

Universal Task Documentation

Universal Automation Center support for scheduling Informatica Power Center V9.6.x

ut-inf-pc-v9-6-startworkflow-lin

Associated Activities:

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| CONFIDENTIALITY INFORMATION |
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| Revision | Date | Author | Changes |
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| 00 | 20180109 | Nils Buer | Initial Document (WIP) |
| 01 | 20180109 | Nils Buer | Error handling added |
| 02 | 20180111 | Nils Buer | Support for https connections |
| 03 | 20180307 | Nils Buer | Disclaimer added |

Abstract:

This Universal Task allows to schedule an Informatica Power Center Workflow by calling the Power Center Webservices Hub SOAP command *"startWorkflow"*.

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1 Disclaimer

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

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

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

2 Introduction

Informatica Power Center provides a Web Services Hub to schedule Power Center Workflows using the SOAP communications protocol for web services.

The here described Universal Task calls the “*startWorkflow*” SOAP Webservice to run a Workflow in Power Center.

Details on the Power Center Web Services Hub can be found here [1]:

Some details about the universal task for Power Center:

- It is based on the standard Power Center (PC) Web Services Hub using SOAP protocol
- The PC Web Services Hub Interface is called from a Universal Agent running on a Linux Server or Windows Server – Note: This document focuses on the Linux Version
- The Linux Server needs to have Python 2.7.x or 3.6.x installed
- Any Additional Web Services Hub SOAP command as listed in [1] can also be implemented using the same approach.
- An extract of the Python script, which is called as part of the Universal template can be found here [3] or can be looked up in the controller under the Universal template
- Exit code processing has been added to the universal task script:
 - In case a workflow fails E.g. If you provide a wrong workflow name, it will fail, and you can re-start the job with the correct ID.
 - In case of a connection error the task will fail e.g. wrong IP address or Port of the Power Center Web services HOST
 - In case a wrong password has been entered the instance will fail
- You can configure all connection Parameters via the Universal Task
- You can select different log-levels e.g. Info and debug
- Http and Https connections are supported (Note: the host certificate is not verified)

3 Installation

3.1 Software Requirements

Universal Task name: *Informatica startWorkflow_Linux*

Related UAC XML Files for template and task: [2]

Software used:

For the set-up you need:

1. Python 2.7.x (or 3.6.x) for Linux installed on a server where a Universal Agent is installed.
2. For Python the following modules are required:
 - *requests*, to perform the REST connection towards the PC SOAP API
 - *argparse*, to allow testing of the Universal Template script on the command line
 - *sys*, for output re-direct processing
 - *datetime*, date and time stamps for messages
 - logging, to provide logging capabilities for debug, info etc.
 - `xml.dom.minidom` import `parse`, `parseString`, to parse XML results

Note: Only the module requests need to be added to python 3.6.3

3. Universal Controller 6.4.2.x or higher
4. Universal Agent 6.3.0.3 or higher installed on a Linux Server
5. Power Center 9.6.x with Web Service Hub enabled

3.2 Installation Steps

The following describes the installation steps:

1. Install Python 2.7.x or 3.6.x for Linux on the Universal Controller server or any Linux Server running a Universal Agent.

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

Note:

In most cases python is already available on Linux. Check availability with: `python -V`

2. Add the request module to your python installation

In a dos command shell run as Administrator:

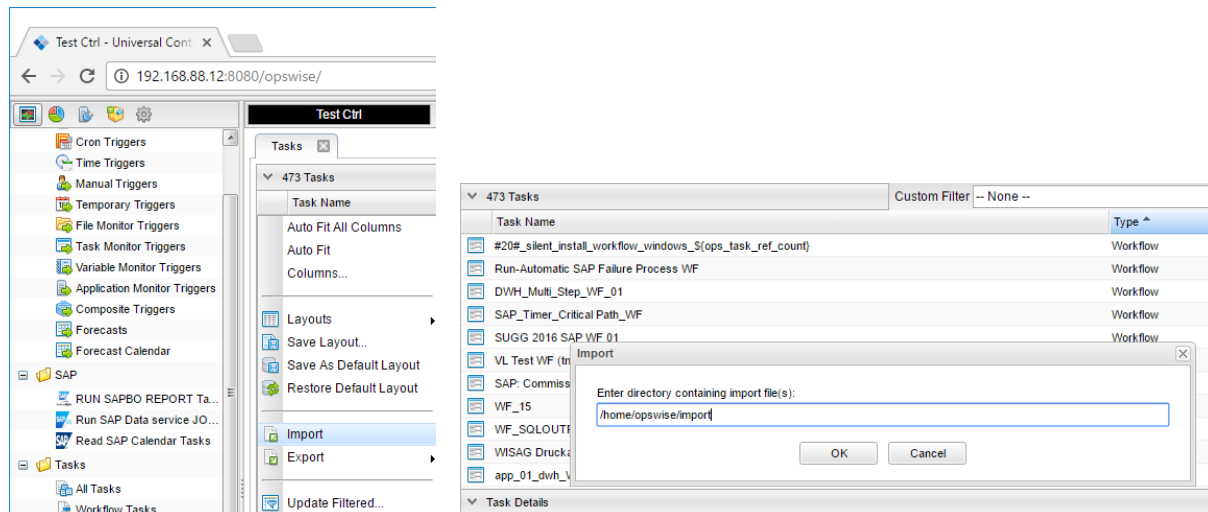
```
pip install requests
```

Note: The module *requests* contain the commands to perform the SOAP commands towards the Power Center Webservice Hub.

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

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

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



4 Universal Task Configuration

1. Activate: Resolvable Credentials in Universal Automation Center:

| 93 Properties | |
|----------------------------------|-------|
| Name | Value |
| Resolvable Credentials Permitted | true |

2. Fill Out the Universal Task for each Power Center Workflow to be scheduled:

Informatica startWorkflow_Linux_with_https Task Details: startWorkflow load_seller_data_linux

Update Launch Task View Parents Copy Delete Refresh Close

Informatica startWorkflow_Linux_with_https Task Variables Actions Virtual Resources Mutually Exclusive Instances Triggers Notes

General

Task Name: startWorkflow load_seller_data_linux **Version:** 18

Task Description: calls the "startWorkflow" Webservice on the Informatica Webservice Hub

Member of Business Services:

Resolve Name Immediately: ☐

Hold on Start: ☐

Virtual Resource Priority: 10 **Hold Resources on Failure:** ☐

Further Info's:

System:

Informatica startWorkflow_Linux_with_https Details

Agent: \${AGNT_LINUX_with_Curl} **Agent Cluster:**

Agent Variable: ☒ **Agent Cluster Variable:** ☐

Credentials: **Cluster Broadcast:**

Credentials Variable: ☐

repositoryname: stonebranch_repro **Port:** 7333

domainname: Domain_Walldorf **Informatica Credentials:** informatica

username: **IS servicename:** stonebranch_is

foldername: stonebranch **workflowname:** load_seller_data

requestmode: NORMAL **timeout:** 60

TaskinstancePath: **hostname:** Walldorf

loglevel: DEBUG **ssl:** No

Power Center Credential for Universal Task:

Credential Details: informatica

Update Convert Delete Refresh Close

Credential Versions

Details

Name: informatica **Version:** 1

Type: Resolvable

Runtime User: Administrator

Runtime Password:

Description: Credentials for Power Center

Key Location (FTP only):

Member of Business Services:

Description:

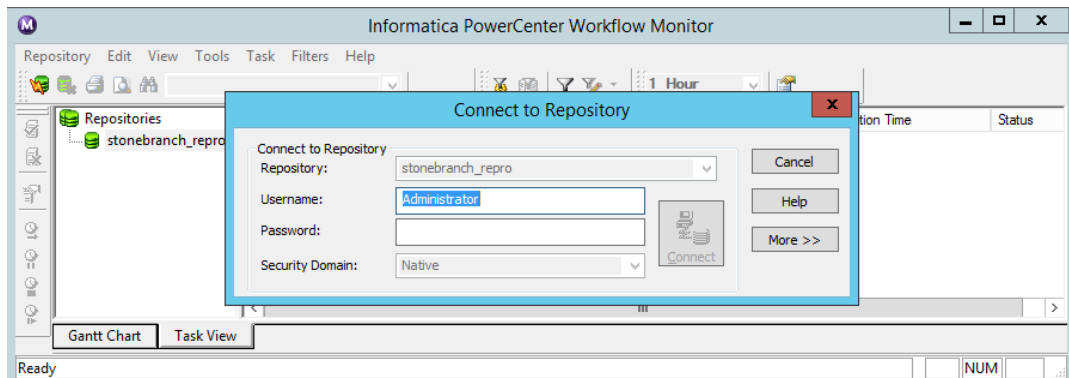
| Field | Required | Description |
|-------------------------|-----------|---|
| Agent | Mandatory | The Linux Universal Agent, which runs the Python request module to call the PC “startWorkflow” SOAP Webservice |
| Repositoryname | Mandatory | Name of the repository to log in to. |
| usernamepace | Optional | 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 PowerCenter domain. |
| Domainname | Mandatory | Domain name for the Integration Service. |
| Foldername | Mandatory | Name of the folder containing the workflow. |
| requestmode | Mandatory | Indicates the recovery strategy for the session task: - NORMAL. Restarts a session without recovery. - RECOVERY. Recovers a session. |
| loglevel | Mandatory | logging settings DEBUG, INFO, WARNING, ERROR, CRITICAL |
| Informatica Credentials | Mandatory | Credentials for Power Center |
| IS Servicename | Mandatory | Name of the Integration Service that runs the workflow. |
| workflowname | Mandatory | Name of the workflow to run. |
| Timeout | Mandatory | 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 60 seconds. Set to 0 to disable the timeout period. |
| Hostname | Mandatory | Web Services Hub host name |
| Port | Mandatory | Web Services Hub port number |
| SSL | Optional | 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: e.g. http: http://walldorf:7333/wsh https: https://walldorf:10333/wsh |

5 Power Center

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

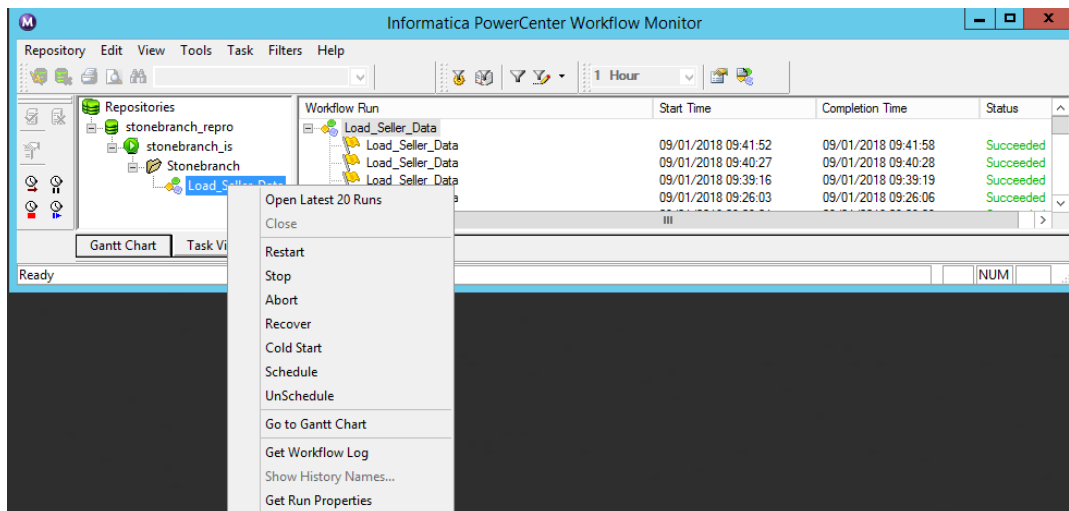
5.1 How to lookup a Workflow instance in PC

1. Log-in to the Power Center Workflow Monitor



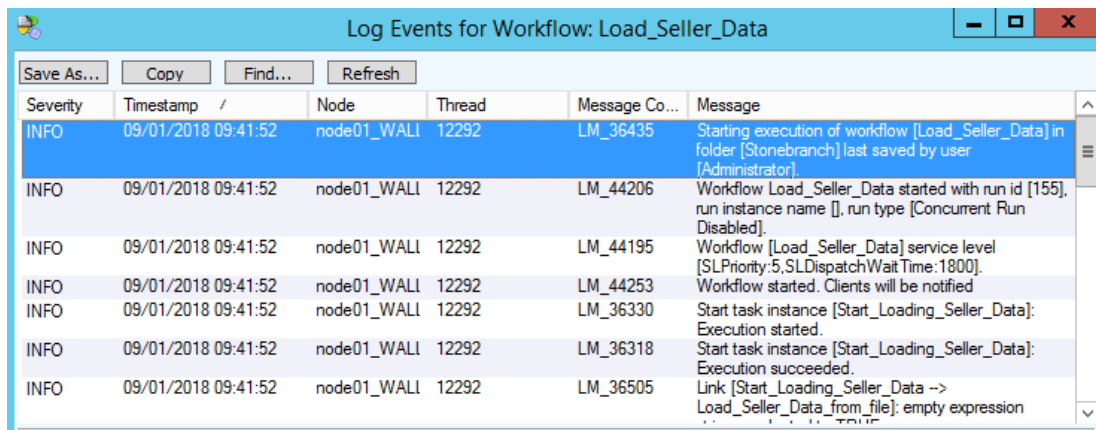
2. Log-in to the Power Center Workflow Monitor

Browse to your Workflowname. In the example the Workflow is called: *Load_Seller_Data*. In the right screen you can see all executed instances including their status e.g. *Succeeded*.



3. Verify the Workflow Log

Right Click on the workflow will allow to *Get the Workflow Log*



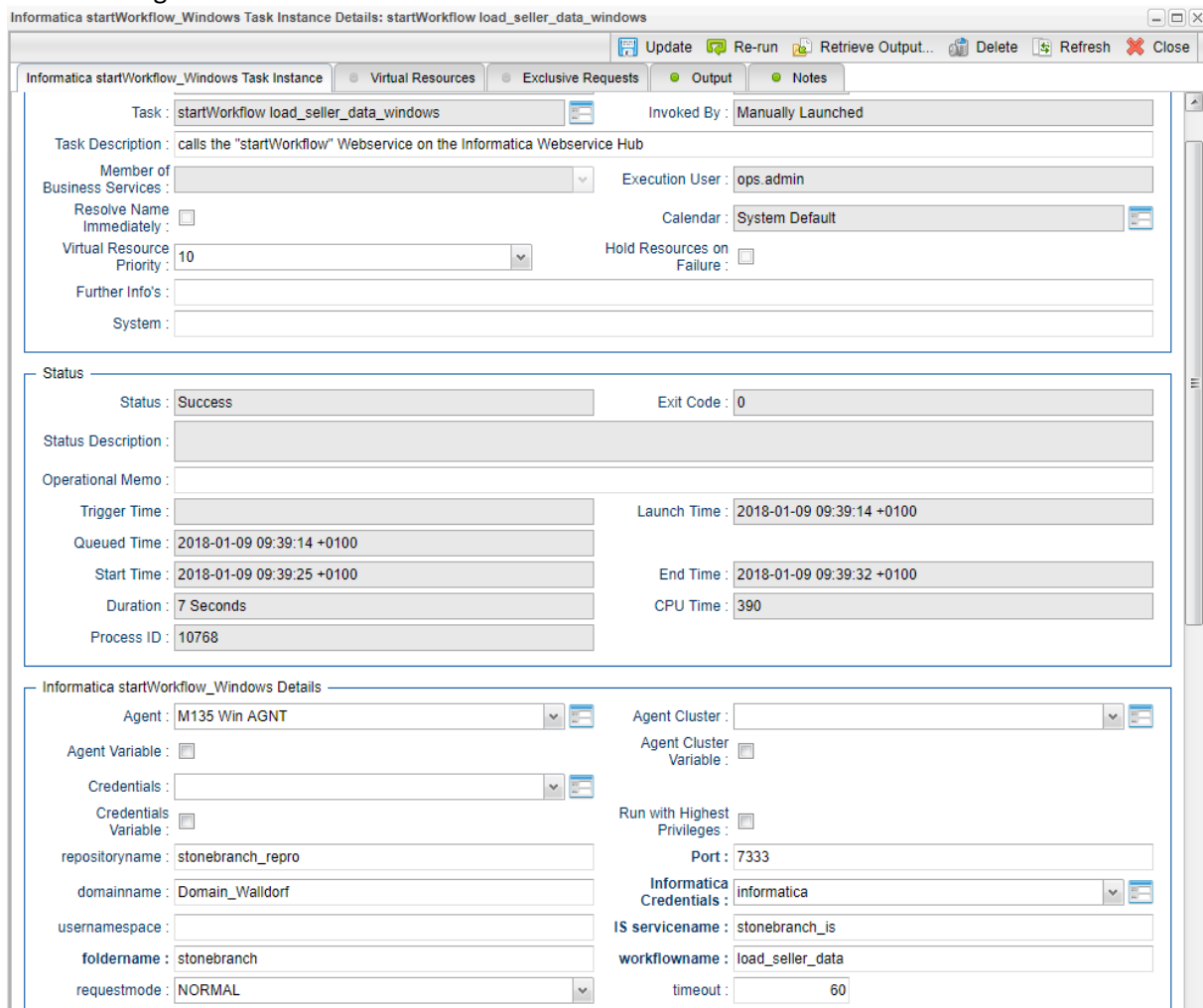
| Severity | Timestamp | Node | Thread | Message Co... | Message |
|----------|---------------------|-------------|--------|---------------|--|
| INFO | 09/01/2018 09:41:52 | node01_WALI | 12292 | LM_36435 | Starting execution of workflow [Load_Seller_Data] in folder [Stonebranch] last saved by user [Administrator]. |
| INFO | 09/01/2018 09:41:52 | node01_WALI | 12292 | LM_44206 | Workflow Load_Seller_Data started with run id [155], run instance name [], run type [Concurrent Run Disabled]. |
| INFO | 09/01/2018 09:41:52 | node01_WALI | 12292 | LM_44195 | Workflow [Load_Seller_Data] service level [SLPriority:5,SLDispatchWaitTime:1800]. |
| INFO | 09/01/2018 09:41:52 | node01_WALI | 12292 | LM_44253 | Workflow started. Clients will be notified. |
| INFO | 09/01/2018 09:41:52 | node01_WALI | 12292 | LM_36330 | Start task instance [Start_Loading_Seller_Data]: Execution started. |
| INFO | 09/01/2018 09:41:52 | node01_WALI | 12292 | LM_36318 | Start task instance [Start_Loading_Seller_Data]: Execution succeeded. |
| INFO | 09/01/2018 09:41:52 | node01_WALI | 12292 | LM_36505 | Link [Start_Loading_Seller_Data -> Load_Seller_Data_from_file]: empty expression |

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 show in the Power Center Workflow Monitor are also available in the Universal Controller Web-Gui in the Task Instance screen and Output.

The following screenshot shows the Task Instance Screen:



Informatica startWorkflow_Windows Task Instance Details: startWorkflow load_seller_data_windows

Task: startWorkflow load_seller_data_windows Invoked By: Manually Launched

Task Description: calls the "startWorkflow" Webservice on the Informatica Webservice Hub

Member of Business Services: [Dropdown]

Execution User: ops.admin

Resolve Name Immediately: ☐

Calendar: System Default

Virtual Resource Priority: 10

Hold Resources on Failure: ☐

Further Info's: [Text Area]

System: [Text Area]

Status

Status: Success Exit Code: 0

Status Description: [Text Area]

Operational Memo: [Text Area]

Trigger Time: [Text Area] Launch Time: 2018-01-09 09:39:14 +0100

Queued Time: 2018-01-09 09:39:14 +0100

Start Time: 2018-01-09 09:39:25 +0100 End Time: 2018-01-09 09:39:32 +0100

Duration: 7 Seconds CPU Time: 390

Process ID: 10768

Informatica startWorkflow_Windows Details

Agent: M135 Win AGNT Agent Cluster: [Dropdown]

Agent Variable: ☐

Agent Cluster Variable: ☐

Credentials: [Dropdown]

Credentials Variable: ☐

Run with Highest Privileges: ☐

Port: 7333

repositoryname: stonebranch_repro

domainname: Domain_Walldorf

Informatica Credentials: informatica

IS servicename: stonebranch_is

username: [Text Area]

foldername: stonebranch

workflowname: load_seller_data

requestmode: NORMAL timeout: 60

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

```

Informatica startWorkflow_Windows Task Instance Details: startWorkflow load_seller_data_windows

Informatica startWorkflow_Windows Task Instance  Virtual Resources  Exclusive Requests  Output  Notes

2 Output

Output

INFO : Tue Jan 09 09:39:16 2018 [LM_44206] : 12300 Workflow Load_Seller_Data started with run id [153], run instance name [], run type [Concurrent Run Disabled]
INFO : Tue Jan 09 09:39:16 2018 [LM_44195] : 12300 Workflow [Load_Seller_Data] service level [SLPriority:5,SLDispatchWaitTime:1800].
INFO : Tue Jan 09 09:39:16 2018 [LM_44253] : 12300 Workflow started. Clients will be notified
INFO : Tue Jan 09 09:39:16 2018 [LM_36330] : 12300 Start task instance [Start_Loading_Seller_Data]: Execution started.
INFO : Tue Jan 09 09:39:16 2018 [LM_36318] : 12300 Start task instance [Start_Loading_Seller_Data]: Execution succeeded.
INFO : Tue Jan 09 09:39:16 2018 [LM_36505] : 12300 Link [Start_Loading_Seller_Data --> Load_Seller_Data_from_file]: empty expression string, evaluated to 1
INFO : Tue Jan 09 09:39:16 2018 [LM_36388] : 12300 Session task instance [Load_Seller_Data_from_file] is waiting to be started.
INFO : Tue Jan 09 09:39:16 2018 [LM_36682] : 12304 Session task instance [Load_Seller_Data_from_file]: started a process with pid [17868] on node [node01_WALL]
INFO : Tue Jan 09 09:39:16 2018 [LM_36330] : 12304 Session task instance [Load_Seller_Data_from_file]: Execution started.
INFO : Tue Jan 09 09:39:17 2018 [LM_36488] : 12308 Session task instance [Load_Seller_Data_from_file] : [TM_6793 Fetching initialization properties from the 1
INFO : Tue Jan 09 09:39:17 2018 [LM_36488] : 12308 Session task instance [Load_Seller_Data_from_file] : [DISP_20305 The [Preparer] DTM with process id [17868]
: (Tue Jan 09 09:39:16 2018)]
INFO : Tue Jan 09 09:39:17 2018 [LM_36488] : 12308 Session task instance [Load_Seller_Data_from_file] : [PETL_24036 Beginning the prepare phase for the sessio
INFO : Tue Jan 09 09:39:17 2018 [LM_36488] : 12308 Session task instance [Load_Seller_Data_from_file] : [TM_6721 Started [Connect to Repository].]
INFO : Tue Jan 09 09:39:17 2018 [LM_36488] : 12308 Session task instance [Load_Seller_Data_from_file] : [TM_6722 Finished [Connect to Repository]. It took [6
INFO : Tue Jan 09 09:39:17 2018 [LM_36488] : 12308 Session task instance [Load_Seller_Data_from_file] : [TM_6794 Connected to repository [stonebranch_repro]
INFO : Tue Jan 09 09:39:17 2018 [LM_36488] : 12308 Session task instance [Load_Seller_Data_from_file] : [TM_6721 Started [Fetch Session from Repository].]
INFO : Tue Jan 09 09:39:17 2018 [LM_36488] : 12308 Session task instance [Load_Seller_Data_from_file] : [TM_6722 Finished [Fetch Session from Repository].]
INFO : Tue Jan 09 09:39:17 2018 [LM_36488] : 12308 Session task instance [Load_Seller_Data_from_file] : [TM_6721 Started [Partition Group Formation].]
INFO : Tue Jan 09 09:39:17 2018 [LM_36488] : 12308 Session task instance [Load_Seller_Data_from_file] : [TM_6722 Finished [Partition Group Formation]. It to
INFO : Tue Jan 09 09:39:17 2018 [LM_36488] : 12308 Session task instance [Load_Seller_Data_from_file] : [PETL_24037 Finished the prepare phase for the sessio
INFO : Tue Jan 09 09:39:17 2018 [LM_36488] : 12308 Session task instance [Load_Seller_Data_from_file] : [TM_6792 Notifying the Integration Service that the pr
INFO : Tue Jan 09 09:39:18 2018 [LM_36318] : 12304 Session task instance [Load_Seller_Data_from_file]: Execution succeeded.

```

6 Test Cases

The following basic test cases has been performed:

| Case# | Assumed behavior | Result |
|---|--|---------|
| Start a Job based on a correct Foldername, Servicename and Workflow | Job should finish with status “succeeded” in PC and “success” in the UC Task Instance. The Task Instance output should contain the same log file as in PC. | Correct |
| Start a Job based on a wrong Foldername | Task should fail with error “500” and message ERROR - Check that the Workflow: [xyz], Foldername: [xyz] and is_servicename: [xyz] are correct | Correct |
| Start a Job based on a wrong Servicename | Task should fail with error “500” and message ERROR - Check that the Workflow: [xyz], Foldername: [xyz] and is_servicename: [xyz] are correct | Correct |
| Start a Job based on a wrong Workflowname | Task should fail with error “500” and message ERROR - Check that the Workflow: [xyz], Foldername: [xyz] and is_servicename: [xyz] are correct | Correct |
| Start a Job on PC providing the wrong server port | Task should fail with error “Http Connection Pool Error 10061” | Correct |
| Start a Job on PC providing the wrong server hostname | Task should fail with error “Failure: HTTPConnectionPool Error 11001” | Correct |
| Start a Job on PC with a blocked firewall | Task should fail with error “Failure: HTTPConnectionPool Error 11001” | Correct |

| | | |
|--|--|---------|
| Start a Job on PC with the wrong user | Task should fail with error “Failure: 500 ..” | Correct |
| Start a Job on PC using http connection, but PC Web Service Hub is setup as https host | Task Failure : ('Connection aborted.', error(111, 'Connection refused')) | Correct |
| Start a Job on PC using https connection (PC Web Service Hub is setup as https host) | Job should finish with status “succeeded” in PC and “success” in the UC Task Instance. The Task Instance output should contain the same log file as in PC. | Correct |

7 Document References

This document references the following documents:

| Ref# | Description |
|--|--|
| [1] PC_961_WebServicesProviderGuide_en | Power Center Webservices Hub description |
| [2] XML extract of Universal Task | UAC XML extract of the Universal Template and Task <ul style="list-style-type: none">ops_credentials_13ae541df9a84a9fa74c4129d65834dfops_task_universal_881d31f5c21b43fdb781591b3d95d8b5ops_unv_tmplt_8a0cbe38cbfc4b5ab38ab51808d6b6e7 |
| [3] UT_Informatica_RunWorkflow_v9 | Python Script which is used in the Universal template |