PUBLIC

Troubleshooting connection issues for Data Provisioning Agent with SAP Data Warehouse Cloud

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OVERVIEW

To be able to access data from systems in your local landscape in SAP Data Warehouse Cloud, you will need to set-up a Data Provisioning Agent (DP Agent) in your local environment. The DP Agent functions as a gateway to SAP Data Warehouse Cloud.

On the SAP Help Portal, you can find more information on how to set up and configure the connection between the DP Agent and SAP Data Warehouse Cloud

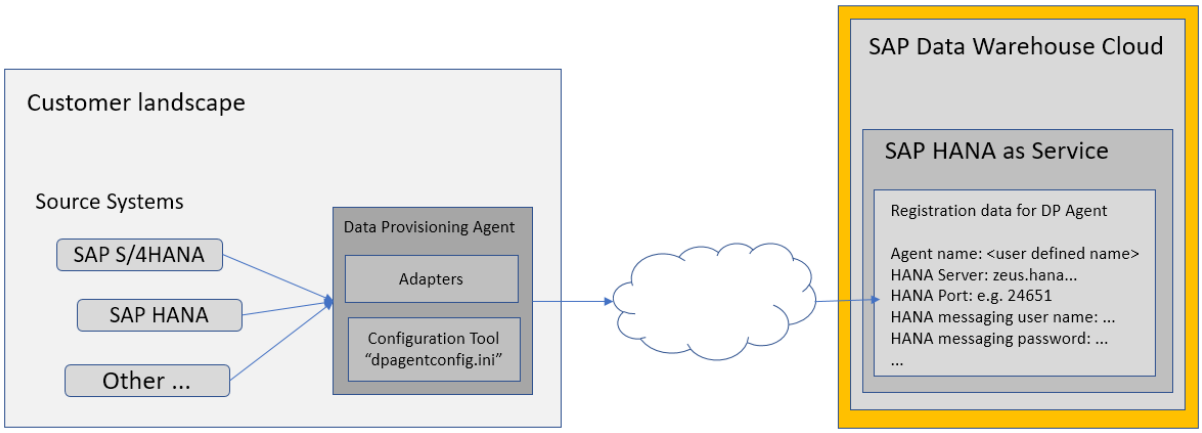
Click here

SAP Data Warehouse Cloud provides the connection information for a registering DP agent, which needs to be maintained

- for general connection information (host, port, proxy etc.) in the *<DPAgent_root>/dpagentconfig.ini* file for your local DP agent installation
- for user name and password in the securestore section

For a successful connection you will need to make sure that outbound connections from the DP Agent to the target host/port provided in the DP Agent registration information are not blocked by your firewall.

Please make sure to always have the latest version of the DP Agent available installed.



CHECKING PREREQUISITES

This guide assumes the installation of the Data Provisioning Agent on a Linux system.

In case your installation is on a Microsoft Windows system the forward slashes "/" must be replaced by backslashes "\"

Java Installation

Check whether a Java installation is available by running java -version. In case you get a response like *java: command not found*, you can use the Java installation which is part of the Data Provisioning Agent installation. The Java executable is in folder <DP Agent Root>/sapjvm/bin.

```
:/usr/sap/dataprovagent/sapjvm/bin> ls
forkhelper  jjs     jvmmond  keytool  pack200     rmid          servertool  unpack200
java        jvmmon  jvmprof  orbd     policytool  rmiregistry   tnameserv
```

Data Warehouse Cloud IP Address

In case you're having issues with the JDBC driver being unable to connect to the Data Warehouse Cloud tenant using the HANA server URL zeus.*…*.ondemand.com, you can also connect using the tenant's IP (see below). Simply ping the URL, which is provided in the Data Warehouse Cloud to get the right IP.

This should be regarded as a workaround only, as the IP address of SAP Data Warehouse Cloud tenant can change.

```
:~> ping zeus.hana.prod.eu-central-1.whitney.dbaas.ondemand.com
PING zeus.hana.prod.eu-central-1.whitney.dbaas.ondemand.com (18.196.126.43) 56(84) bytes of data.
64 bytes from ec2-18-196-126-43.eu-central-1.compute.amazonaws.com (18.196.126.43): icmp_seq=1 ttl=42 time=8.54 ms
64 bytes from ec2-18-196-126-43.eu-central-1.compute.amazonaws.com (18.196.126.43): icmp_seq=2 ttl=42 time=8.56 ms
64 bytes from ec2-18-196-126-43.eu-central-1.compute.amazonaws.com (18.196.126.43): icmp_seq=3 ttl=42 time=8.66 ms
64 bytes from ec2-18-196-126-43.eu-central-1.compute.amazonaws.com (18.196.126.43): icmp_seq=4 ttl=42 time=8.62 ms
^C
```

DP Agent Configuration

Please make sure you have maintained the correct values in the *<DPAgent_root>/* file in your DP Agent installation.

These are the relevant parameters which need to be maintained. All other parameters can be left with their default values.

dpagentconfig.ini file	**Agent Settings in SAP Datawarehouse Cloud**
`agent.name=`*<Agent Name>*	Agent Name (user defined)
`hana.port=`*<HANA Port>*	HANA Port
`hana.onCloud=false`	n/a
`hana.useSSL=true`	HANA Use SSL
`hana.server=`*<HANA Server>*	HANA Server
`jdbc.enabled=true`	HANA via JDBC
`jdbc.host=`*<HANA Server>*	HANA Server
`jdbc.port=`*<HANA Port>*	HANA Port
`jdbc.encrypt=true`	n/a

If you use a proxy server in your company landscape, please make sure these parameters are maintained as well:

dpagentconfig.ini file
`proxyHost=`< your Proxy host>
`proxyPort=`< your Proxy port>
`proxyType=`http
`jdbc.proxyHost=`< your Proxy host>
`jdbc.proxyPort=`<your Proxy Port>
`jdbc.useProxy=`true

LOGS AND TRACES

For successfully troubleshooting connection issues you can enable logging and jdbc tracing for the DP Agent.

DP Agent Log Configuration

Ensure to set the log levels in the *.ini file correctly.

Check the following notes for details on the log levels for the DP agent:

https://launchpad.support.sap.com/#/notes/0002496051
https://launchpad.support.sap.com/#/notes/0002461391

The parameters for the log level in the *<DPAgent_root>/dpagentconfig.ini* file are

framework.log.level
service.log.level

Possible values are:

- TRACE
- DEBUG
- ERROR
- ALL

Please make sure you restart the Data Provisioning Agent after changing the log level.

Please note that the DEBUG setting will generate a lot of data, so set this for a short period of time while you are actively debugging the workings of the DP agent and set it to a lower information level after.

JDBC Tracing

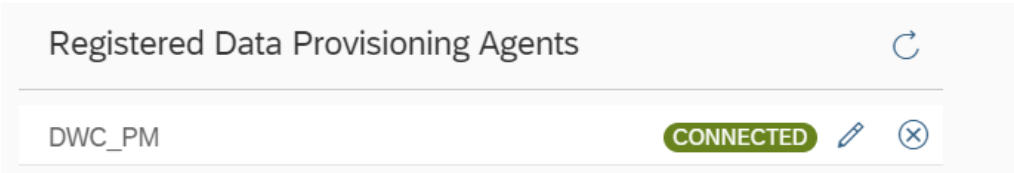
See this page on the SAP Help portal:
https://help.sap.com/viewer/52715f71adba4aaeb480d946c742d1f6/2.0.00/en-US/f2bbb7fb4e1247f29e325f8b29226d16.html

You need to execute the JDBC driver *.jar file from the <DP Agent root>/plugins folder in order to set the trace level.

VALIDATING THE CONNECTION FROM DP AGENT TO DATA WAREHOUSE CLOUD

Via trace file

Check the DP agent framework trace file in the *<DP Agent root>/log* folder. If the file contains the following entries the connection could be successful established, and you will see a green Connected icon in the Data Warehouse Cloud tenant for the DP agent connection.



2019-08-20 15:14:38,326 [INFO] DPFramework | JDBCService.start [] - Starting JDBC service.
2019-08-20 15:14:38,326 [TRACE] DPFramework | JDBCConnector.read [] - Fetching messages...
2019-08-20 15:14:38,326 [INFO] DPFramework | JDBCConnector.registerAgent [] - Registering Agent: 78:69:REGISTER_AGENT:SDA:0:PAG_DPA12:null:null:null:0:0:REGISTER_AGENT:
2019-08-20 15:14:38,326 [DEBUG] DPFramework | JDBCConnector.writeMessage [] - >>78:69:REGISTER_AGENT:SDA:0:PAG_DPA12:null:null:null:0:0:REGISTER_AGENT:
2019-08-20 15:14:38,904 [DEBUG] DPFramework | JDBCConnector.makeConnection [] - JDBC connection (1) created.
2019-08-20 15:14:38,998 [DEBUG] DPFramework | JDBCConnector.writeMessage [] - <<118:69:SUCCESS_MSG:SDA:28358:PAG_DPA12::::0:0:REGISTER_AGENT:
2019-08-20 15:14:38,998 [INFO] DPFramework | JDBCConnector.registerAgent [] - Registration complete.
2019-08-20 15:14:38,998 [INFO] DPFramework | JDBCConnector.registerAgent [] - Server Protocol: SUPPORTS_2SP02_04_PROTOCOL
2019-08-20 15:14:38,998 [TRACE] DPFramework | JDBCConnector.getRegistrationToken [] - Token = 0000c134-f010-92f9-0000-000000000026
2019-08-20 15:14:38,998 [DEBUG] DPFramework | JDBCConnector.writeMessage [] - >>106:105:GET_AGENT_MSG:SDA:0:PAG_DPA12:null:null:0000c134-f010-92f9-0000-000000000026:0:0:GET_AGENT_MSG:
2019-08-20 15:14:39,373 [DEBUG] DPFramework | JDBCConnector.makeConnection [] - JDBC connection (2) created.

Via Command Line

To validate the connection from the server the DP Agent is running to the DWC tenant you can directly use the jdbc driver jar file from the command line interface (CLI). You must ensure that you're using the same JDBC driver which is also used by the DP Agent. The JDBC driver is in *<DP Agent Root>/plugins* and called something like com.sap.db.jdbc_<version number>.jar

Please make sure the jdbc <version number> is => 2.4.56…

The pattern for the command line is:

java -jar <JDBC driver> -u <HANA User Name for Messaging Agent>,<HANA User Password for Messaging Agent> -n <HANA Server>:<Port> -o encrypt=true

In case you're using a proxy, add the following parameters:

-o proxyHostname=<Proxy Host> -o proxyPort=<Proxy Port> -o proxyHttp=true

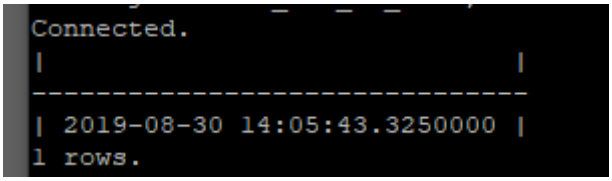
Being in the *<DP Agent root>/plugins* folder an example without proxy looks like this:

../sapjvm/bin/java -jar com.sap.db.jdbc_2.4.63.956d351aa013aa9647b14219e56abec2298beb20.jar -u someUser,somePassword -n zeus.hana.prod.eu-central-1.whitney.dbaas.ondemand.com:12345 -o encrypt=true

With proxy:

../sapjvm/bin/java -jar com.sap.db.jdbc_2.4.63.956d351aa013aa9647b14219e56abec2298beb20.jar -u someUser,somePassword -n zeus.hana.prod.eu-central-1.whitney.dbaas.ondemand.com:12345 **-o proxyHostname=myproxy.org -o proxyPort=9876 -o proxyHttp=true** -o encrypt=true

If the connection works properly the statement should look like this:



COMMON PITFALLS

If you're unable to connect your DP Agent to the SAP Data Warehouse Cloud tenant check the framework log files in <DP Agent root>/log.
Open the trace file and check whether the output matches any of the below mentioned known issues.

You may first try any of the beforementioned CLI options to validate the connection.

Authentication failed
Log:

2019-08-20 14:51:03,508 [INFO] DPFramework | JDBCService.start [] - Starting JDBC service.
2019-08-20 14:51:03,508 [TRACE] DPFramework | JDBCConnector.read [] - Fetching messages...
2019-08-20 14:51:03,508 [INFO] DPFramework | JDBCConnector.registerAgent [] - Registering Agent: 78:69:REGISTER_AGENT:SDA:0:PAG_DPA11:null:null:null:0:0:REGISTER_AGENT:
2019-08-20 14:51:03,508 [DEBUG] DPFramework | JDBCConnector.writeMessage [] - >>78:69:REGISTER_AGENT:SDA:0:PAG_DPA11:null:null:null:0:0:REGISTER_AGENT:
2019-08-20 14:51:04,179 [ERROR] DPFramework | JDBCConnector.makeConnection [] - Failed to connect to server (1 of 10 attempts).
2019-08-20 14:51:04,179 [ERROR] DPFramework | JDBCConnector.makeConnection [] - com.sap.db.jdbc.exceptions.SQLInvalidAuthorizationSpecExceptionSapDB: [10]: authentication failed
2019-08-20 14:51:04,179 [INFO] DPFramework | JDBCConnector.makeConnection [] - Waiting for 30s to retry connection.

Failed authentication is due to an invalid user name / password stored in the *<DP Agent root>secure_storage* file.
It's best to

1. Rename the existing file, i.e. to secure_storage_archive
2. Set the HANA XS Username and password again using the –setSecureProperty option. This creates a new <DP Agent root>/secure_storage file.
3. Retry the connection.

Cannot connect to jdbc:sap://<Host>:<Port> [Unknown host <Host>/<Port> [<Proxy>], -709].
Log:

2019-08-20 14:08:41,433 [INFO] DPFramework | JDBCService.start [] - Starting JDBC service.
2019-08-20 14:08:41,433 [TRACE] DPFramework | JDBCConnector.read [] - Fetching messages...
2019-08-20 14:08:41,433 [INFO] DPFramework | JDBCConnector.registerAgent [] - Registering Agent: 77:68:REGISTER_AGENT:SDA:0:PAG_DPA9:null:null:null:0:0:REGISTER_AGENT:
2019-08-20 14:08:41,433 [DEBUG] DPFramework | JDBCConnector.writeMessage [] - >>77:68:REGISTER_AGENT:SDA:0:PAG_DPA9:null:null:null:0:0:REGISTER_AGENT:
2019-08-20 14:08:43,792 [ERROR] DPFramework | JDBCConnector.makeConnection [] - Failed to connect to server (1 of 10 attempts).

2019-08-20 14:08:43,792 [ERROR] DPFramework | JDBCConnector.makeConnection [] - com.sap.db.jdbc.exceptions.JDBCDriverException: SAP DBTech JDBC: Cannot connect to jdbc:sap://<Host>:<Port> [Unknown host <Host>:<Port> [<Proxy>], -709].
2019-08-20 14:08:43,792 [INFO] DPFramework | JDBCConnector.makeConnection [] - Waiting for 30s to retry connection.

If you encounter this issue, the JDBC driver is not capable of resolving the HANA server URL to connect to the DWC tenant.

In this case you require the IP (see before) and need to make changes to the server's hosts file. On a Windows machine the file is located at C:/Windows/System23/drivers/etc.

Edit the file and add the following information:

<IP> <HANA Server URL>

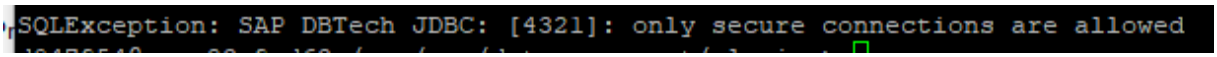
An example (for both scenarios) looks like this:

18.196.126.43 zeus.hana.prod.eu-central-1.whitney.dbaas.ondemand.com

This should be regarded as a workaround only, as the IP address of SAP Data Warehouse Cloud tenant can change.

Missing encryption

Check log output for missing encryption: -> only secure connections are allowed



When testing the connectivity directly with the jdbc driver, add the parameter

-o encrypt=true

SAP Notes for Data Provisioning Agent

2511196 - What ports are used by Smart Data Integration

2091095 - SAP HANA Smart Data Integration and SAP HANA Smart Data Quality

2400022 - FAQ: SAP HANA Smart Data Integration (SDI)

2477204 - FAQ: SAP HANA Services and Ports

Support Component for SDI HAN-DP-SD

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