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Core of Workload Automation



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Documentation

***IBM Workload Scheduler integration
with SAP HANA Cloud Integration
for Data Services***

Written by : Miguel Sanders Uniforce	Date : May 20 2016
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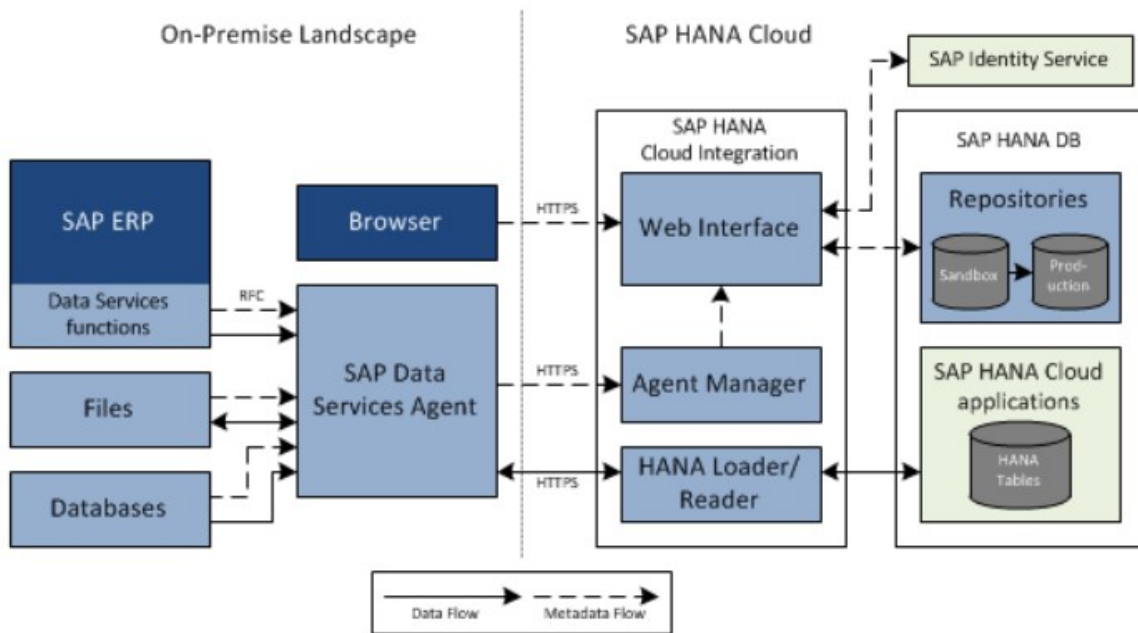


CHANGE HISTORY

Version	Date of change	Change detail
1.0	April 25 2016	Initial version by M. Sanders
1.1	May 20 2016	Added support for WebServicesUser

1. INTRODUCTION AND ARCHITECTURE

SAP HANA Cloud Integration for Data Services allows you to efficiently and securely use ETL (Extract, Transform, Load) tasks to move data between on-premise systems and the SAP HANA Cloud. By leveraging the IBM Workload Scheduler plug-in for SAP HANA Cloud Integration for Data Services (HCIDS), you will be able to expand the scheduling scope of your on-premise systems (both SAP and non-SAP) to the SAP HANA Cloud while maintaining a complete end-to-end view of all processes.



2. INSTALLING AND CONFIGURING THE PLUG-IN FOR SAP HANA CLOUD INTEGRATION FOR DATA SERVICES

The following prerequisites must be met in order to use the IBM Workload Scheduler plug-in for SAP HANA Cloud Integration for Data Services.

- IBM Workload Scheduler 9.1 or later
- IBM Dynamic Workload Console 9.1 or later

To install and configure the IBM Workload Scheduler plug-in for SAP HANA Cloud Integration for Data Services, perform the following steps:

- Copy *com.ibm.scheduling.agent.saphcids_<version>.jar* to the *<TWA_HOME>/TWS/applicationJobPlugIn* folder on either the Master Domain Manager or a Dynamic Domain Manager
- Copy *com.ibm.scheduling.agent.saphcids_<version>.jar* to the *<TWA_HOME>/TWS/JavaExt/eclipse/plugins* folder on the Dynamic Agent that will run the SAP HANA Cloud Integration for Data Services jobs
- Modify *config.ini* located in *<TWA_HOME>/TWS/JavaExt/eclipse/configuration* on the Dynamic Agent that will run the SAP HANA Cloud Integration for Data Services jobs. At the end of the line that starts with "osgi.bundles=", add the following:
"*,com.ibm.scheduling.agent.saphcids@4:start*"
- Restart the WebSphere Application Server of either the Master Domain Manager or the Dynamic Domain Manager.
- Restart the Dynamic Agent
- Restart the Dynamic Workload Console

3. DEFINING A SAP HANA CLOUD INTEGRATION FOR DATA SERVICES JOB

From the Dynamic Workload Console, you can define a SAP HANA Cloud Integration for Data Services job as follows:

- In the Dynamic Workload Console navigation tree, expand *Administration* and select *Manage Workload Definitions*.
- Specify the name of the engine. Subsequently, the Workload Designer is displayed.
- In the Working List panel, select *New -> Job Definition -> Cloud -> SAP HANA Cloud Integration*.
- On the *SAP HANA Cloud Integration for Data Services* panel, fill in the job details
 - **Hostname (*)** : Hostname of the SAP HANA Cloud Integration for Data Services platform. Default value is *hcids.hana.ondemand.com*
 - **Organization (*)** : Organization name (f.e. P0506).
 - **Username (*)** : The SAP ID (e-mail address) linked to the SAP HANA Cloud Integration subscription. For a non-production SAP HANA Cloud Integration environment, the user should have the *Integration Developer* role. For the production SAP HANA Cloud Integration environment, the user should have the *Production Operator* role.

Alternatively, the *WebServicesUser* can also be used (new feature since SAP HANA Cloud Integration 1.0.11).
 - **Password (*)** : The password of the SAP ID linked to the SAP HANA Cloud Integration subscription or the password of the *WebServicesUser*.
 - **Production (*)** : Select whether this is productive a subscription. Leaving this unchecked results in connecting to the SAP HANA Cloud Integration non-production (Sandbox) environment.
 - To validate the connection, click *Test Connection*.
 - **Task name**: Fill in the SAP HANA Cloud Integration for Data Services task name.
 - **Description** : Fill in a description for the SAP HANA Cloud Integration task name.
 - **Agent name (*)** : Fill in the agent name on which the task will run.
 - **Agent group (*)** : Fill in the agent group on which the task will run. Agent name or agent group must be supplied. If both are supplied, the agent name takes precedence over the agent group.
 - **Polling period (*)** : The monitoring frequency determines how often the job is monitored. The default value is 10 seconds.
 - **Timeout (*)**: The monitoring time determines for how long the job is monitored. If the job hasn't finished by the end of the timeout interval, the job is marked as ABEND. The default value is 7200 seconds.

- (*) These parameters can also be supplied in a common properties file *SAPHCIDSJobExecutor.properties* located in `<TWA_HOME>/TWS/JavaExt/cfg` on the Dynamic Agent that will run the SAP HANA Cloud Integration jobs. Values from the job definition (if provided) override the values in the properties file.

Additionally, the following properties are available in the properties file:

- proxyServerType : HTTPS or SOCKS
- proxyServer : Hostname or IP address of the proxy server
- proxyServerPort : Port of the proxy server

SAP HANA CLOUD INTEGRATION FOR DATA SERVICES (9.3.0.02) - HC#HCL_DEMO

Select an Action ▾
🔍
✕
📄
✎
🔒
⊖
↺
🖨
📄
☰

General
Affinity
Recovery Options
SAP HANA Cloud Integration for Data Services

Server Information

Hostname:

Organization:

Username:

Password: ...

Production

Job Details

* Task name:

Description:

Agent name:

Agent group:

Polling period:

Timeout:

Job Parameters

Filter ✕

Name	Value
■ TEST	200

+

Alternatively, the *composer* command line can be used to define the job.

Example:

HCI#HCI_DEMO

TASK

```
<?xml version="1.0" encoding="UTF-8"?>
<jsdsl:jobDefinition xmlns:jsdl="http://www.ibm.com/xmlns/prod/scheduling/1.0/jsdl"
xmlns:jsdlsaphcids="http://www.ibm.com/xmlns/prod/scheduling/1.0/jsdlsaphcids" name="SAPHCIDS">
  <jsdsl:application name="saphcids">
    <jsdlsaphcids:saphcids>
      <jsdlsaphcids:SAPHCIDSParameters>
        <jsdlsaphcids:SAPHCIDSParms>
          <jsdlsaphcids:serverInformation>
            <jsdlsaphcids:hostname>hcids.hana.ondemand.com</jsdlsaphcids:hostname>
            <jsdlsaphcids:organization>P0506</jsdlsaphcids:organization>
            <jsdlsaphcids:username>WebServicesUser</jsdlsaphcids:username>
            <jsdlsaphcids:password>{aes}kTCqhOMHEVpx1wtfeBh2FK+Nd4oebc=</jsdlsaphcids:password>
          </jsdlsaphcids:serverInformation>
          <jsdlsaphcids:jobDetails>
            <jsdlsaphcids:taskname>DEMO</jsdlsaphcids:taskname>
            <jsdlsaphcids:description>Demo job</jsdlsaphcids:description>
            <jsdlsaphcids:agentName>LNX</jsdlsaphcids:agentName>
            <jsdlsaphcids:agentGroup/>
            <jsdlsaphcids:pollingPeriod>10</jsdlsaphcids:pollingPeriod>
            <jsdlsaphcids:pollingTimeout>7200</jsdlsaphcids:pollingTimeout>
          </jsdlsaphcids:jobDetails>
          <jsdlsaphcids:jobParameters>
            <jsdlsaphcids:parametersValues>
              <jsdlsaphcids:parametersValue key="TEST">200</jsdlsaphcids:parametersValue>
            </jsdlsaphcids:parametersValues>
          </jsdlsaphcids:jobParameters>
        </jsdlsaphcids:SAPHCIDSParms>
      </jsdlsaphcids:SAPHCIDSParameters>
    </jsdlsaphcids:saphcids>
  </jsdl:application>
</jsdl:jobDefinition>
DESCRIPTION "Added by composer."
RECOVERY STOP
```




4. MONITORING A SAP HANA CLOUD INTEGRATION FOR DATA SERVICES JOB

Like regular jobs, you can monitor SAP HANA Cloud Integration for Data Services jobs by using either the Dynamic Workload Console or the *conman* command line.

Plan Name: Current Plan

@#@.@HCI_DEMO@

Status	Internal Status	Job	Job Type	Workstation (Job)	Job Stream	Workstation (Job Stream)	
<input checked="" type="checkbox"/>	Successful	SUCC	HCI_DEMO	SAP HANA Cloud Integration	HCI	JOBS	HCI

= Job Number: 354710767
= Tue Apr 26 09:42:28 CEST 2016

```

Trace Log
2016-04-26 07:42:35 (0:0) JOB:Task has been sent to the agent
2016-04-26 07:42:36 (45137:3573040928) JOB:The initial environment locale <eng.us.utf-8> has been coerced to <Unicode (UTF-16)> ().
2016-04-26 07:42:36 (45137:3573040928) JOB:Reading job <DEMO> from the repository; Server version is <14.2.5.1101>; Repository version is <14.2.5.0000>.
2016-04-26 07:42:36 (45137:3573040928) JOB:Current directory of job <DEMO> is </usr/sap/dsod/DataServicesAgent/bin>.
2016-04-26 07:42:36 (45137:3573040928) JOB:Starting job on agent <LNW>.
2016-04-26 07:42:36 (45137:3573040928) JOB:Processing job <DEMO>.
2016-04-26 07:42:36 (45137:3573040928) JOB:Optimizing job <DEMO>.
2016-04-26 07:42:36 (45137:3573040928) JOB:Job <DEMO> is started.
2016-04-26 07:42:37 (45149:2290497312) DATAFLOW:Process to execute data flow <DEMO_EMPLOYEES> is started.
2016-04-26 07:42:37 (45149:2290497312) JOB:Initializing transcoder for datastore <FORMAT> to transcode between engine codepage<Unicode (UTF-16)> and datastore codepage <<DEFAULT>>.
2016-04-26 07:42:37 (45149:2290497312) JOB:Initializing transcoder for datastore <DB2> to transcode between engine codepage<Unicode (UTF-16)> and datastore codepage <<DEFAULT>>.
2016-04-26 07:42:37 (45149:2290497312) DATAFLOW:Data flow <DEMO_EMPLOYEES> is started.
2016-04-26 07:42:37 (45149:2290497312) DATAFLOW:Cache statistics determined that data flow <DEMO_EMPLOYEES> uses 0 caches with a total size of 0 bytes, which is less than (or equal to) 3757047808 bytes available for caches in virtual memory. Data flow will use IN MEMORY cache type.
2016-04-26 07:42:37 (45149:2290497312) DATAFLOW:Data flow <DEMO_EMPLOYEES> using IN MEMORY Cache.
2016-04-26 07:42:39 (45149:2290497312) DATAFLOW:Data flow <DEMO_EMPLOYEES> is completed successfully.
2016-04-26 07:42:39 (45149:2290497312) DATAFLOW:Process to execute data flow <DEMO_EMPLOYEES> is completed.
2016-04-26 07:42:40 (45137:3573040928) JOB:Job <DEMO> is completed successfully.

```

Monitor Log

Path Name	State	Row Count	Elapsed time (Sec)	Absolute time (Sec)
+DEMO_EMPLOYEES/Target_Query	STOP	5	0.001	3.724
-DEMO_EMPLOYEES/Target_Query_EMPLOYEES	STOP	5	0.632	3.73

Error Log

```

=====
= Exit Status : 0
= Elapsed Time (hh:mm:ss) : 00:00:20
= Tue Apr 26 09:42:48 CEST 2016
=====

```