universal Template will appear on the list.

Configure SQL Universal Tasks

For the new Universal Task type, create a new task and enter the task-specific Details that were created in the Universal Template.

Field Descriptions for SQL Universal Task

The following will provide a configuration Example for each of the supported Databases:

- Database Type: MySQL
- Database Type: Oracle SQL
- Database Type: Oracle PLSQL Block
- Database Type: PostgreSQL
- Database Type: Microsoft SQL Server
- Database Type: SAP HANA

Database Type: MySQL

Field	Description
Database Type	Type of database to connect: • MySQL • Oracle • PostgreSQL • Microsoft SQL Server • SAP HANA
Database Name	Database name or oracle service name
Database Server	Database Servername e.g. localhost
Database Port	Port of the Database e.g. • MySQL: 3306 • Oracle: 1541 • PostgreSQL: 5432 • Microsoft SQL Server: 1433 • SAP HANA: 39013
Database Credentials	Database Connection Credentials
ODBC Drivername	Name of the ODBC driver - the field is only relevant for MySQL, PostgreSQL and Microsoft SQL Server. The following driver are available for selection: • MySQL: MySQL ODBC 8.0 Unicode Driver • MS SQL Server: SQL Server Native Client 11.0, • MS SQL Server: ODBC Driver 17 for SQL Server

	PostgreSQL: PostgreSQL Unicode
	Additional driver can be added in the SQL Task Universal Template under:
	Administration Universal Templates SQL Fields odbc_drivername New
Script	The database script to execute Note: The name should not contain a Universal Controller Variable e.g. script name: sb-\${ENV}-proc01 will not work, because it contains a variable (\${ENV}) in the name.
Get Output	prints the SQL output to STDOUT
	In case of an Oracle Stored procedure print the dbms_output to STDOUT.
Loglevel	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]

Example: Run a SQL script on MySQL

General —						
Task Name :	MySQL Task		Version :	12		
Task Description :						
Member of Business Services :						~
Resolve Name Immediately :			Time Zone Preference :	System Default	φ.	
Hold on Start :						
Virtual Resource Priority :	10	*	Hold Resources on Failure :			
Agent Details						_
Cluster :						
Agent :	\${AGT_WINDOWS}		Agent Variable :			
Credentials :		× =	Credentials Variable :			
Run with Highest Privileges :						
Interact with Desktop :						
SQL Details						
Database Type :	MySQL	*				
Database Name :	world		Database Server :	localhost		
Database Port :	3306					
Database Credentials :	Cred_MySQL	*				
ODBC Drivername :	MySQL ODBC 8.0 Unicode Driver	*				
Script Type :	sqlscript	*				
Script :	mysql_select	*				
Get Output :						
Loglevel :	INFO	~				

Database Type: Oracle - SQL

Field	Description
Database Type	Type of database to connect: • MySQL • Oracle • PostgreSQL • Microsoft SQL Server • SAP HANA
Database Name	Database name or oracle service name
Database Server	Database Servername e.g. localhost
Database Port	Port of the Database e.g. • MySQL: 3306 • Oracle: 1541 • PostgreSQL: 5432 • Microsoft SQL Server: 1433 • SAP HANA: 39013
Database Credentials	Database Connection Credentials
Mode	Connection Authorization Mode: [sysdba sysasm sysoper sysbkp sysdgd syskmt None] The field is only relevant oracle connections
Script Type	The field is only relevant for oracle connections [SQL Script PL/SQL Block] • SQL Script - select to execute an SQL Script • PL/SQL Block - select to run an PL/SQL Block
Script	The database script to execute Note: The name should not contain a Universal Controller Variable e.g. script name: <i>sb</i> -\$ <i>{ENV}-proc01</i> will not work, because it contains a variable (\${ENV}) in the name.
Get Output	Prints the SQL output to STDOUT In case of an Oracle Stored procedure print the dbms_output to STDOUT.
Loglevel	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]

Example: Run a SQL Script on Oracle - SQL

General				
Task Name :	Oracle Task - SQL script		Version : 7	
Task Description :	EC2AMAZ-KP602N3			
Member of Business Services :	SQL-Task			*
Resolve Name Immediately :			Time Zone Preference : System Default	~
Hold on Start :				
Virtual Resource Priority :	10	~	Hold Resources on Failure :	
Agent Details				
Cluster :				
Agent :	\${AGT_WINDOWS}		Agent Variable :	
Credentials :		*	Credentials Variable :	
Run with Highest Privileges :				
Interact with Desktop :				
SQL Details				
Database Type :	Oracle	*		
Database Name :	XE		Database Server: 30.0.1.241	
Database Port :	1521			
Database Credentials :	Cred_Oracle	*		
Mode :	sysdba	~		
Script Type :	SQL Script	*		
Script :	oracle_select	× .		
Get Output :				
Loglevel :	DEBUG	*		

Database Type: Oracle - PLSQL Block

Field	Description
Database Type	Type of database to connect:
	 MySQL Oracle PostgreSQL Microsoft SQL Server SAP HANA
Database Name	Database name or oracle service name
Database Server	Database Servername e.g. localhost

Database Port	Port of the Database e.g. • MySQL: 3306 • Oracle: 1541 • PostgreSQL: 5432 • Microsoft SQL Server: 1433 • SAP HANA: 39013
Database Credentials	Database Connection Credentials
Mode	Connection Authorization Mode:
	[sysdba sysasm sysoper sysbkp syskmt None]
	The field is only relevant oracle connections
Script Type	The field is only relevant for oracle connections
	[SQL Script PL/SQL Block]
	 SQL Script - select to execute an SQL Script PL/SQL Block - select to run an PL/SQL Block
Script	The database script to execute Note: The name should not contain a Universal Controller Variable e.g. script name: sb-\${ENV}-proc01 will not work, because it contains a variable (\${ENV}) in the name.
Get Output	prints the SQL output to STDOUT
	In case of an Oracle Stored procedure print the dbms_output to STDOUT.
Loglevel	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]

Example: Run an Oracle - PLSQL Block

General					
Task Name :	Oracle Task - PLSQL block		Version :	10	
Task Description :	EC2AMAZ-KP602N3				
Member of Business Services :	SQL-Task				
Resolve Name Immediately :			Time Zone Preference :	System Default	~
Hold on Start :					
Virtual Resource Priority :	10	~	Hold Resources on Failure :		
Agent Details					
Cluster :					
Agent :	\${AGT_WINDOWS}		Agent Variable :	V	
Credentials :		× =	Credentials Variable :		
Run with Highest Privileges :					
Interact with Desktop :					
SQL Details					
Database Type :	Oracle	*			
Database Name :	XE		Database Server :	30.0.1.241	
Database Port :	1521				
Database Credentials :	Cred_Oracle	*			
Mode :	sysdba	*			
Script Type :	PL/SQL Block	*			
Script :	oracle_block	*			
Get Output :	V				
Loglevel :	DEBUG	¥			

Database Type: PostgreSQL

Field	Description
Database Type	Type of database to connect:
	 MySQL Oracle PostgreSQL Microsoft SQL Server SAP HANA
Database Name	Database name or oracle service name
Database Server	Database Servername e.g. localhost

Database Port	Port of the Database e.g. MySQL: 3306 Oracle: 1541 PostgreSQL: 5432 Microsoft SQL Server: 1433 SAP HANA: 39013
Database Credentials	Database Connection Credentials
ODBC Drivername	Name of the ODBC driver - the field is only relevant for MySQL, PostgreSQL and Microsoft SQL Server. The following driver are available for selection: • MySQL: MySQL ODBC 8.0 Unicode Driver • MS SQL Server: SQL Server Native Client 11.0, • MS SQL Server: ODBC Driver 17 for SQL Server • PostgreSQL: PostgreSQL Unicode Additional driver can be added in the SQL Task Universal Template under: Administration Universal Templates SQL Fields odbc_drivername New
Script	The database script to execute Note: The name should not contain a Universal Controller Variable e.g. script name: sb-\${ENV}-proc01 will not work, because it contains a variable (\${ENV}) in the name.
Get Output	prints the SQL output to STDOUT In case of an Oracle Stored procedure print the dbms_output to STDOUT.
Loglevel	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]

Example: Run a SQL Script on PostgreSQL

General		
Task Name :	PostgreSQL Task	Version : 15
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 :
Agent Details		
Cluster :		
Agent :	\${AGT_WINDOWS}	Agent Variable : 📝
Credentials :	× 1	Credentials Variable :
Run with Highest Privileges :		
Interact with Desktop :		
SQL Details		
Database Type :	PostgreSQL	
Database Name :	postgres	Database Server : localhost
Database Port :	5432	
Database Credentials :	Cred_Postgresql	
ODBC Drivername :	PostgreSQL Unicode	
Script Type :	sqlscript	
Script :	postgresql_select	
Get Output :	V	
Loglevel :	DEBUG	

Database Type: Microsoft SQL Server

Field	Description
Database Type	Type of database to connect:
	 MySQL Oracle PostgreSQL Microsoft SQL Server SAP HANA
Database Name	Database name or oracle service name
	Database Servername e.g. localhost

Database Server	
Database Port	Port of the Database e.g. MySQL: 3306 Oracle: 1541 PostgreSQL: 5432 Microsoft SQL Server: 1433 SAP HANA: 39013
Database Credentials	Database Connection Credentials
Authentication	 Supported Methods: Microsoft SQL Server - Windows Authentication Microsoft SQL Server - SQL Server Authentication Note: If "Microsoft SQL Server - Windows Authentication" is chosen you should select under the Agent "Credentials" the Windows user, who should execute the script. The database credentials are not used for SQLSERVER -Windows Authentication.
ODBC Drivername	Name of the ODBC driver - the field is only relevant for MySQL, PostgreSQL and Microsoft SQL Server. The following driver are available for selection: • MySQL: MySQL ODBC 8.0 Unicode Driver • MS SQL Server: SQL Server Native Client 11.0, • MS SQL Server: ODBC Driver 17 for SQL Server • PostgreSQL: PostgreSQL Unicode Additional driver can be added in the SQL Task Universal Template under: Administration Universal Templates SQL Fields odbc_drivername New
Script	The database script to execute Note: The name should not contain a Universal Controller Variable e.g. script name: sb-\${ENV}-proc01 will not work, because it contains a variable (\${ENV}) in the name.
Get Output	prints the SQL output to STDOUT In case of an Oracle Stored procedure print the dbms_output to STDOUT.
Loglevel	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]

Example: Run a SQL Script on Microsoft SQL Server

General					
Task Name :	Microsoft SQL Server Task		Version :	21	
Task Description :					
Member of Business Services :	SQL-Task				
Resolve Name Immediately :			Time Zone Preference :	System Default	*
Hold on Start :					
Virtual Resource Priority :	10	*	Hold Resources on Failure :		
Agent Details					
Cluster :					
Agent :	\${AGT_WINDOWS}		Agent Variable :	V	
Credentials :		*	Credentials Variable :		
Run with Highest Privileges :					
Interact with Desktop :					
SQL Details					
Database Type :	Microsoft SQL Server	~			
Database Name :	demodb		Database Server :	EC2AMAZ-KP602N3	
Database Port :	1433				
Database Credentials :	Cred_SQL Server	*	Authentication :	Microsoft SQL Server - SQL Server Auth	entication
	SQL Server Native Client 11.0	*		Microsoft SQL Server - SQL Server Auth Microsoft SQL Server - Windows Authen	
Script Type :	sqlscript	v.			
Script :	sqlserver_select	× [=			
Get Output :					
Loglevel :	DEBUG	*			

Database Type: SAP HANA

Field	Description
Database Type	Type of database to connect:
	 MySQL Oracle PostgreSQL Microsoft SQL Server SAP HANA
Database Name	Database name or oracle service name
Database Server	Database Servername e.g. localhost

Database Port	Port of the Database e.g. MySQL: 3306 Oracle: 1541 PostgreSQL: 5432 Microsoft SQL Server: 1433 SAP HANA: 39013
Database Credentials	Database Connection Credentials
Script	The database script to execute Note: The name should not contain a Universal Controller Variable e.g. script name: sb-\${ENV}-proc01 will not work, because it contains a variable (\${ENV}) in the name.
Column Separator	The field is only relevant for SAP HANA connections Output separator [Semicolon Comma Hash Whitespace]
Get Output	prints the SQL output to STDOUT In case of an Oracle Stored procedure print the dbms_output to STDOUT.
Loglevel	Universal Task logging settings [DEBUG INFO WARNING ERROR CRITICAL]

Example: Run a SQL Script on SAP HANA

Tack Name -	SAP HANA Task		Version :	3	
			VCI3IUIT.	3	
Task Description :					
Member of Business Services :	SQL-Task				1
Resolve Name Immediately :			Time Zone Preference :	System Default	*
Hold on Start :					
Virtual Resource Priority :	10	۷	Hold Resources on Failure :		
Agent Details					
Cluster :					
Agent :	\${LX_AGENT}		Agent Variable :	V	
Credentials :		× 💷	Credentials Variable :		
Run with Highest Privileges :					
Interact with Desktop :					
SQL Details					
Database Type :	SAP HANA	×			
Database Name :	SYSTEMDB		Database Server :	192.168.88.14	
Database Port :	39013				
Database Credentials :	Cred_SAP_HANA	×			
Script Type :	1100 0 00	*			
Script :	SAP_HANA_Test	v =	Column Separator :	Semicolon	-
Get Output :	7			Semicolon	
Loglevel :	DEBUG	~		Comma Whitespace	
C Particular				Hash "#"	

Document References

This document references the following documents:

Name	Location	Description
Universal Templates	https://docs.stonebranch.com/confluence/display/UC70/Universal+Templates	User documentation for creating Universal Templates in the Universal Controller user interface.
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Universal Controller 7.0.x Available Integrations

UiPath for UAC Integration

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 - UiPath Sample Universal Task
 - Sample webservices Task for Access Token Generation
 - Generated Access Token can be Stored in a Global Variable by Using the UAC function for the Above webservices Task in Action Set Variable
- Document References

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Introduction

This Universal Task allows Stonebranch users to schedule, trigger, and monitor the UiPath (RPA) process directly from the Universal Controller.

Overview

- This task uses a Python request module to make REST-API calls to the UiPath orchestrator.
- It can trigger the RPA process in UiPath using just UiPath process name, orchestrator base URL, UiPath account name and service instance.
- The task triggers the UiPath process for execution, monitors until process completion, and populates the results in Universal Controller.
- It also features a tight integration with ITSM tools, meaning that it can auto-create incidents in case of UiPath RPA process execution failure.

Software Requirements

This integration requires an Universal Agent and a Python runtime to execute the Universal Task against a UiPath orchestrator instance.

Software Requirements for Universal Template and Universal Task

- Requires Python 3.6 or higher. Tested with the Universal Agent bundled Python distribution.
- Python modules required:
 - requests

Software Requirements for Universal Agent

Either:

- Universal Agent for Windows x64 Version 6.7.0.0 and later with python options installed
- Universal Agent for Linux Version 6.7.0.0 and later with python options installed

Software Requirements for Universal Controller

Universal Controller Version 6.6.0.0 and later

Software Requirements for the Application to be Scheduled

This Universal Task can work with the following UiPath Orchestrator versions:

- 2020.10.1
- 2020.4.1
- 2019.10.14
- 2018.4.1

Technical Considerations

Please note that the UiPath access token is consumed by this Universal Task from the Global Variable named: Uipath_access_token. You can update the access token periodically through a web services task.

UiPath Key Features

Feature	Description
Trigger a UiPath Job	Trigger a UiPath job/process and monitor the UiPath (RPA) process directly from the Universal Controller.

Import UiPath Built-In Universal Template

To use the built-in Universal Template, you first must perform the following steps:

- 1. This Universal Task requires the Resolvable Credentials feature. Check that the Resolvable Credentials Permitted system property has been set to true.
- 2. Copy or Transfer the Universal Template file to a directory that can be accessed by the Universal Controller Tomcat user.
- 3. In the Universal Controller UI, select Configuration > Universal Templates to display the current list of Universal Templates.
- 4. Right-click any column header on the list to display an Action menu.

5. Select Import from the menu, enter the directory containing the Universal Template file(s) that you want to import, and click OK.

When the files have been imported successfully, the Universal Template will appear on the list.

Configure UiPath Universal Task

For the new Universal Task type, create a new task and enter the task-specific details that were created in the Universal Template.

Field Descriptions for UiPath Universal Task

Field	Description
UiPath Process Name	Actual RPA workflow name that needs to be executed by UiPath Bot
UiPath service Instance	Service instance name can retrieve using the Api get:
	https://platform.uipath.com/cloudrpa/api/account/[account_logical_name]/getAllServiceInstances
UiPath Orchestrator URL	URL for the UiPath Orchestrator where its installed. Normally the cloud orchestrator/Community URL is
	https://platform.uipath.com:
UiPath Account Name	This is the UiPath Orchestrator Tenant Name:
	https://platform.uipath.com/cloudrpa/api/getAccountsForUser

Examples for UiPath Universal Tasks

UiPath Sample Universal Task

RPA-UiPATH Details	i	
UiPath Process Name :	SAP_CREATE_CUSTOMER	UiPath Service Instance : RaviKumarDemo5i196273
UiPath Account Name :	raviktcgvpgw	UiPath ORCHESTRATOR https://platform.uipath.com Base URL :
Runtime Directory :		
		0 0
Environment	Name	Value
Variables :		No items to show.

Sample webservices Task for Access Token Generation

/eb Service Details		1.1				
	HTTP(S)REST	×				
Authentication	None	~				
HTTP Version :	11	v				
HTTP Method :	POST	1	Timeout			
URL :	https://account.uipath.com/cauth	Noken				
				0	3	
URL Query	Name		Value			
Parameters .	No terms to show.					
HTTP Payload Type :	Raw		MIME Type ; application(son		-	
	Form					
	{ "grant_type": "refre "client_id": " "refresh_token": "	sh token",				
	}		and the second sec			

Generated Access Token can be Stored in a Global Variable by Using the UAC function for the Above webservices Task in Action Set Variable

 0 Abort Actions 							New @		
0 Email Notifications New 2									
						Elter_	Go To.		
vr 1 Set Vanable							New 2	Lipdated B	ly Update
	e Details pel Global	Exit Codes	On Late Start	On Late Finish	On Early Finish	Narie	Value	Ravi	2019-11
Success Nar	ner Ulipath_access_token		No	No	No	Upath_access	token S[_response.isonPath]	Gokhan	2019-00
Set Variable Details									20.8
							Update 😭 Delete 🐧	Refresh	K Close
Set Variable									
- Action Criteria									
Status	Success								141
Exit Codes									
On Late Start	10								
On Late Finish									
On Early Finish									
Circary									
Description									
Action Details									_
Variable Scope :	Global			- System Notif	fication Operation	on Success			12
Name :	Upath_access_token								_
	\$(_response.JsonPath(\$ access_token	10							_
Value									

Document References

This document references the following documents:

Name	Location	Description
Universal Templates	https://docs.stonebranch.com/confluence/display/UC70/Universal+Templates	User documentation for creating Universal Templates in the Universal Controller user interface.
Universal Tasks	https://docs.stonebranch.com/confluence/display/UC70/Universal+Tasks	User documentation for creating Universal Tasks in the Universal Controller user interface.