This article demonstrates an example following the instructions on Qlik help site
https://help.qlik.com/en-
US/sense/February2018/Subsystems/PlanningQlikSenseDeployments/Content/Deployment/Configuring
-SSO-for-MSSQL.htm

Environment settings in this example:

- Qlik Sense February 2018, single node. Server name: *QlikServer1.domain.local*
- SQL Server Express 11. Server name: *QlikServer3.domain.local*
- Qlik Sense service account: **domain\qvservice**
- SQL Server service account: **domain\srv3_sqlserver**
- SSO test user in Qlik Sense: **domain\user1 (**or **user1@domain.local)**

Step 1 - Creating service principal names (SPN) in Active Directory

1.1. Open Windows Command line as an Domain Administrator. Execute the following commands:
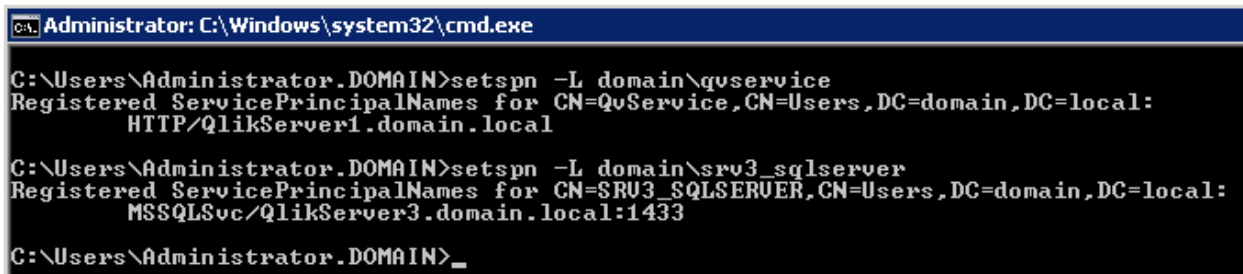
```
setspn –A HTTP/QlikServer1.domain.local domain\qvservice

setspn –A MSSQLSvc/QlikServer3.domain.local:1433
domain\srv3_sqlserver
```

Notes:

- There is no need to provide port for SPN of Qlik Sense service account
- This example uses the default listening port of SQL Server (1433).

1.2. Verify SPN setup with the following commands:

```
setspn –L domain\qvservice

setspn –L domain\srv3_sqlserver
```


## Step 2 - Configuring delegation for the Qlik Sense services administrator account

2.1. Log on to the Domain Controller as a Windows domain administrator. Open *Active Directory Users and Computers*

2.2. Select Qlik Sense service account *(domain\qvservice* in this example) > *Delegation* tab > select *Trust this user for delegation to specified services only* > select *Use any authentication protocol.*

2.3. Click Add....> Users or Computers**...**. > Enter the MS SQL Server service (domain\srv3_sqlserver in this example) > OK
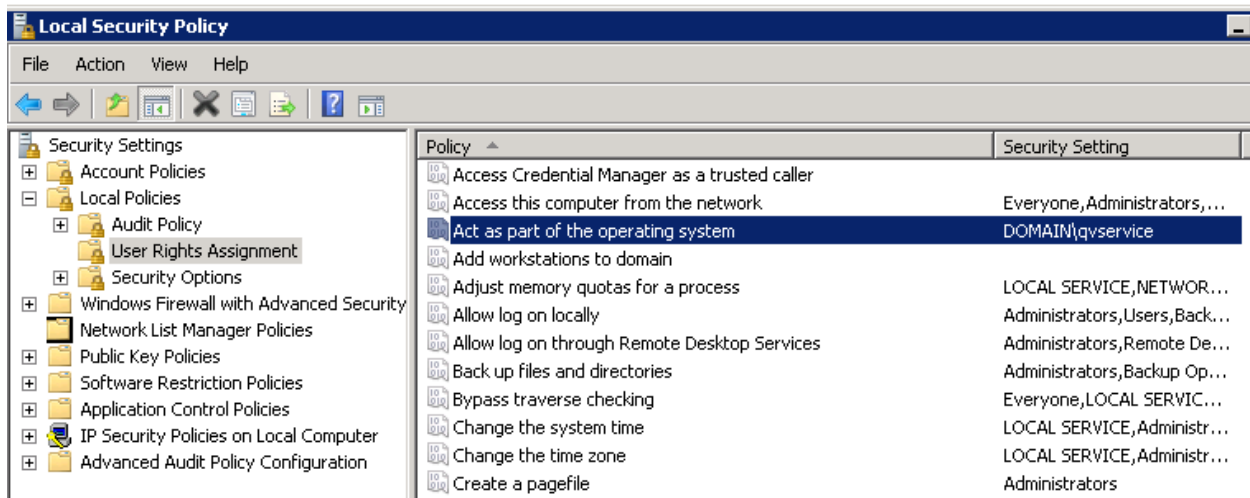
2.4. On the Add Services window, select the MS SQL Server service and click OK.

Delegation set up should look like the following
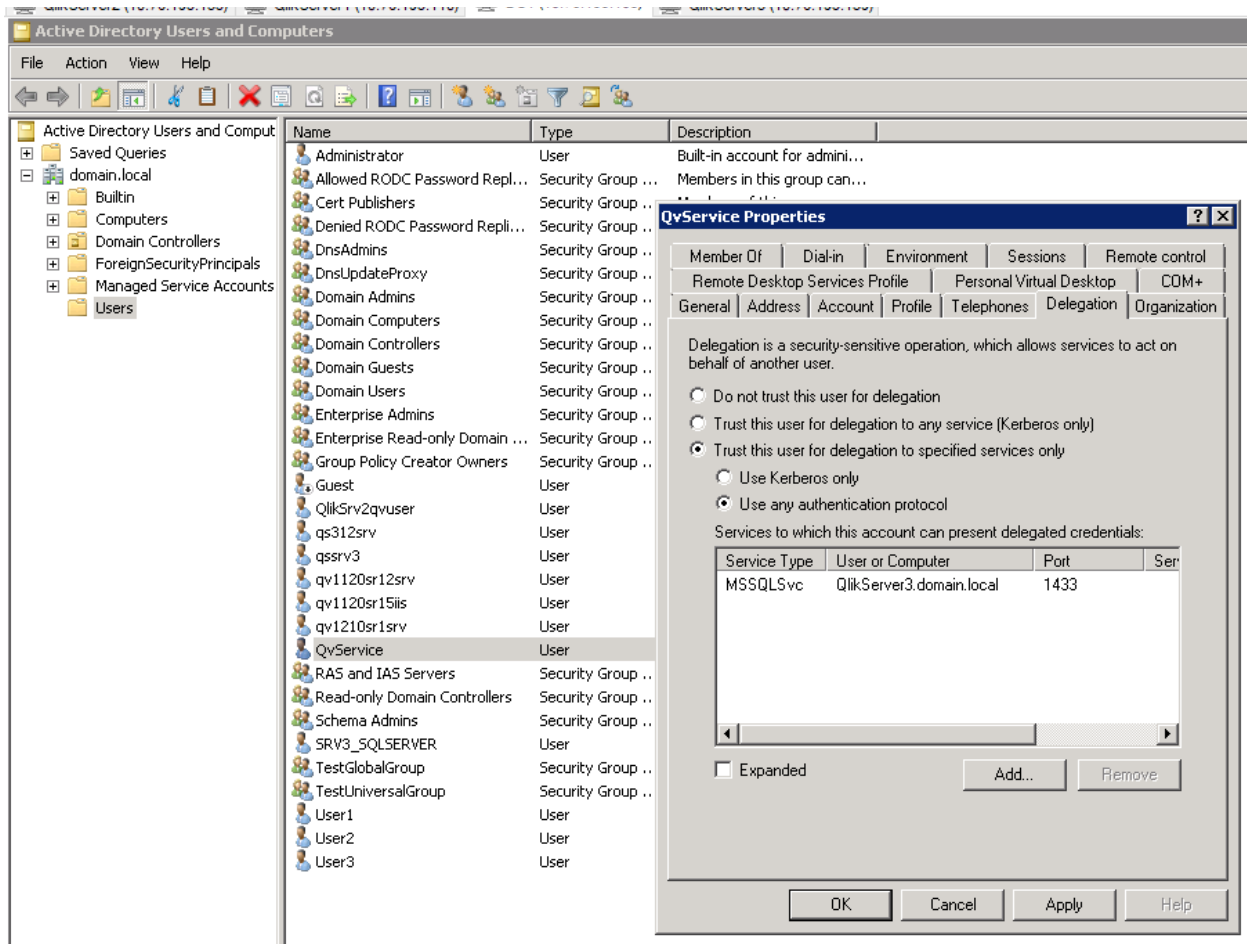
Step 3 - Configuring the Qlik Sense server for SSO

3.1. Add Qlik Sense services administrator as part of the *Act as part of the operating system role* in *Local Security Policy.*
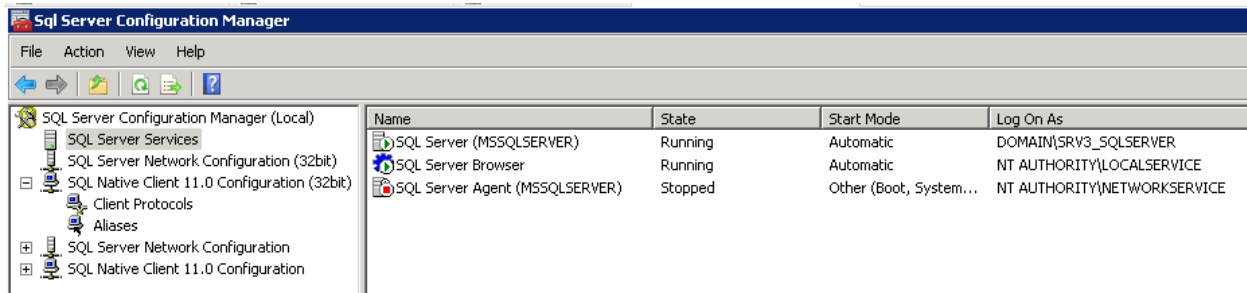

3.2. Add **SSOExternalId=1** to configuration file Setting.ini of Qlik Sense Engine service:
- Stop Qlik Sense Engine service
- Open C:\ProgramData\Qlik\Sense\Engine\Settings.ini

- Add *SSOExternalId=1* under *[Settings 7]*. Save the file.
- Start the Engine service
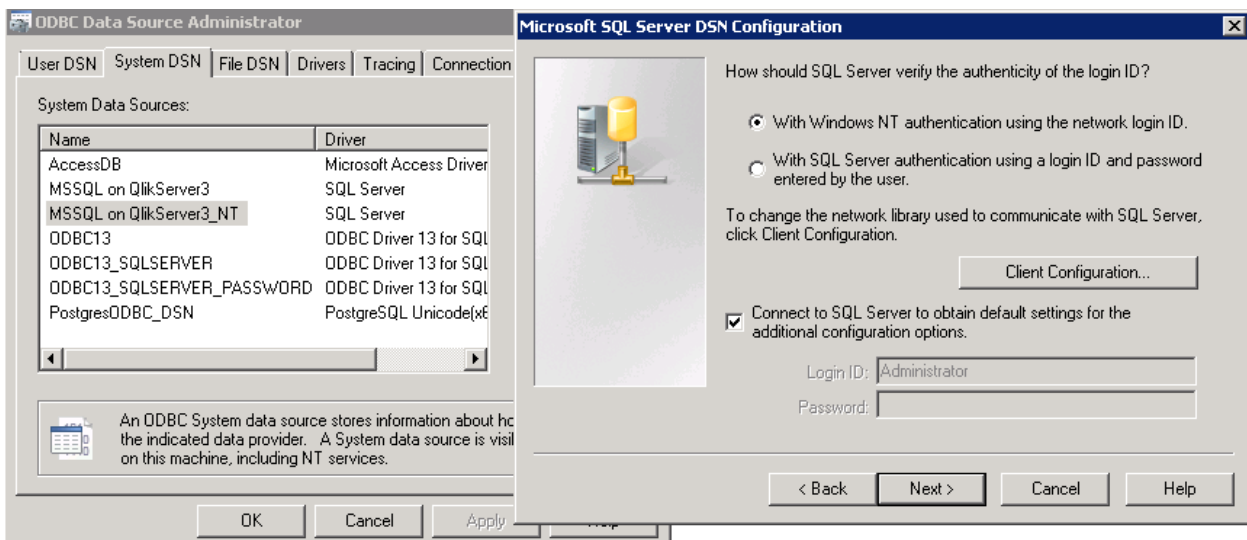
Step 4 - Configuring MS SQL Server

4.1. Ensure that the MS SQL Server service runs as the MS SQL Server services administrator

4.2. Reboot the SQL Server (and Qlik Sense server if possible) for the SPN changes to be registered.

Step 5 - Configuring the ODBC DSN

5.1. Set up an ODBC DSN with Microsoft SQL Server ODBC Driver. Make sure the DSN authentication is configured as *"With Windows NT authentication using the network login ID"*

Notes:
- SSO feature can be used with *SQL Server Native Client* and *ODBC Driver 13* (https://www.microsoft.com/en-us/download/details.aspx?id=50420)
- However, for certain environments, SSO does not work with *ODBC Driver 13.* This issue is still under investigation by R&D

Step 6 - Configuring the ODBC connection in Qlik Sense

6.1. Create a generic ODBC connection using the DSN created in step 5. Note that option "Single Sign-on" does not exist when creating the connection

6.2. Open the newly created connection. Option "Single Sign-on" is now available. Check this option and save the connection

Notes: SSO is only available for domain users that have a User Principal Name (UPN). Verify this by opening *Active Directory Users and Computers* in the Domain Controller > Right click user > Properties > Account. Make sure the user has a valid user logon name (in this case User1@domain.local)
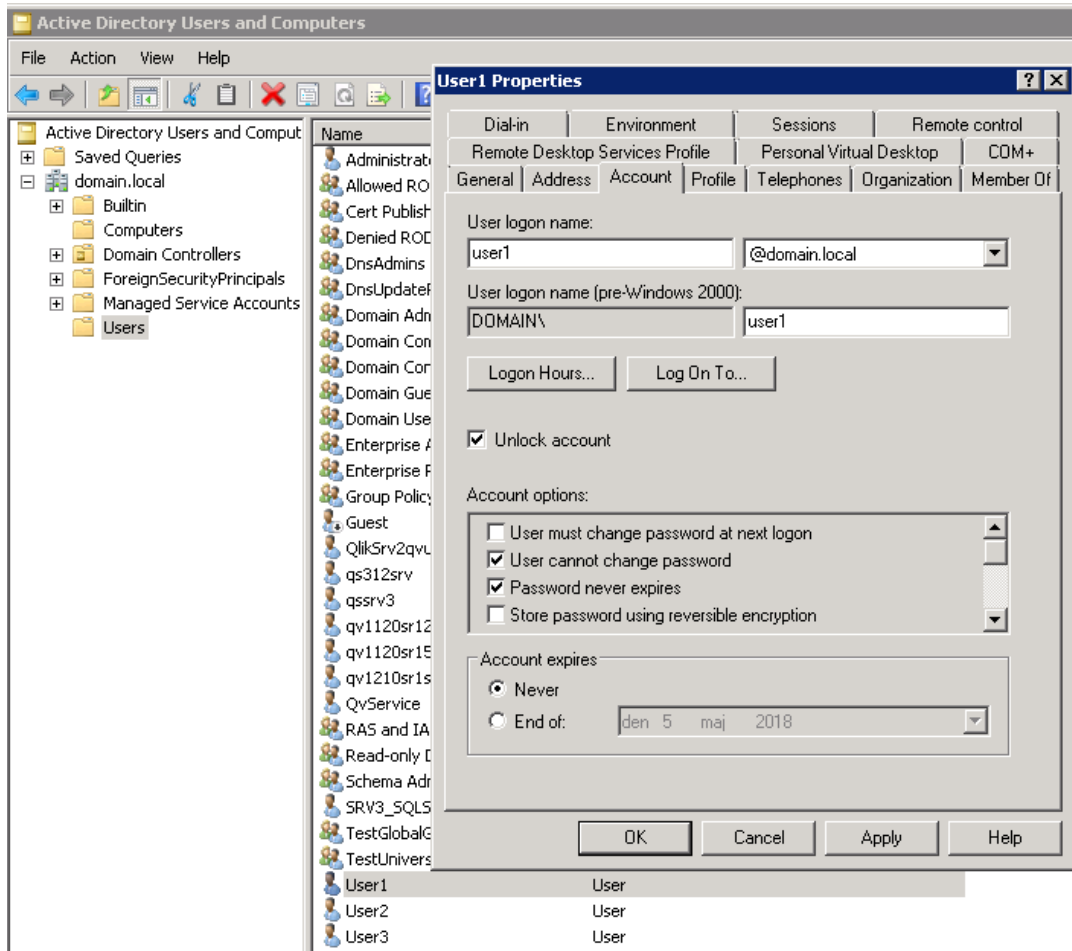
Step 7 – Test Single Sign-On

7.1. Insert the ODBC connection created in step 6

7.2. Use the following load statement in the script:
```
CurrentUser:
SELECT SUSER_NAME() as USR;
```

7.3. Reload the application. Preview the loaded table in Data Model viewer (or insert the table to a sheet). Verify that the table shows the current Qlik Sense user instead of the service account.

```
22    LIB CONNECT TO 'MSSQL on QlikServer3_NT (domain_user1)';
23
24    CurrentUser:
25    SELECT SUSER_NAME() as USR;
26
```


CurrentUser	Preview of data
	USR
Rows	1	
Fields	1	DOMAIN\user1
Keys	0	
Tags	$ascii $text	