



open**IMIS**

openIMIS installation and user manual

openIMIS team

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v1.3.0

The open Insurance Management Information System (openIMIS) is a web based software to manage health insurance schemes. It includes functionality for setup of the software to requirements of health insurance schemes, administration of policies and policy holders and for claim processing. This manual is a guide on the use and functionality of the software rather than in-depth technical reference. The Contents section, provide a reference to the page of each major chapter and the sub chapters within. By clicking on the content title (online version), the reader is re-directed to the position of the content title.

Welcome to the openIMIS technical documentation repository.

CHAPTER 1

Minimum requirements

v1.3.0 and later

- Windows Server 2012 R2
- 4 CPUs
- 8GB RAM
- 300GB Hard drive
- Administrator privileges

v1.3.0

2.1 Install SQL Server

Note: This installation guide is based on SQL Server 2017.

Download the desired version of SQL Server (for example, the Express version from <https://www.microsoft.com/en-us/sql-server/sql-server-downloads>).

When the installation wizard opens, select the manual configuration option in order to fine tune the installation process.

On the Features selection:

- In Shared Feature section, select SQL Client Connectivity SDK
- For installations with Data Warehouse, select Analysis Services, Reporting Services and Integration Services (not available for the Express edition)

On the Instance configuration, the default name (SQLEXPRESS) can be used, unless it is already used by another instance.

On Database engine configuration, select Mixed Mode (SQL Server authentication and Windows authentication) in Authentication Mode.

Continue the setup process until the installation is complete.

2.2 Configure SQL Server

Open the SQL Server Configuration Manager

- On the left panel, select SQL Server Network Configuration → Protocols for SQLEXPRESS (or the name of your SQL Server instance) → Enable Named Pipes and TCP/IP
- Select SQL Server Services → right click on SQL server (instance name) and select Restart

2.3 Initialise openIMIS database

To facilitate the setting up of the openIMIS database, it is suggested to install [SQL Server Management Studio](#) (SSMS). The following procedure is based on SSMS, but you can use the standard SQL Server prompt to proceed with the setup.

First, download the openIMIS database SQL files and migration scripts from Github repository (the source code ZIP file).

In SQL Server Management Studio:

- Create a new database for the openIMIS instance (i.e. openIMIS.X.Y.Z where X.Y.Z is the openIMIS database version).
- Execute the initial database creation script provided in the release sources (from the **Empty databases** folder).

Choose the database to restore based on your context. There are 3 types of databases (structurally identical, but they are pre-configured differently):

- Online: this is the default choice when deploying a central online server
- Offline: this mode is sometime used for remote insurance offices without connectivity. Note: the synchronisation of data with the central server is manual.
- Offline HF: this database can be used in remote health facilities without connectivity. Note: the synchronisation of data with the central server is manual.

If you prefer to initialize the database using the shell:

Be careful to adapt the queries to your setup, in the command lines example those assumptions were made:

- Online database is to be initialized
- The database is called IMIS_DATABASENAME
- The SQL server is called SQL_Server_Name

```
1 SqlCmd -E -Q "CREATE DATABASE IMIS_DATABASENAME"
2 SqlCmd -E -S SQL_Server_Name -d IMIS_DATABASENAME -i
  X:\PathToSQLFile\openIMIS_ONLINE.sql
```

Create a dedicated user with full privilege on the openIMIS database only:

- In the Security → Logins → right click and select “New Login...”
- In General page:
 - Give a login name (i.e. ImisUser)
 - Select SQL Server authentication and provide a password
 - Unselect Enforce password expiration
 - Change default database to openIMIS
- In User Mapping page:
 - Map IMIS db to ImisUser user
 - Give the role of db_owner

2.4 Upgrade the openIMIS database

Before updating the database make sure the database is not reachable (off line) for the applications (web, mobile,...).

If you want to update a production instance:

- Please duplicate the database (create a full backup of the database)
- Execute the steps below on the copy of the database
- If the migration script succeeded on the copy, then you can apply the migration script to the production instance.

This approach will prevent impacting the production if the migration script failed because of customizations in your openIMIS instance and it will give you an idea of the time required to update the database.

If an existing openIMIS database exists already, follow the next steps to upgrade it to the desired version:

- Do a backup of the database

Use the backup tools available in SQL Server Management Studio

or run this command in a shell

Becareful to addapt the queries to your setup, in the command lines example those assumptions were made:

- The database is called `IMIS_DATABASENAME`
- The SQL server is called `SQL_Server_Name`

```
1 SqlCmd -E -S SQL_Server_Name -Q "BACKUP DATABASE [IMIS_DATABASENAME] TO ↵
↵DISK='X:PathToBackupLocation\[Name_of_Database].bak'"
```

- Download the openIMIS database SQL files and migration scripts from [Github repository](#) (the source code ZIP file).
- In SQL Server Management Studio, run the migration script on the openIMIS database or using the shell:

```
1 SqlCmd -E -S SQL_Server_Name -d IMIS_DATABASENAME -i
↵"X:\PathToMigrationScript\openIMIS migration v1.3.0 - v1.3.0.sql"
```

Web application installation guide

v1.3.0 and later

3.1 Install IIS

Follow these steps to install IIS:

- In the Server manager → Dashboard → Add Roles and Features
- Select Role-based or feature-based installation
- Select your server from the server pool, and select your server from the list
- In Server Roles → select Web Server (IIS) → Add Features
- In Features
 - Select .NET Framework 3.5
 - Select .NET Framework 4.6 and ASP.NET 4.6
- In Web Server Role (IIS) → Role Services
 - In Web Server, ensure that Common HTTP Features → Static Content is ticked
 - In Application Development, select .NET Extensibility, ASP, ASP.NET, ISAPI Extensions, ISAPI Filters and Websocket Protocol
 - Management tools → Tick all boxes
- Click on Install and wait for the features to be installed.
- Restart the server if required

3.2 Copy openMIS Web Application

Download and unzip the release from Github web_app_vb repository (https://github.com/openimis/web_app_vb/releases/latest) into a new folder under the IIS wwwroot (For example C:\inetpub\wwwroot\openMIS).

3.3 Configure IIS

The configuration of IIS done through Internet Information Service (IIS) Manager.

3.3.1 Add a site

In Internet Information Service (IIS) manager:

- Select your server name → Sites
- Remove the Default Web Site (if new installation)
- Right click on Sites → Add Website
- Enter a site name for your openIMIS instance (i.e. openIMIS.X.Y.Z)
- Enter or select the physical path name: C:\inetpub\wwwroot\openIMIS (unless you have installed IIS somewhere else)
- If you have a SSL certificate, select binding type to HTTPS (port 443) and select your certificate, if not select binding type to HTTP (port 80)

If you have selected the binding type to HTTPS (port 443), then you will have to add also the binding type for HTTP:

- Right click on the new added website
- Select Edit Bindings
- Select binding type http (port 80) and click ok

3.3.2 Globalisation

Depending on the server's initial configuration, the date format may differ from the expected DD/mm/YYYY. To force the date format, go to the openIMIS site, then select .NET Globalisation Under Culture, and select English (United Kingdom) (en-GB) as a culture.

3.4 Configure openIMIS Web Application

3.4.1 Edit the web.config

The web.config provides the configuration for openIMIS Web Application, including database connection string and necessary folders.

To configure the database connection string, go in openIMIS root folder (usually C:\inetpub\wwwroot\openIMIS), locate the web.config file and edit "IMISConnectionString", so that the connection string points to the database created in openIMIS database section with the right credentials. For example:

```

1      <connectionStrings>
2          <add name="IMISConnectionString" connectionString="Data Source=WIN-
↪H4E4ARREBFH\SQLEXPRESS;Initial Catalog=IMIS;User ID=ImisUser;Password=password1234
↪" providerName="System.Data.SqlClient" />
3      </connectionStrings>

```

Other configuration settings can be found within the appSettings tag and should be modified with caution.

3.4.2 Assign permission to source folders

In the source files (usually C:\inetpub\wwwroot\openMIS), IIS_IUSRS need to be given full control of the following folders:

- Archive
- Extracts
- FromPhone
- Images
- Workspace

Repeat the following steps for each folder listed above:

- Right click on the folder and select properties
- Ensure that the folder is not read only
- Select the Security tab
- Click on Edit
- Select IIS_IUSRS and allow full control (in the below section).
- Then apply and click OK.

3.4.3 Edit permissions to Windows event logs

Click on the Windows Start menu of run “regedit” via the search box:

- In the Registry Editor, select HKEY_LOCAL_MACHINE → System → CurrentControlSet → Services → Eventlog
- Right click on the EventLog Node, select Permission. Give full permissions to IIS_IUSRS, as described in the above paragraph (Assign permission to source folders)
- Now repeat the same steps for Eventlog → Security node, as it can be required depending on the server’s environment

3.5 Open the application

Open your Internet browser and type the following URL in the browser address bar <http://localhost/>

You can connect with the admin default credentials:

- Login name: Admin
- Password: Admin

v1.3.0 and later

4.1 Prerequisites

In order to install openIMIS Web Services, you need first to install openIMIS Database and Web Application.

If not yet installed please follow the steps from the database and web application installation guides.

4.2 Copy openIMIS Web Services

Download and unzip the release from Github web_service_vb repository (https://github.com/openimis/web_service_vb/releases/latest) in a new folder (openIMIS.WS.X.Y.Z) under the IIS wwwroot (usually in C:\inetpub\wwwroot).

4.3 Configure openIMIS Web Services in IIS

In Internet Information Service (IIS) Manager, right click on the previous added IMIS site and select Add application. Fill in the form as follows:

- Alias: Services (mandatory for the mobile apps)
- Physical Path: The path of the Services Folder in the sources (usually C:\inetpub\wwwroot\openIMIS.WS.X.Y.Z)

4.4 Configure openIMIS Web services

Edit the web.config:

- Similarly, the Web services needs that the database connection string to be updated

- In the services source files (usually C:\inetpub\wwwroot\openIMIS.WS.X.Y.Z), locate the file “web.config” and edit it accordingly. For example:

```
1 <connectionStrings>
2   <remove name="CHF_CENTRALConnectionString" />
3   <add name="CHF_CENTRALConnectionString" connectionString="Data_
  ↳Source=[DatabaseIPAdress];Initial Catalog=IMIS;User ID=[ImisUserId];
  ↳Password=[ImisUserPassword]" providerName="System.Data.SqlClient" />
4 </connectionStrings>
```

- -Important note-: the name attribute must remain “CHF_CENTRALConnectionString”

Windows services installation guide

v1.3.0 and later

5.1 Install and configure openIMIS Policy Renewal service

To install the Policy Renewal service, proceed as follow:

- Download and unzip the installation setup from https://github.com/openimis/policy_renewal_service_vb/releases/latest
- Double click on the setup file
- Select the installation path (for example C:\Program Files\openIMIS\Windows Services), and click Next
- Then close after the installation completes
- The service should start automatically as indicated in the system tray. If not, browse to Programs menu and search for “IMIS Policy Renewal” (PolicyRenewalController.exe) and execute it.

To configure the Policy Renewal service, right click on the service controller application in the system tray, select Settings, and fill in the settings as follows for example:

- Server: TPH-L14005\SQLEXPRESS (server instance name)
- Database: IMIS (IMIS database name)
- User Name: ImisUser
- Password: *****
- Time : 00:00
- Interval: 24
- Click on Apply. This will run a backup daily at midnight.

5.2 Install and configure openMIS Backup service

- Download and unzip the installation setup from https://github.com/openimis/imis_backup_service_vb/releases/latest
- Follow the same steps as for the Policy Renewal service to configure the service.

5.3 Install and configure openMIS Feedback Prompt service

- Download and unzip the installation setup from https://github.com/openimis/imis_feedback_prompt_service_vb/releases/latest
- Follow the same steps as for the Policy Renewal service to configure the service.

5.4 Troubleshooting Windows Services

An error message may appear after the services started, saying that the service failed. In this case, restart it as a Local System service:

- Open the Windows Services manager
- Locate the service that failed
- Right click on it and select Properties → Log on tab
- Select Local System account

Mobile application configuration guide

v1.3.0 and later

Mobile apps need to be re-compiled with the correct server's IP address for it to be functional.

To do so:

- Open Android Studio
- Open the mobile app project you want to configure (available on [openIMIS github](#))
- For the Claim and Enquiry apps, locate the file called General.java in the project explorer
- For the IMIS app, locate the class AppInformation in the project explorer:
App\src\main\java\tz\co\exact\imis\AppInformation.java
- Edit the class by replacing the server's IP address or server name, and save
- Build the app via the tools menu
- The new .apk file is now available in the release folder indicated by Android Studio

CHAPTER 7

Prerequisites

In order to install openIMIS Analytic and reporting Services, you need first to install openIMIS Database and Web Application. If not yet installed please follow the steps from the database and web application installation guides.

Deploying of Analytic and reporting requires complete Microsoft IIS 8.* Configuration with Analysis services installed and Microsoft Access database engine driver, you can download Microsoft Access driver from [Microsoft website](#).

Install SQL Server

Note: This installation guide is based on SQL Server 2017.

Download the desired version of SQL Server (for example, the Standard version from <https://www.microsoft.com/en-us/sql-server/sql-server-downloads>). the Express version cannot be used because it lacks the data warehouse function used by AR IMIS

Select the manual configuration option in order to fine tune the installation process.

8.1 SQL Server installation home page

Click 'New SQL Server stand-alone new installation or add feature to an existing installation' (*SQL Server installation home page*)

8.2 License Terms

Accept license terms, after read and submit to your lawyer for verification, click Next

8.3 Setup Role

Choose the first selection which does new installation of features (*SQL Role page*)

8.4 Features selection

Select feature, that will give the capability to work with normal Database engine along SQL Server Data Tools (Analysis, Integration, Reporting services) (*SQL features page*)

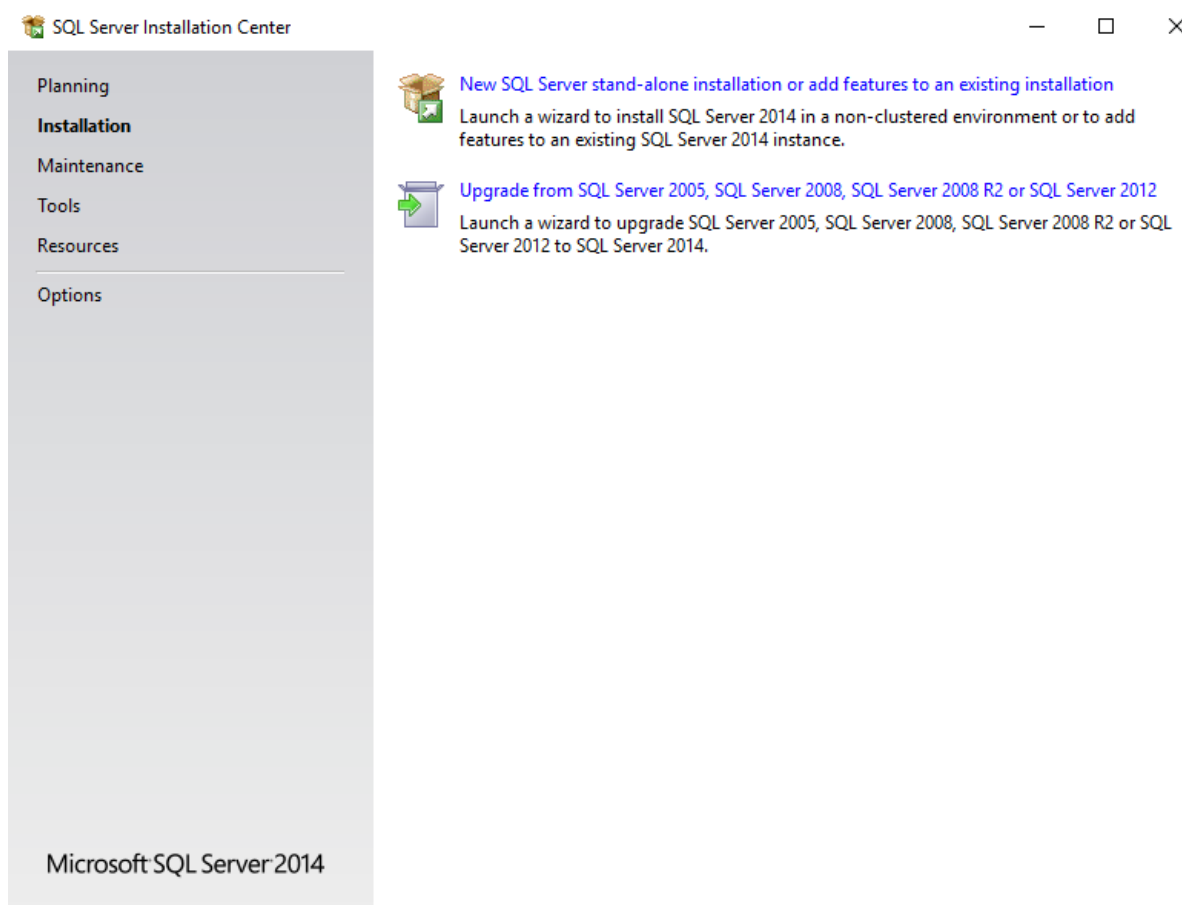


Fig. 1: Image - SQL Server installation home page

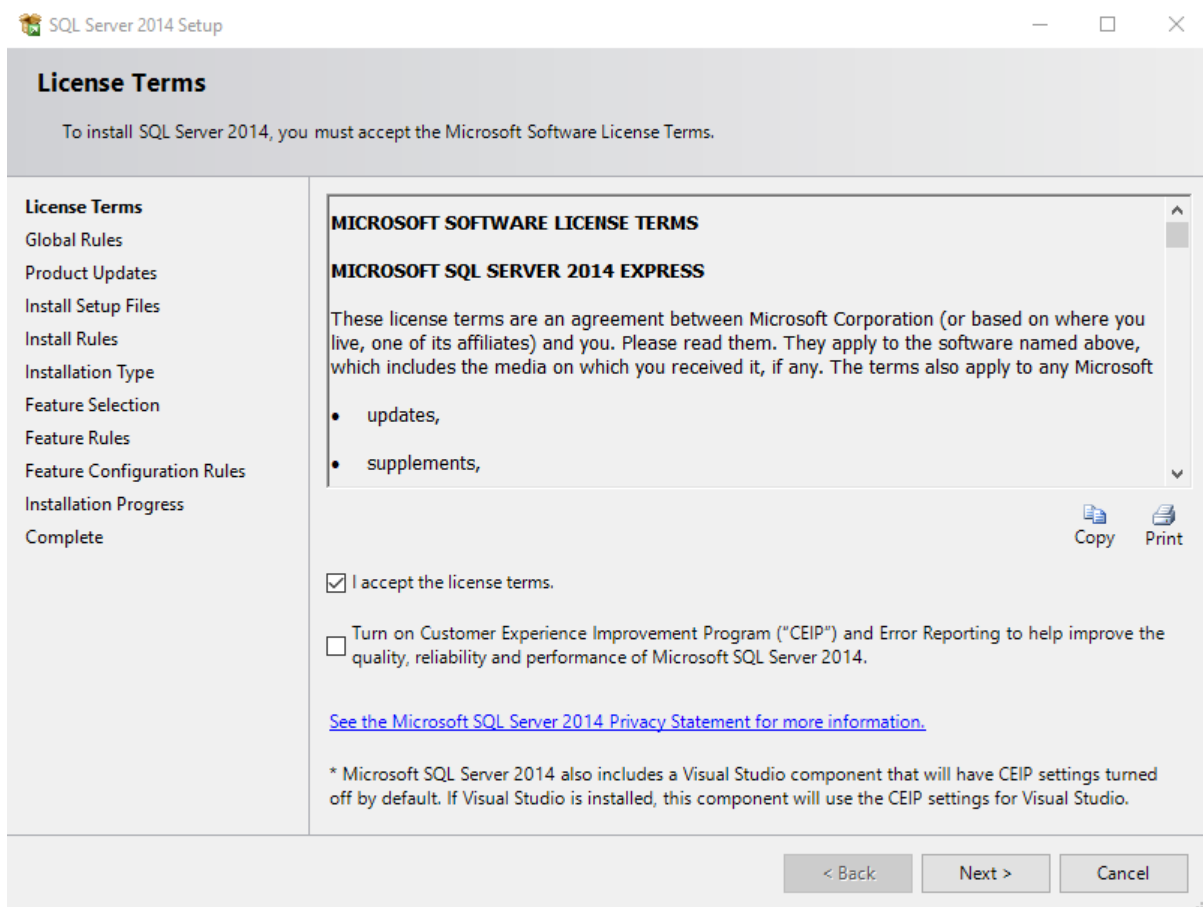


Fig. 2: Image - SQL Role page

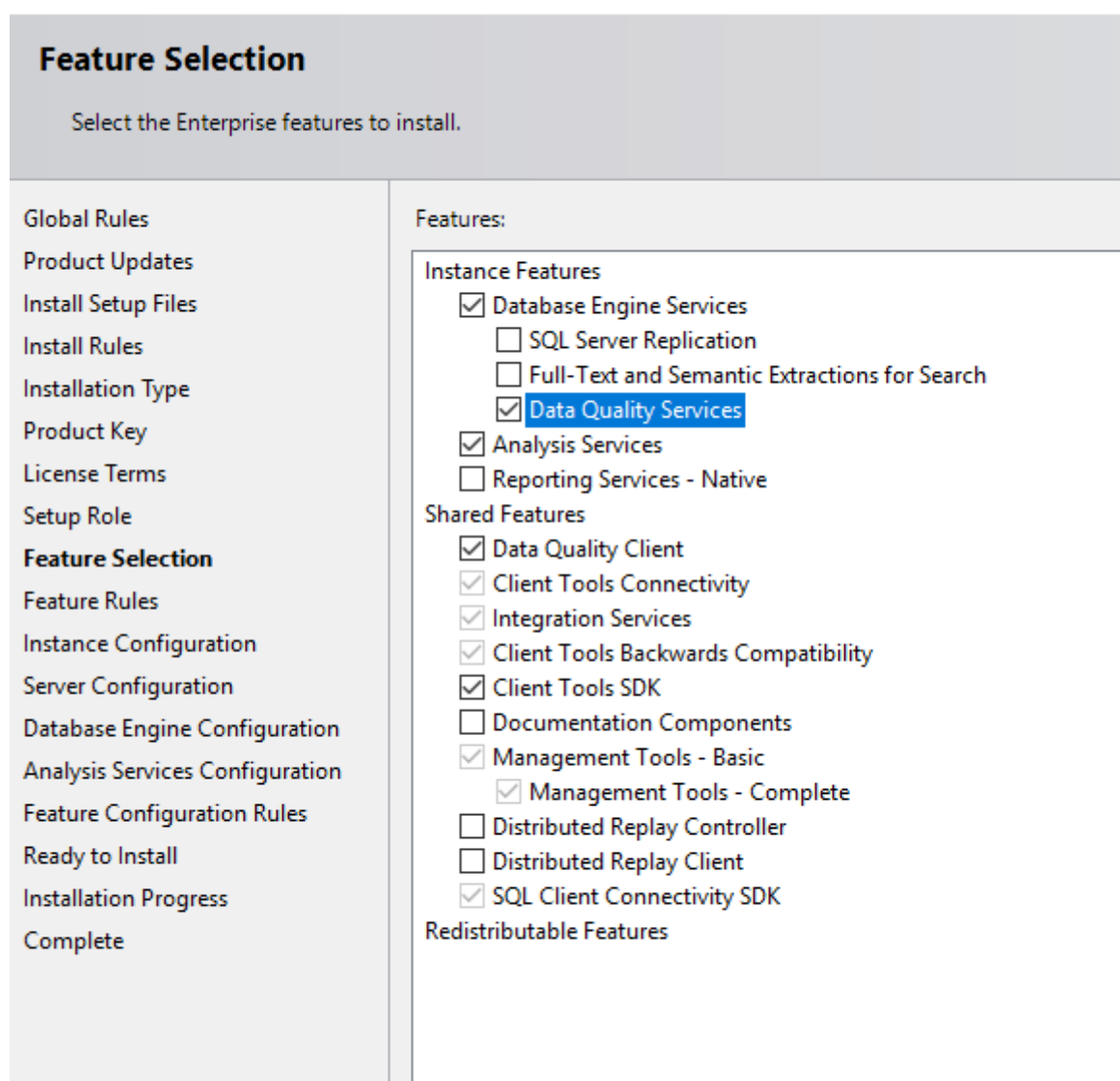


Fig. 3: Image - SQL features page

8.5 Instance Configuration

Choose named instance, to enable working on custom feature, the default name will be SQLSERVER

8.6 Server Configuration

Configure service upon computer startup. Change SQL Server Agent to Automatic ([SQL Configuration page](#))

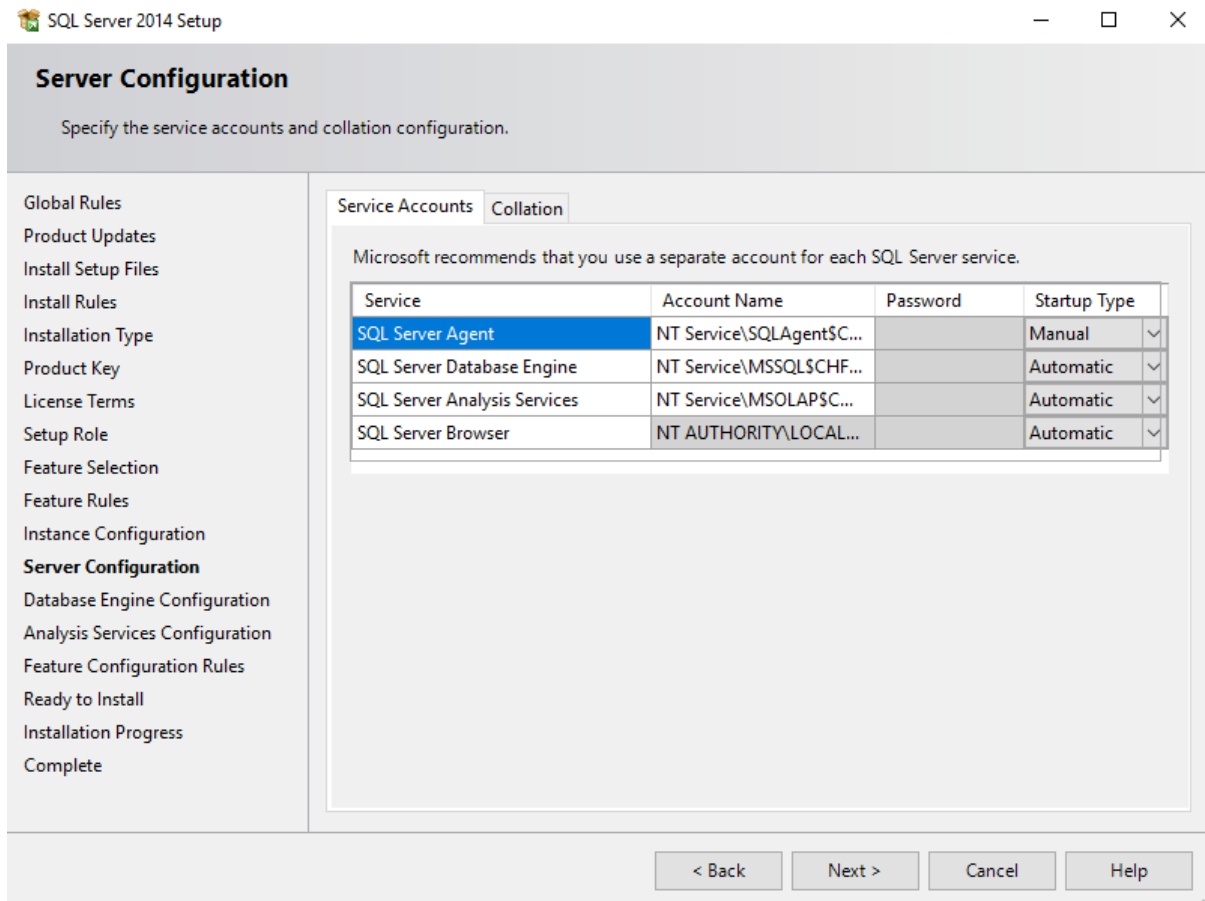


Fig. 4: Image - SQL Configuration page

8.7 Database Configuration

Authentication mode choose Mixed mode, where you will have two selection when login into the server, type the password and click 'Add Current user' button to add local administrator account of a computer, 'Add' mean you add activate directory user account (locally or connected) ([SQL Engine Configuration page](#))

Database Engine Configuration

Specify Database Engine authentication security mode, administrators and data directories.

Global Rules
Product Updates
Install Setup Files
Install Rules
Installation Type
Product Key
License Terms
Setup Role
Feature Selection
Feature Rules
Instance Configuration
Server Configuration
Database Engine Configuration
Analysis Services Configuration
Feature Configuration Rules
Ready to Install
Installation Progress
Complete

Server Configuration | Data Directories

Specify the authentication mode and administrators for the Database Engine.

Authentication Mode

☐ Windows authentication mode

☒ Mixed Mode (SQL Server authentication and Windows authentication)

Specify the password for the SQL Server system administrator (sa) account.

Enter password:

Confirm password:

Specify SQL Server administrators

LAPTOP-26LKDSB\EXACTCODE (EXACTCODE)	SQL Server administrators have unrestricted access to the Database Engine.

Fig. 5: Image - SQL Engine Configuration page

8.8 Analysis Services Configuration

Server Mode choose 'Multidimensional and Data Mining Mode' due to facts that;

8.9 Grant data access permissions

As previously noted, you will need to grant permissions on the Analysis Services instance. Each database object will have roles that provide a given level of permissions (read or read/write), and each role will have members consisting of Windows user identities. To set permissions, you can use SQL Server Management Studio. Under the *Database* → *Roles* folder, you can

- Create roles,
- Specify database permissions,
- Assign membership to Windows user or group accounts,
- Grant read or write permissions on specific objects.

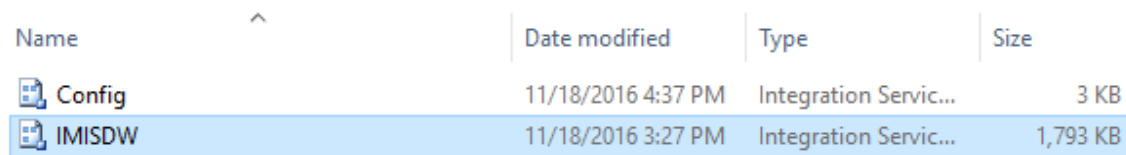
Typically, Read permissions on a cube are sufficient for client connections that use, but do not update, model data. Role assignment varies depending on how you configured authentication.

Deploy SSIS

1. download the AR IMIS package

Go on the AR IMIS GitHub https://github.com/openimis/ar_imis_reporting_tool and click on download

2. Once the IIS configuration has successfully completed, go to the SSIS deployment folder. Double click the IMISDW file(*Image - SSIS deployment folder*).





Name	Date modified	Type	Size
 Config	11/18/2016 4:37 PM	Integration Servic...	3 KB
 IMISDW	11/18/2016 3:27 PM	Integration Servic...	1,793 KB

Fig. 1: *Image - SSIS deployment folder*

3. On the package installation wizard click next to continue with SSIS installation(*Image - SSIS deployment wizard, Start*).
4. On the installation wizard, select the file system deployment and click next to continue the installation(*Image - SSIS deployment wizard, Install location*).
5. Browse the destination folder to install the package. Click next to continue with the installation(*Image - SSIS deployment wizard, Destination folder*).
6. Click next to allow the installation wizard to install the SSIS packages(*Image - SSIS deployment wizard, Launch installation*).
7. Modify the credential details as required. Click next to continue with the installation(*Image - SSIS deployment wizard, Change password*).

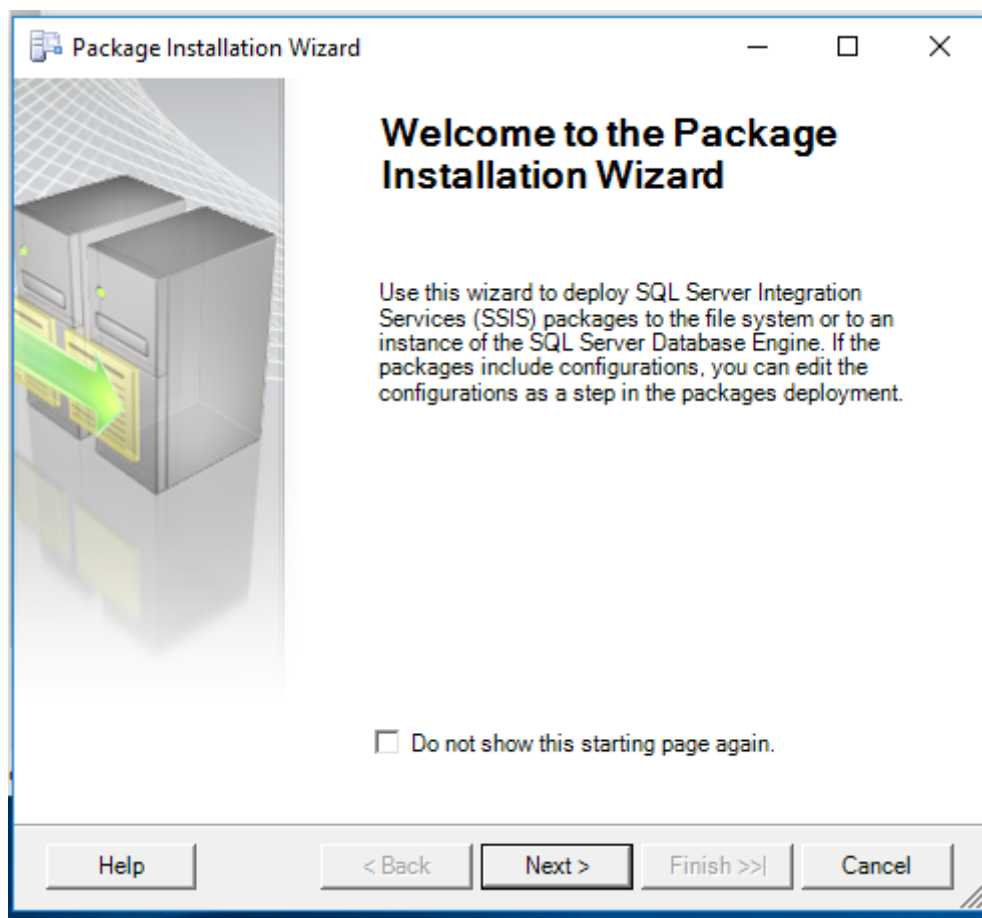


Fig. 2: Image - SSIS deployment wizard, Start

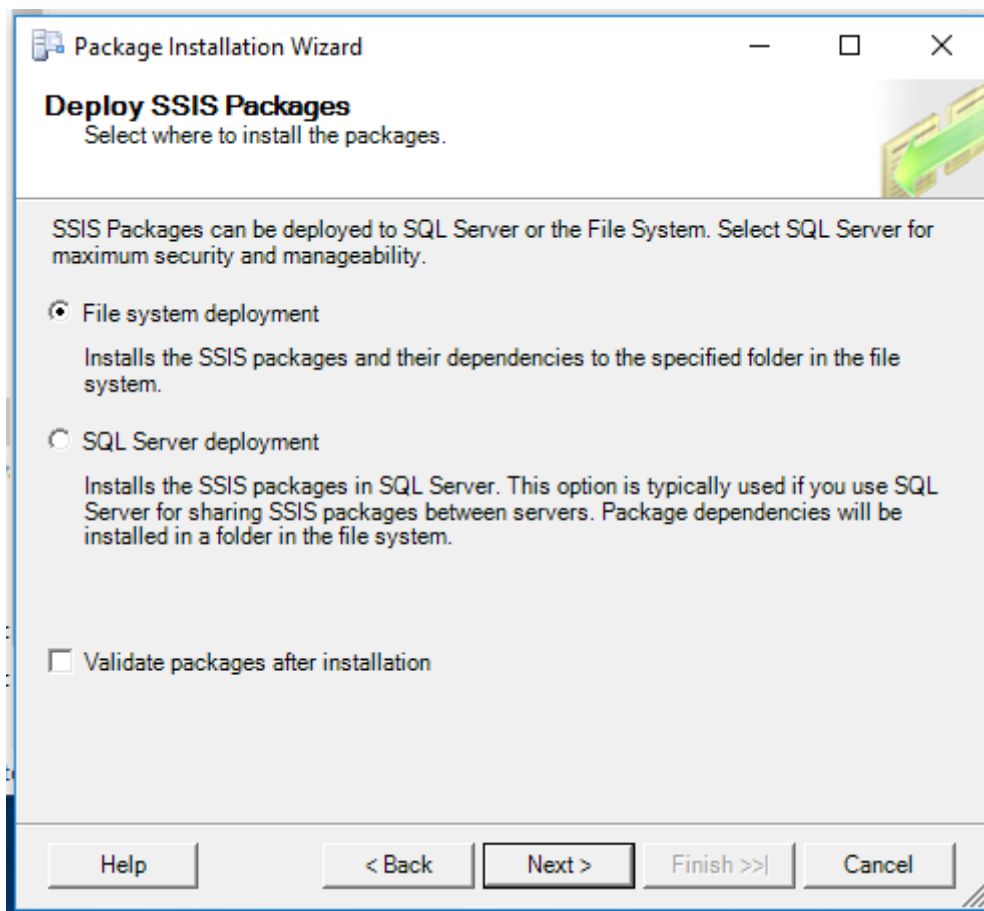


Fig. 3: Image - SSIS deployment wizard, Install location

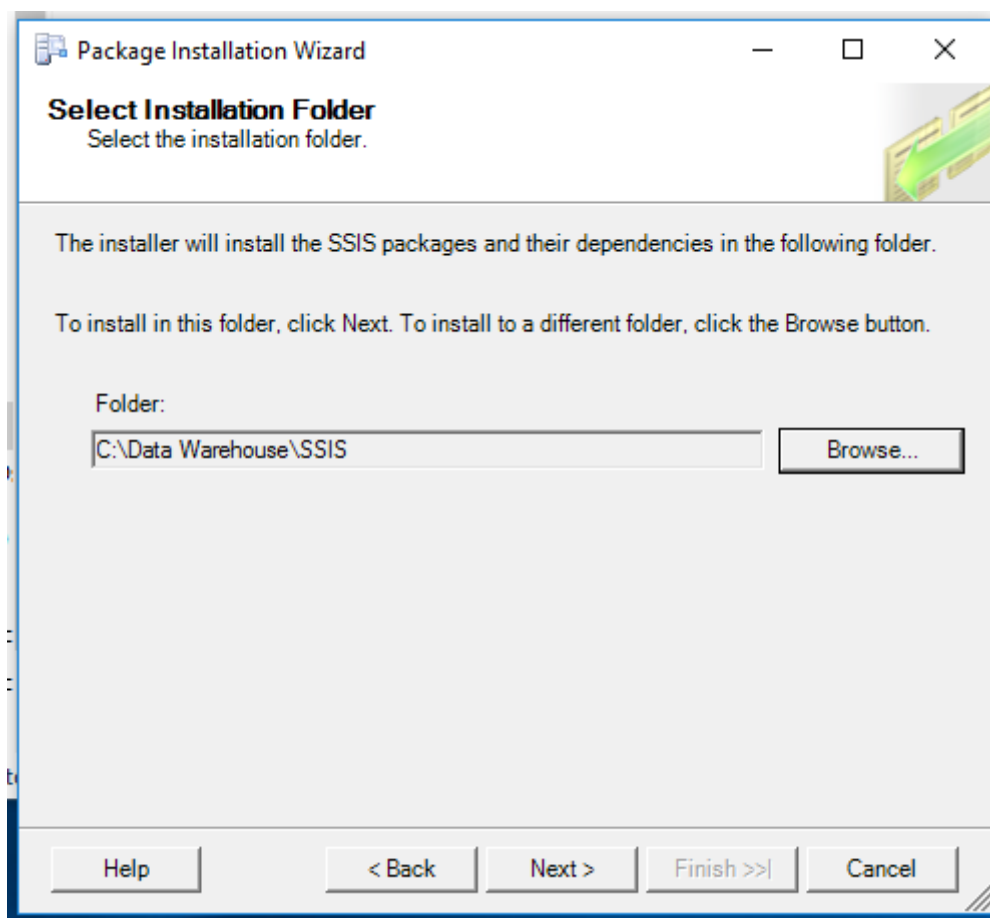


Fig. 4: Image - SSIS deployment wizard, Destination folder

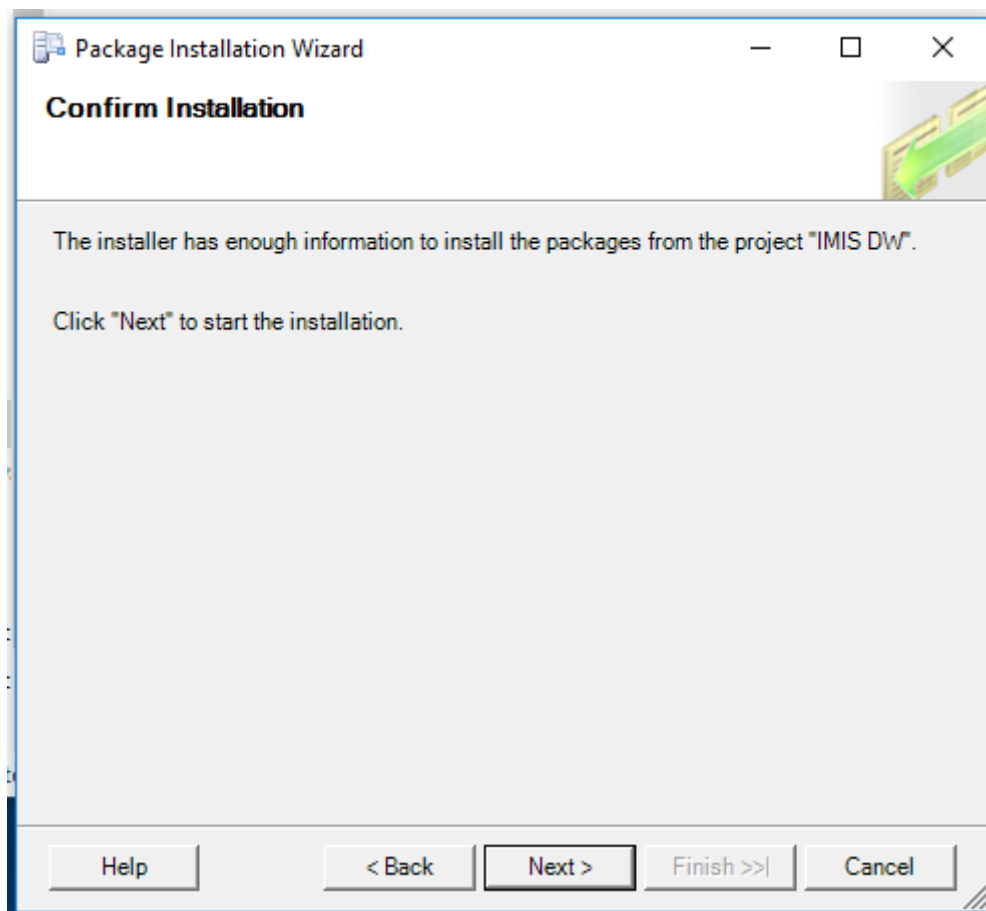


Fig. 5: Image - SSIS deployment wizard, Launch installation

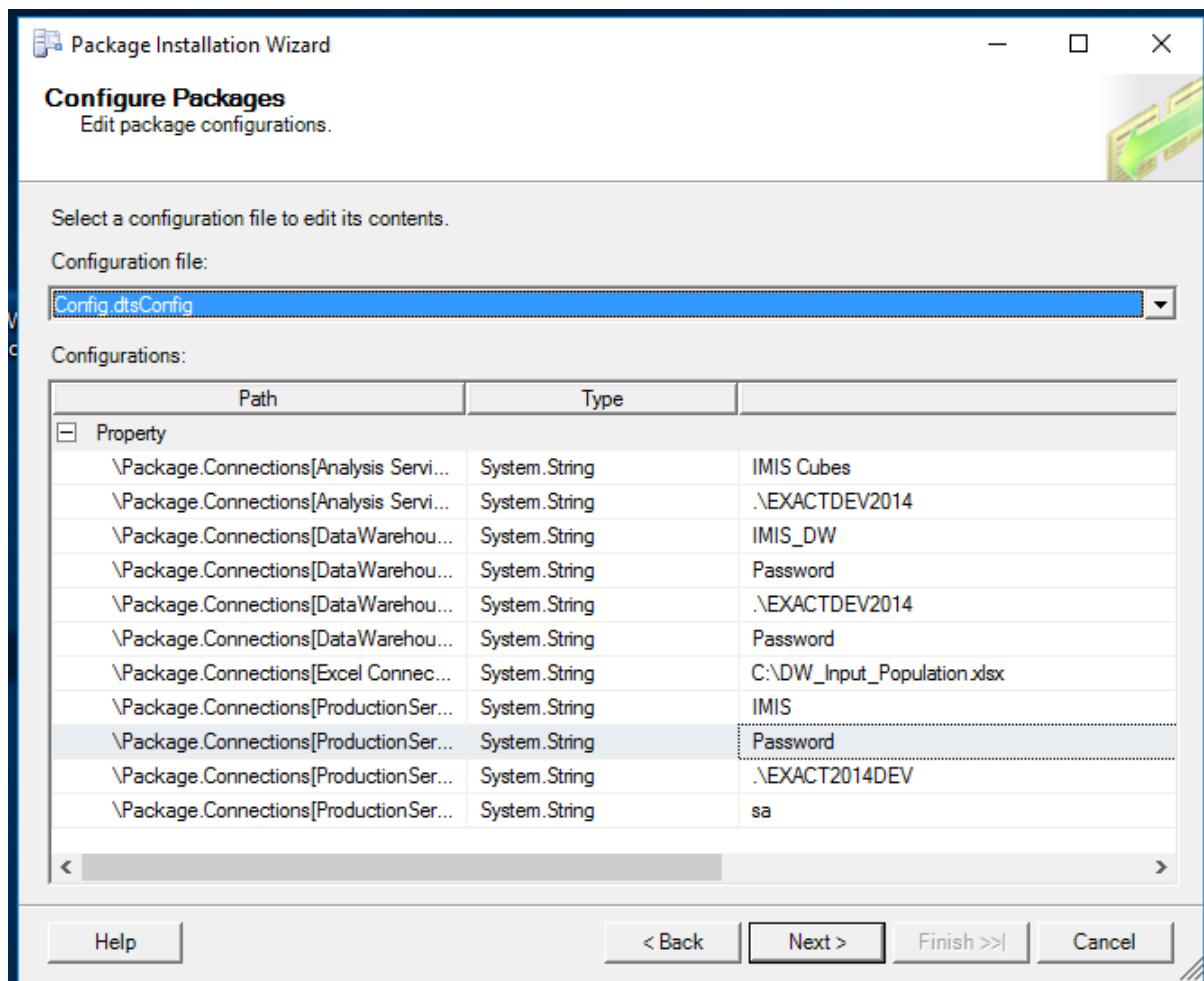


Fig. 6: Image - SSIS deployment wizard, Change password

8. Click finish to complete the installation(*Image - SSIS deployment wizard, Finish installation*).

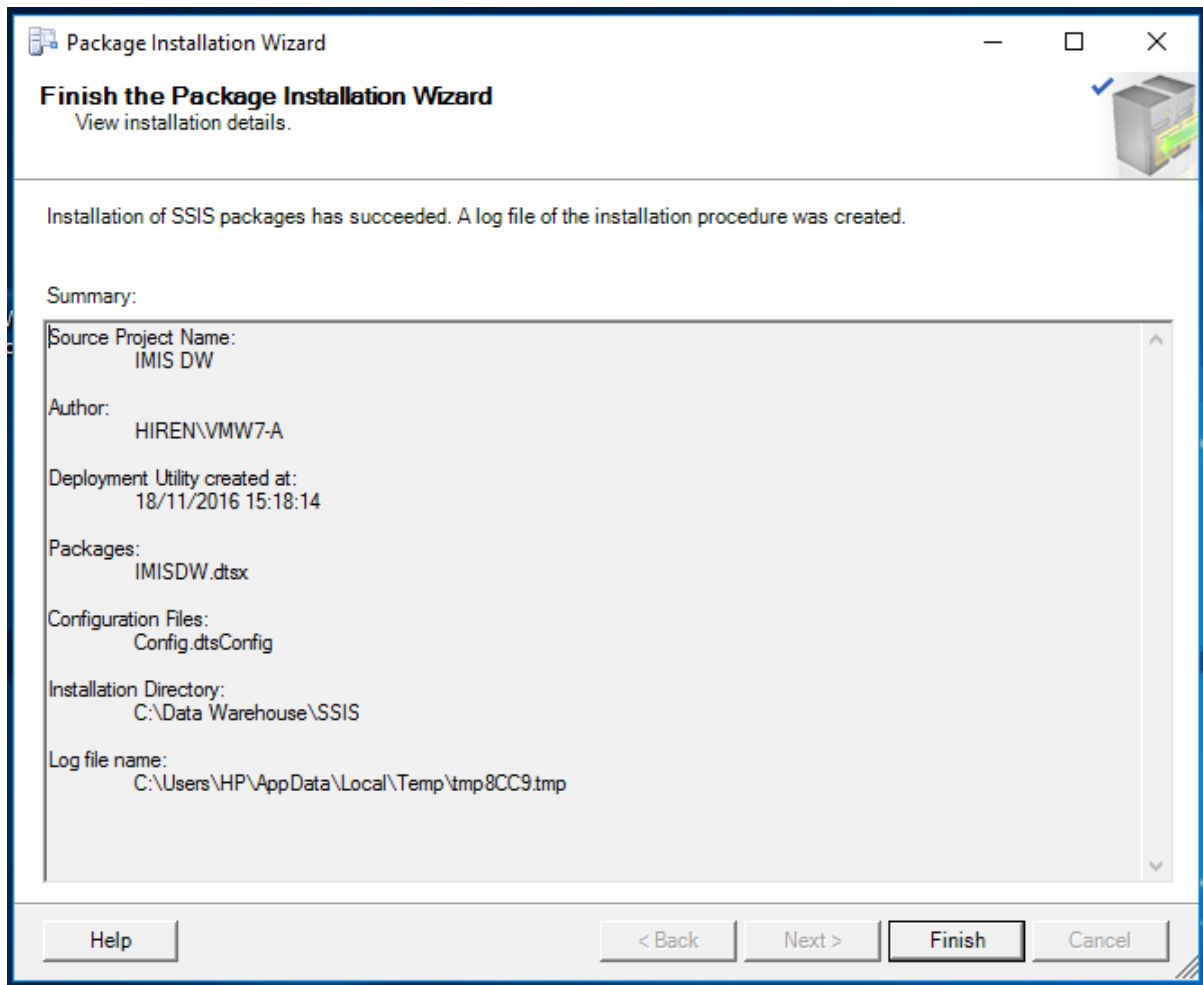


Fig. 7: *Image - SSIS deployment wizard, Finish installation*

CHAPTER 10

Deploy SSAS

1. **Open the SQL Server Management studio and restore the database IMIS_DW.**
Close the SQL server management studio
2. Click the windows start button, search for the Deployment Wizard. Click the Deployment wizard icon(*Image - SSAS deployment wizard, Launch wizard*).

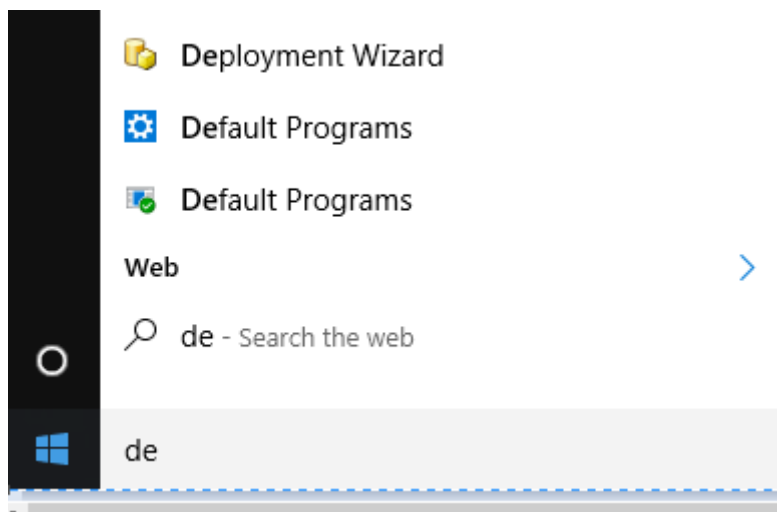


Fig. 1: *Image - SSAS deployment wizard, Launch wizard*

3. Click next to start the installation for SSAS(*Image - SSAS deployment wizard, Start*).
4. **Click the browse button (three dots) and select the IMIS cubes database from the SSAS deployment wizard.**
Click next to continue with the installation.
5. **If the database does not exist on the Analysis Server, the Analysis Service Deployment Wizard will prompt you to create a new database.**
Click next to continue (*Image - SSAS deployment wizard, Deploy IMIS cubes*).
6. **Specify options for partitions, roles and members according to the requirements.**
Click next to continue(*Image - SSAS deployment wizard, Partitions & Roles*).

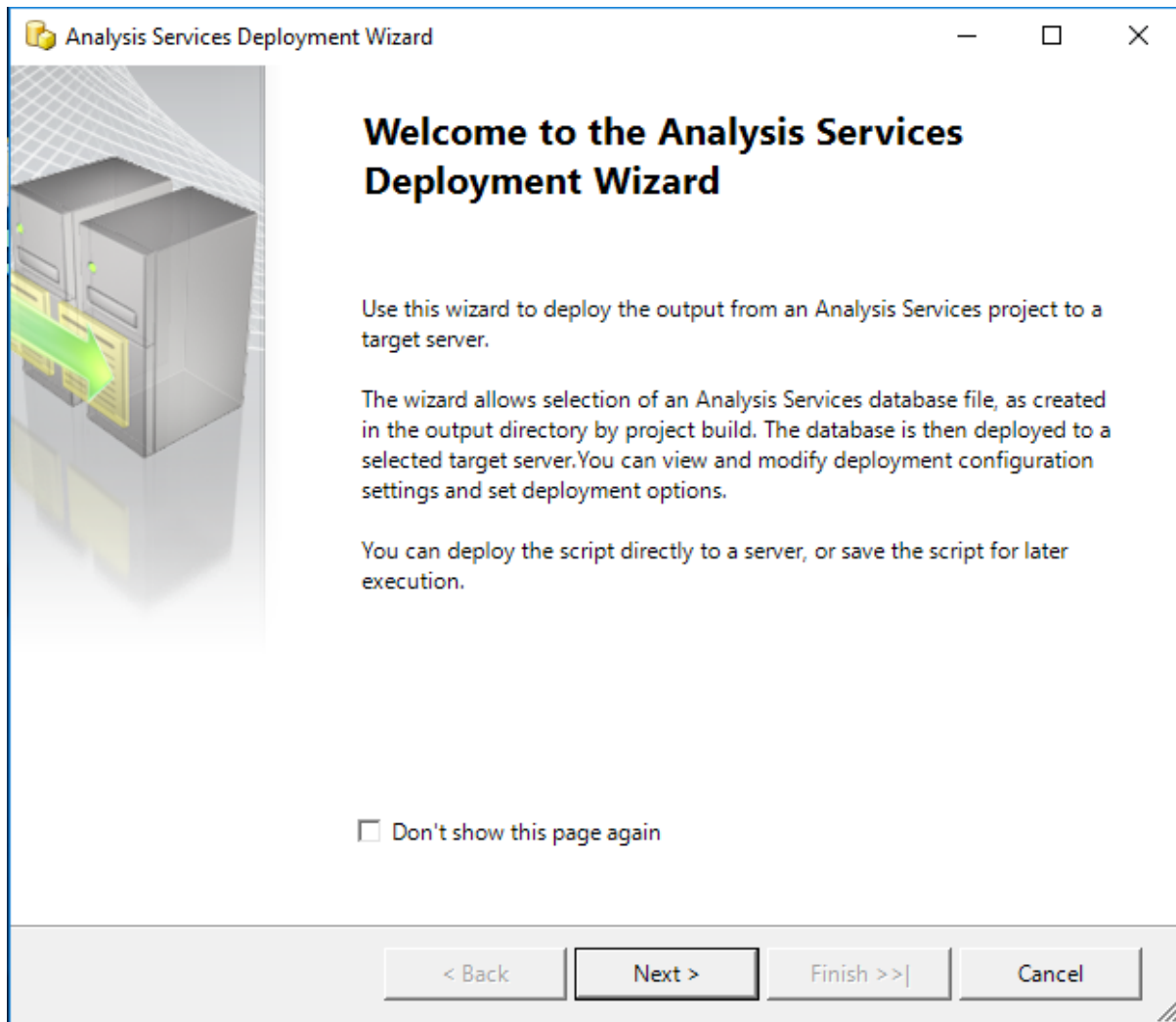


Fig. 2: Image - SSAS deployment wizard, Start

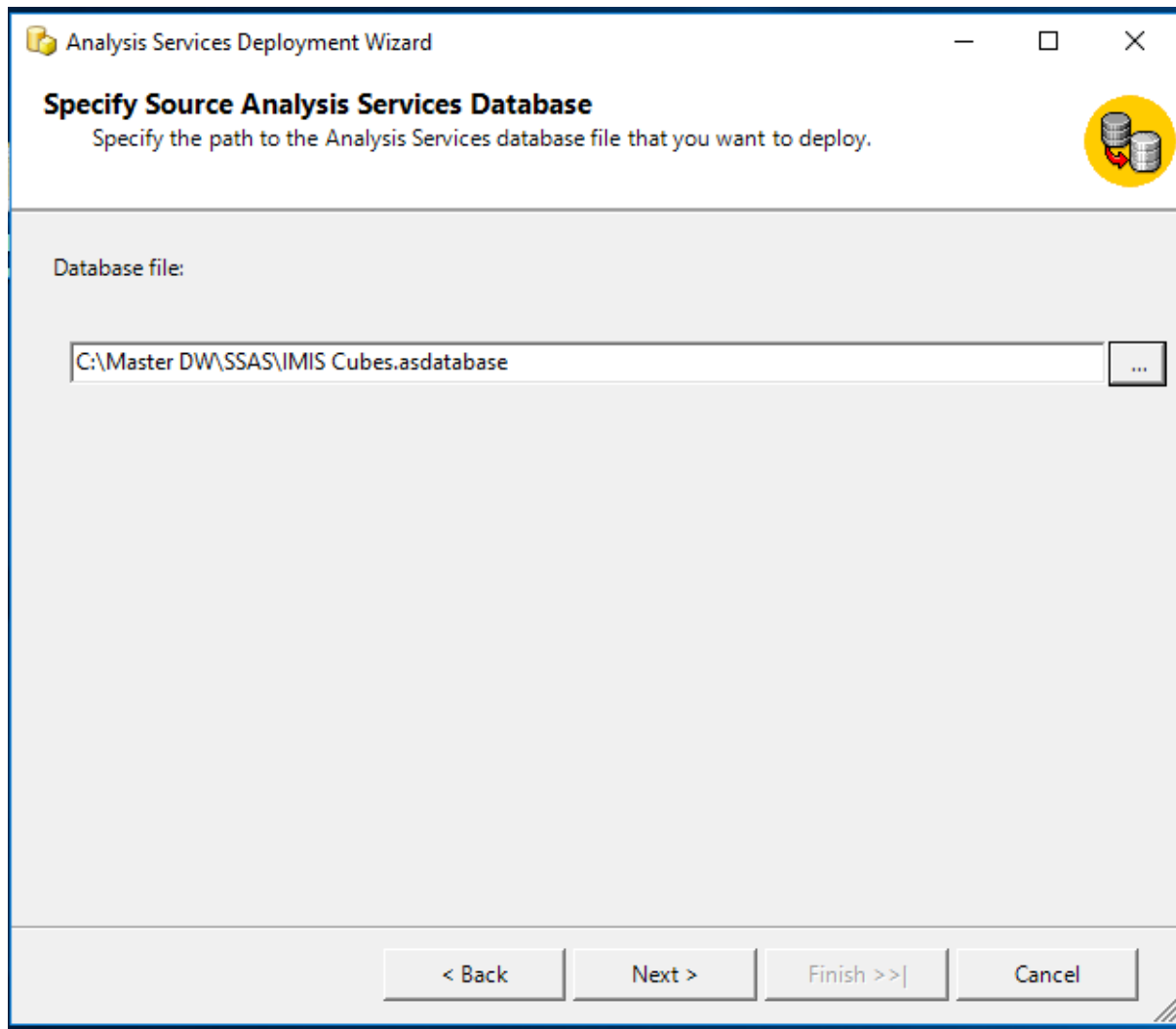


Fig. 3: Image - SSAS deployment wizard, Destination folder

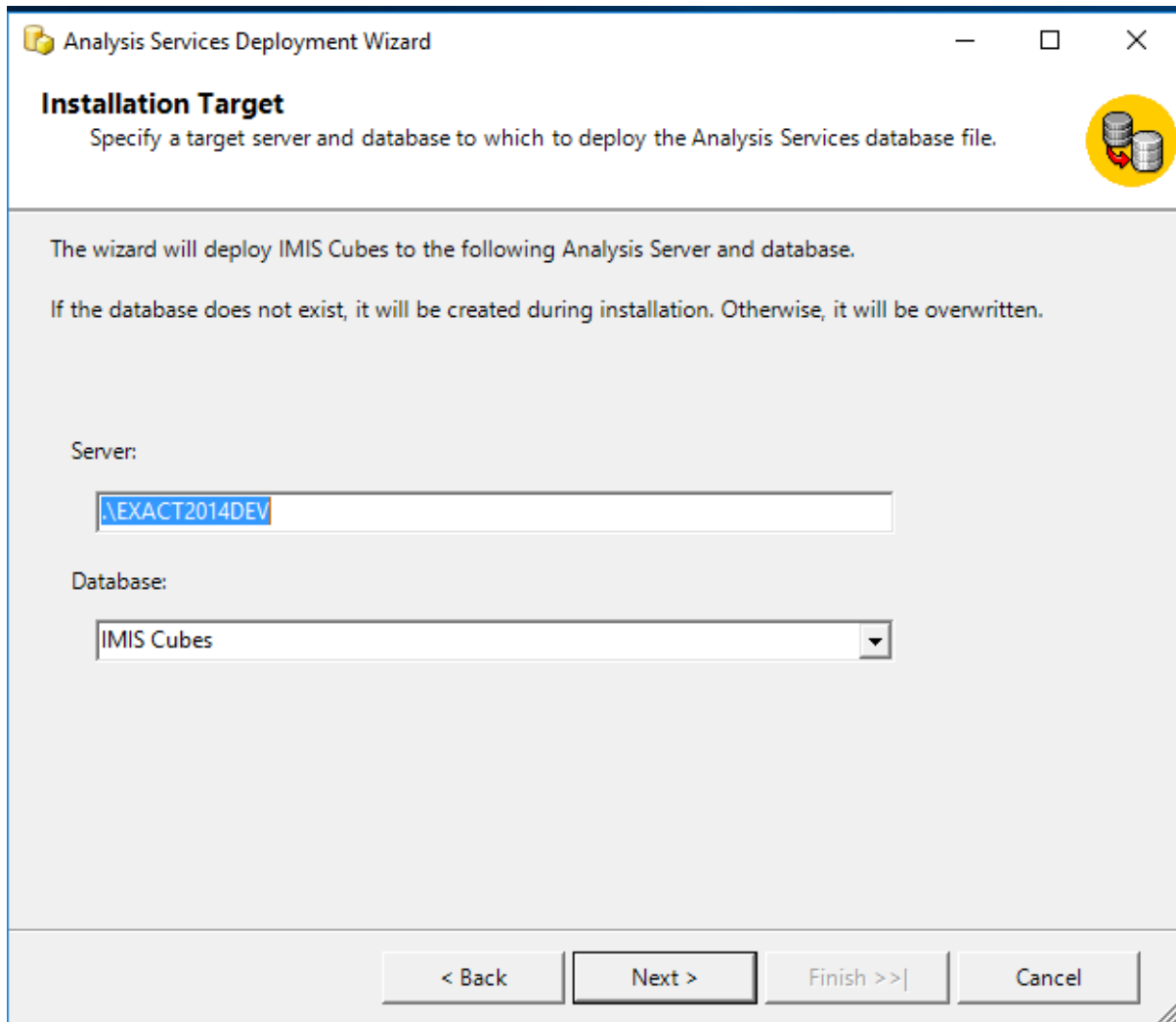


Fig. 4: Image - SSAS deployment wizard, Deploy IMIS cubes

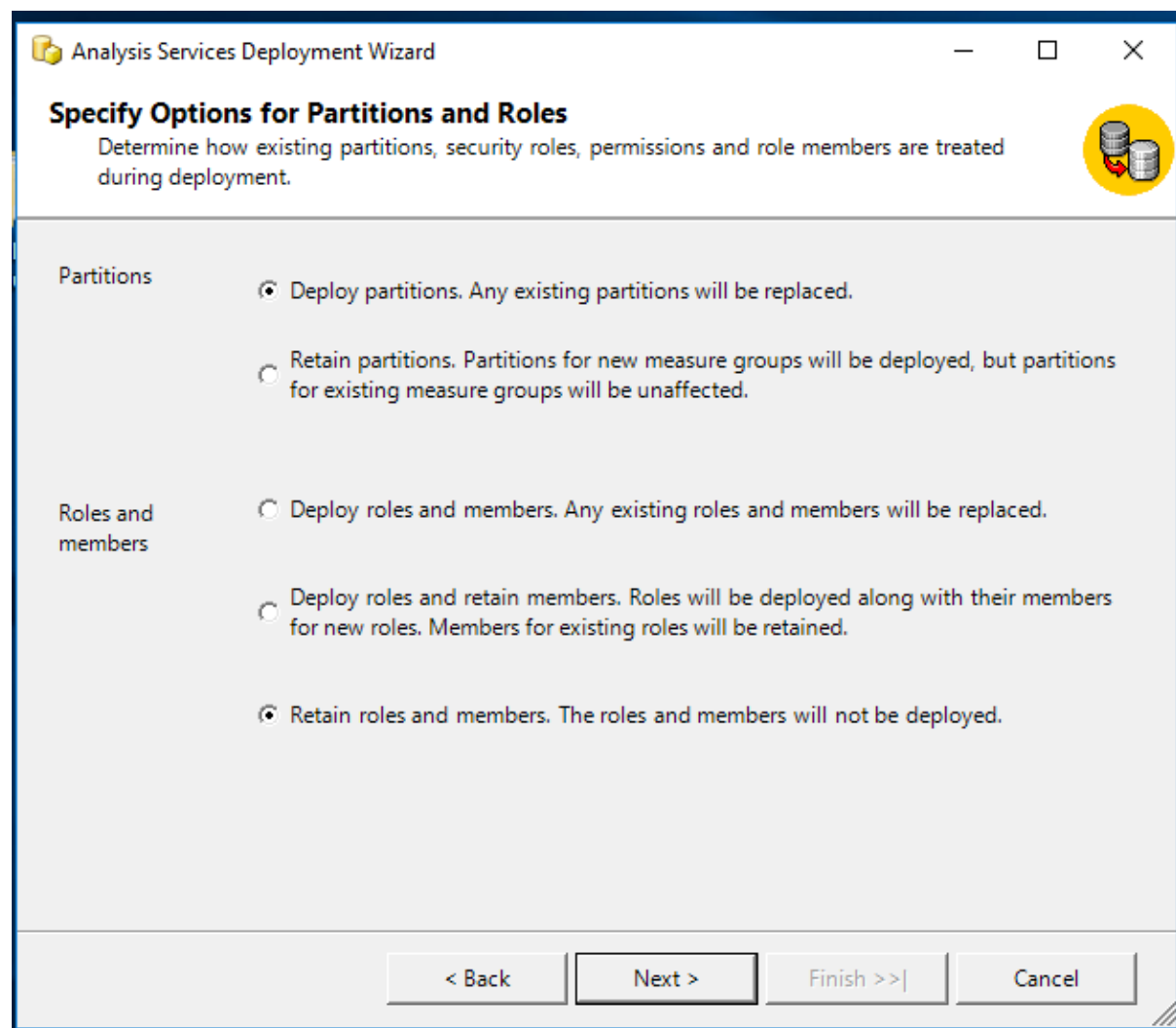


Fig. 5: Image - SSAS deployment wizard, Partitions & Roles

7. On the providers select box, choose SQL server Native client.

- On the left side of the connection manager select connection.
- Click the refresh button and select the instance name.
- On the Log on to the server panel, provide username and Password for the instance selected.
- Under the connect to a database panel select the IMIS_DW.
- Verify the connection by clicking the Test Connection button.
- Click OK to continue with the installation(*Image - SSAS deployment wizard, SQL server*).

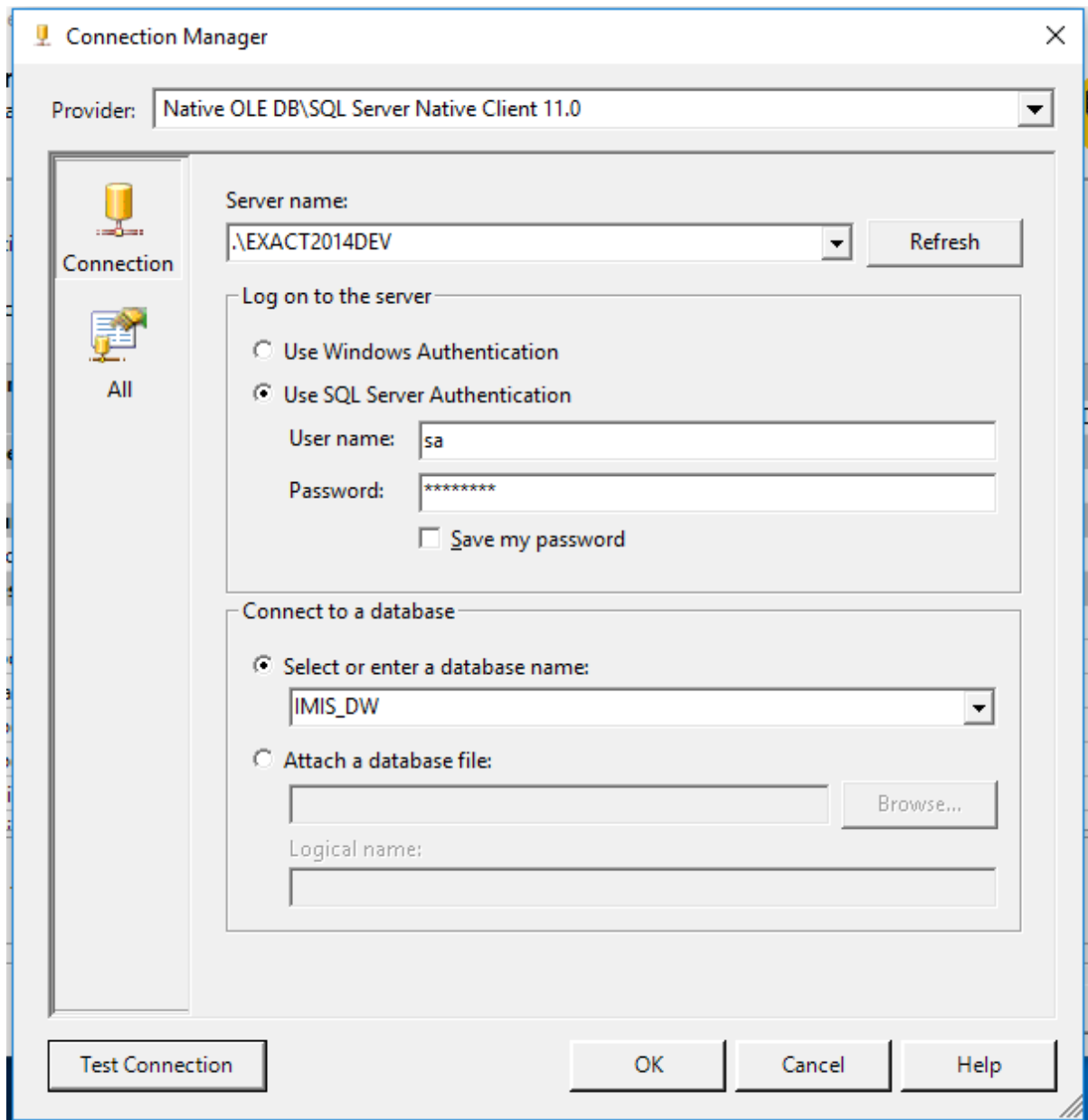


Fig. 6: *Image - SSAS deployment wizard, SQL server*

8. On the Select Processing Options window, select the appropriate option.

Click next to continue with the deployment(*Image - SSAS deployment wizard, Processing*).

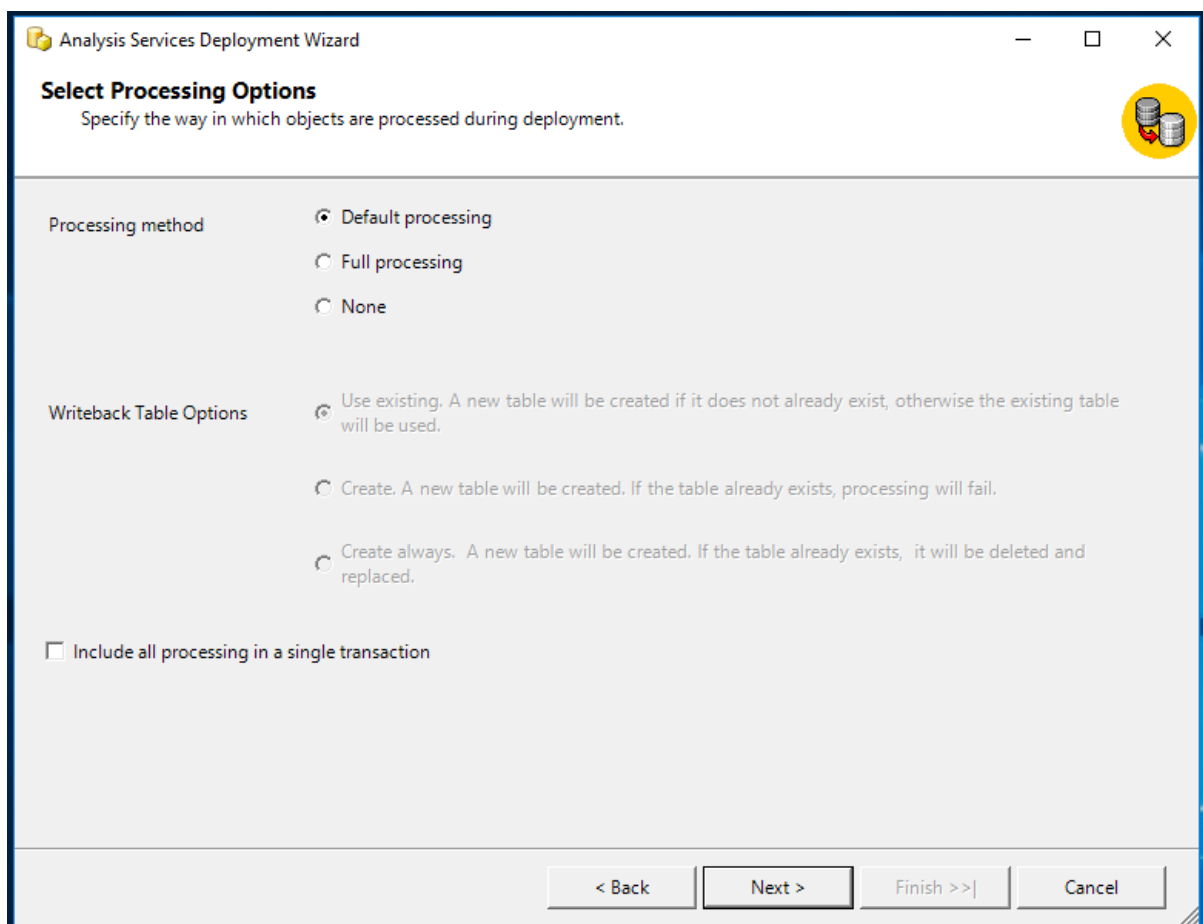


Fig. 7: Image - SSAS deployment wizard, Processing

9. **Confirm Deployment.** If the deployment script is required, check the Create Deployment Script. Click next to continue(*Image - SSAS deployment wizard, Finish*).

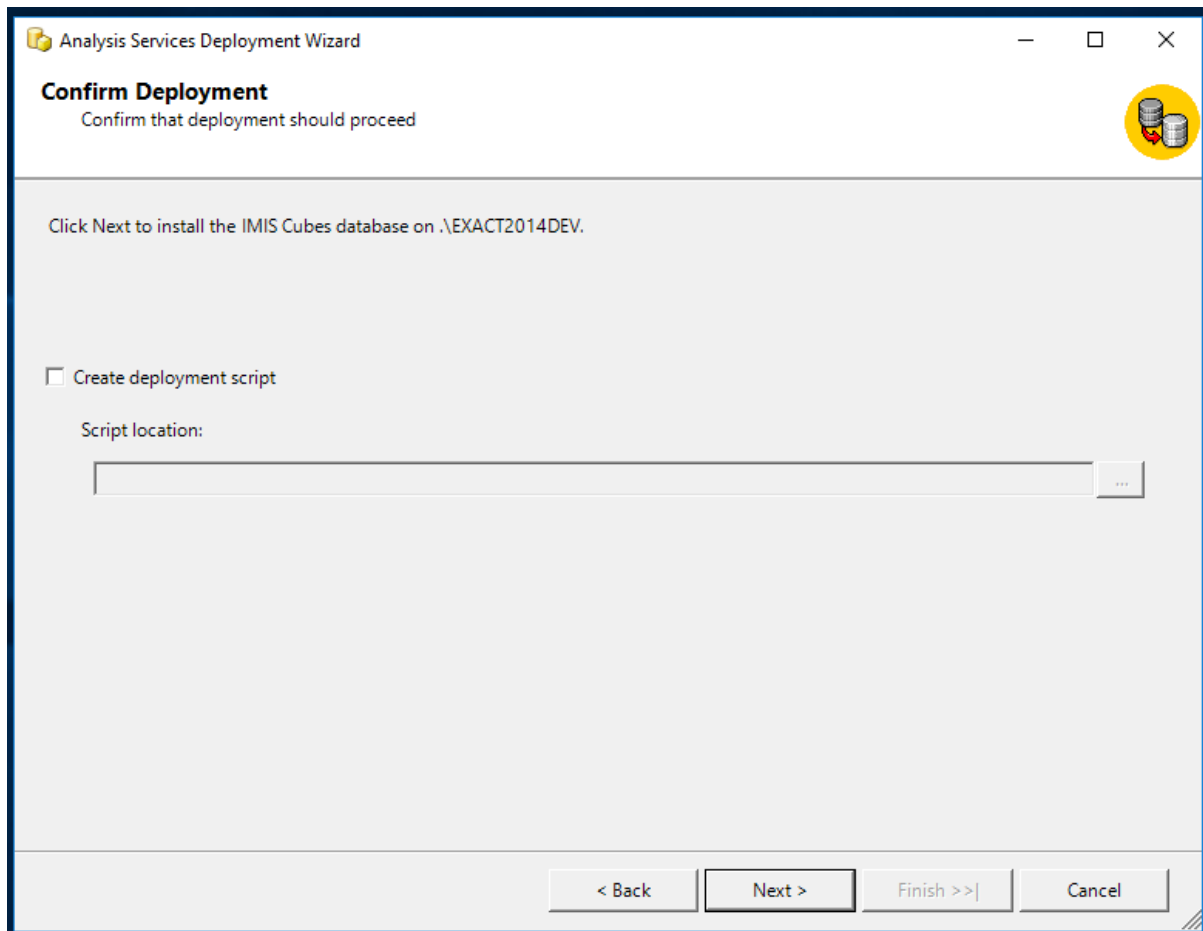


Fig. 8: *Image - SSAS deployment wizard, Finish*

10. Deploying Database

- Click next to continue(*Image - Database deployment wizard, Run*).
- Click finish to complete the deployment(*Image - Database deployment wizard, Results*).

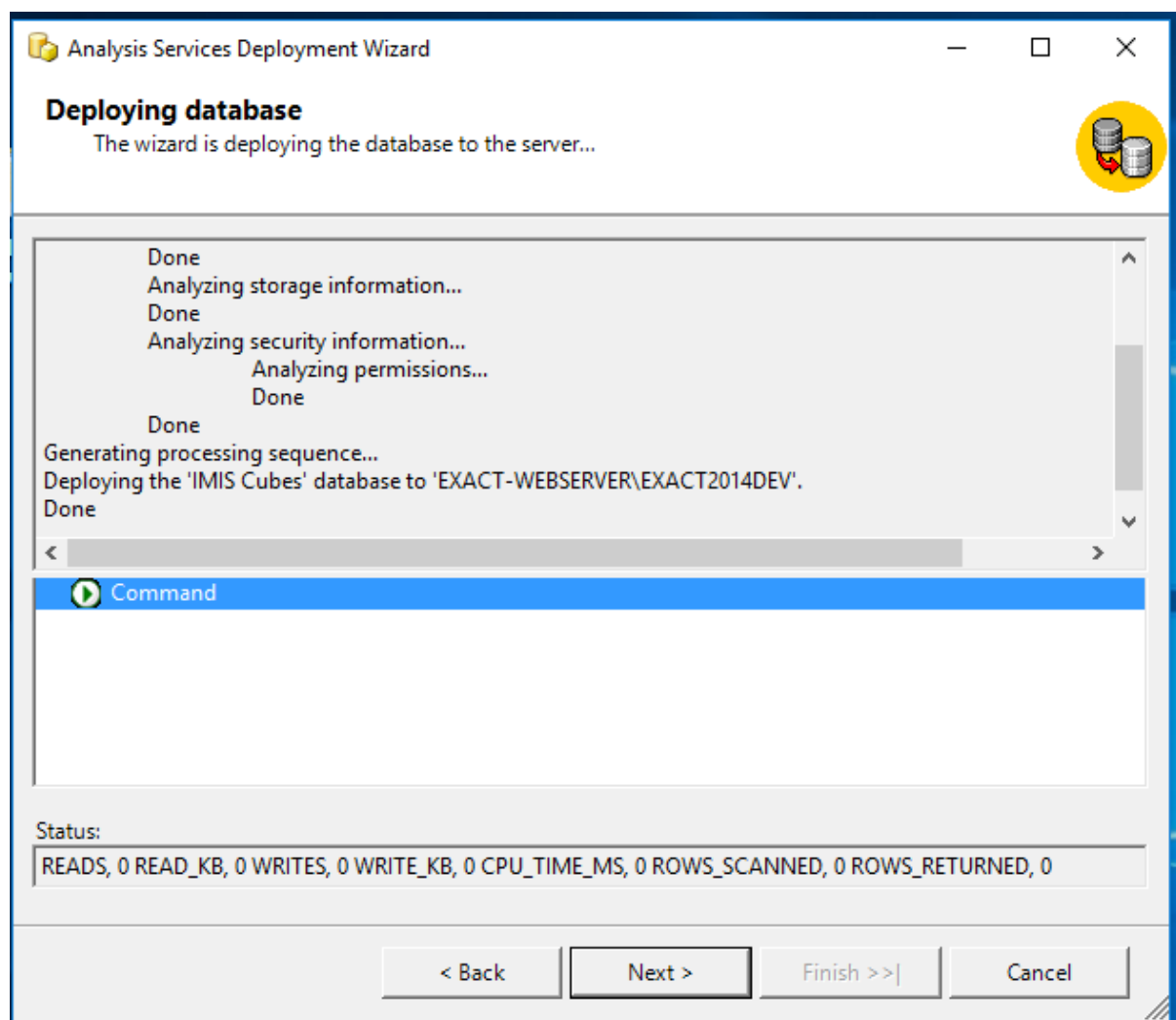


Fig. 9: Image - Database deployment wizard, Run

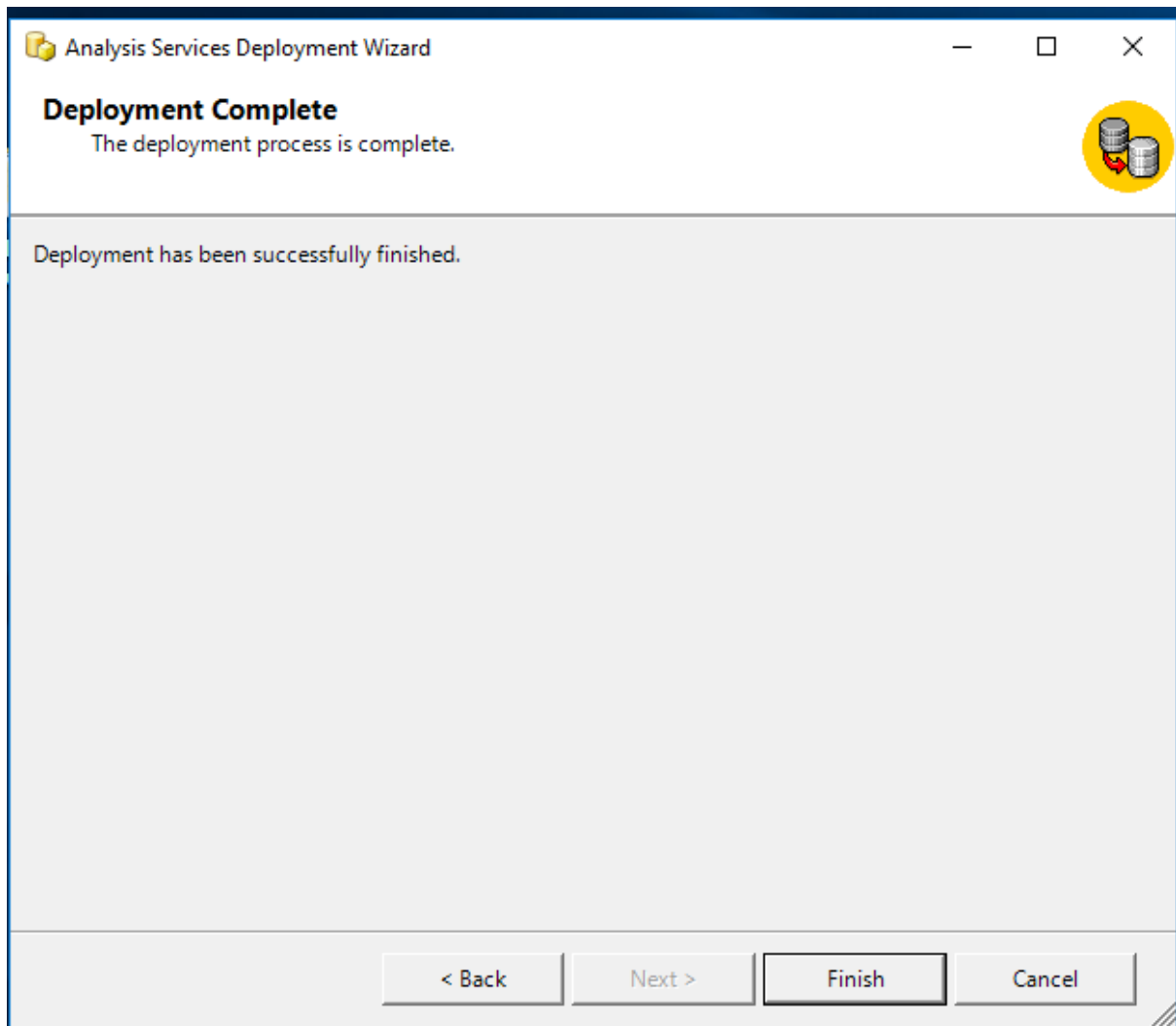


Fig. 10: *Image - Database deployment wizard, Results*

11.1 Additional configuration in Microsoft IIS

The default configuration of IIS 8.X is missing components that are necessary for HTTP access to Analysis Services.

1. Open the Web server role management
 - Use *Server Manager* → *Manage* → *Add Roles and Features* then step through the wizard until you get to the Server Role* s. Scroll down to find Web Server (IIS).
2. Add the roles:
 - *Web Server* → *Security* → *authentication methods* → **Windows Authentication**, or **Basic Authentication**, and any other security features required for your data access scenario (*Image - Authentication methods*)
 - *Web Server* → *Application Development* → *CGI and ISAPI Extensions* → **CGI**. (*Image - IIS feature*)
 - *Web Server* → *Application Development* → *CGI and ISAPI Extensions* → **ISAPI Extensions**. (*Image - IIS feature*)

11.2 Copy openIMIS Analytic and reporting Services

Download and unzip the release from Github *ar_imis_reporting_tool* repository (https://github.com/openimis/ar_imis_reporting_tool/releases/latest) in a new folder (open-*IMIS*.WS.X.Y.Z) under the IIS wwwroot (usually in C:\inetpub\wwwroot).

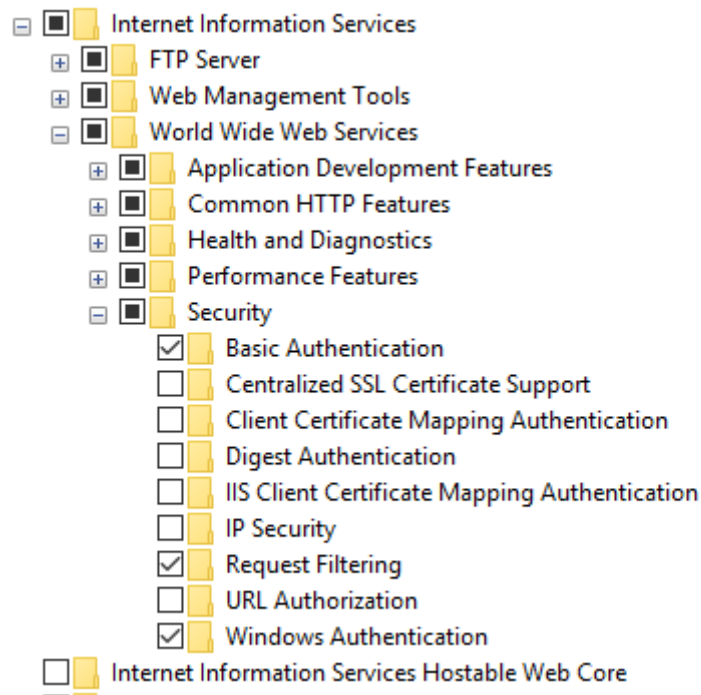


Fig. 1: *Image - Authentication methods*

11.3 Copy the MSMDPUMP files to a folder on the Web server

Each HTTP endpoint that you create must have its own set of MSMDPUMP files. In this step, you copy the MSMDPUMP executable, configuration file, and resource folder from the Analysis Services program folders to a new virtual directory folder that you will create on the file system of the computer running IIS. The drive must be formatted for the NTFS file system. The path to the folder that you create must not contain any spaces.

1. Copy the following files, found at `<drive>:\Program Files\Microsoft SQL Server\<instance>\OLAP\bin\isapi:` MSMDPUMP.DLL, MSMDPUMP.INI, and a Resources folder. (*Image - MSMDPUMP folder content*)
2. On the web server, create a new folder: `<drive>:\inetpub\wwwroot\datawarehouse`
3. Paste the files that you previously copied into this new folder.
4. Verify that the `\inetpub\wwwroot\OLAP` folder on your web server contains the following: MSMDPUMP.DLL, MSMDPUMP.INI, and a Resources folder. Your folder structure should look like this:
 - `<drive>:\inetpub\wwwroot\OLAP\MSMDPUMP.dll`
 - `<drive>:\inetpub\wwwroot\OLAP\MSMDPUMP.ini`
 - `<drive>:\inetpub\wwwroot\OLAP\Resources`

11.4 Create an application pool in IIS

1. Start IIS Manager
2. Create OLAP application pool

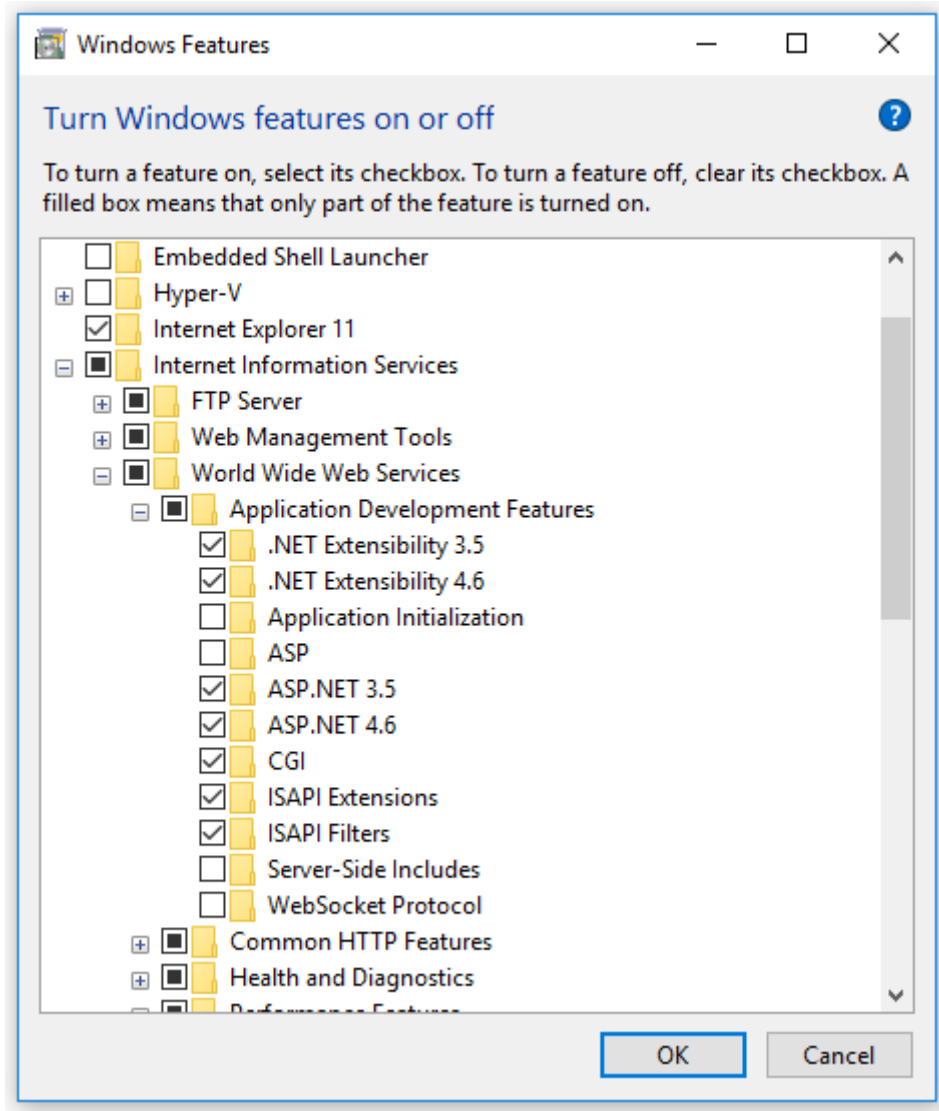


Fig. 2: Image - IIS feature

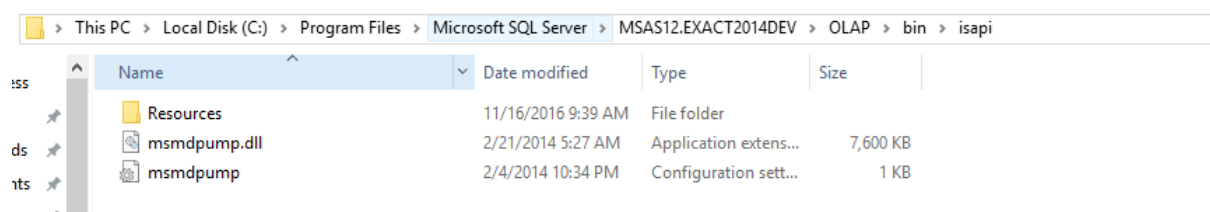


Fig. 3: Image - MSMDPUMP folder content

Open the server folder, then right-click *Application Pools* → Add Application Pool.

- Name the new application pool *OLAP* (*Image - OLAP application pool configuration*)
- ".NET CLR version" set to *.NET CLR version v4.x,
- Managed pipeline mode set to classic.

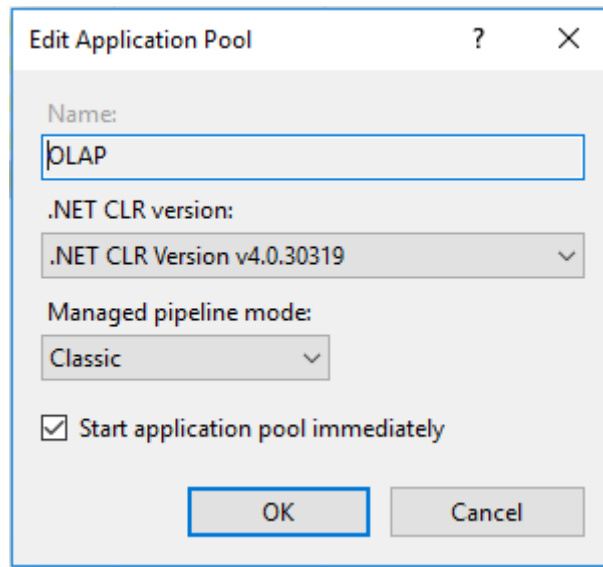


Fig. 4: *Image - OLAP application pool configuration*

1. By default, IIS creates application pools using ApplicationPoolIdentity as the security identity, which is a valid choice for HTTP access to Analysis Services.

11.5 Create an virtual directory in IIS

1. In IIS Manager, open Sites, open Default Web Site. You should see a folder named Datawarehouse. This is a reference to the datawarehouse folder you created under \inetpub\wwwroot. (*Image - Datawarehouse site tree structure*)

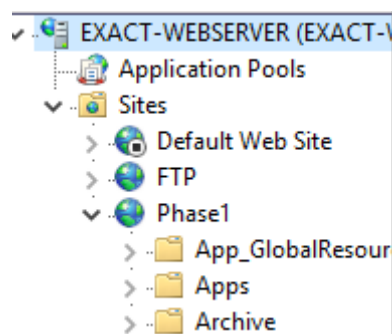


Fig. 5: *Image - Datawarehouse site tree structure*

2. Right-click on the Project IMIS (Phase 1) and then add Application
3. In Add Application, enter Datawarehouse for the alias. Click Select to choose the Datawarehouse application pool. Physical Path should be set

to <drive>:\inetpub\wwwroot\ Datawarehouse(*Image - ADD application on the datawarehouse site*)

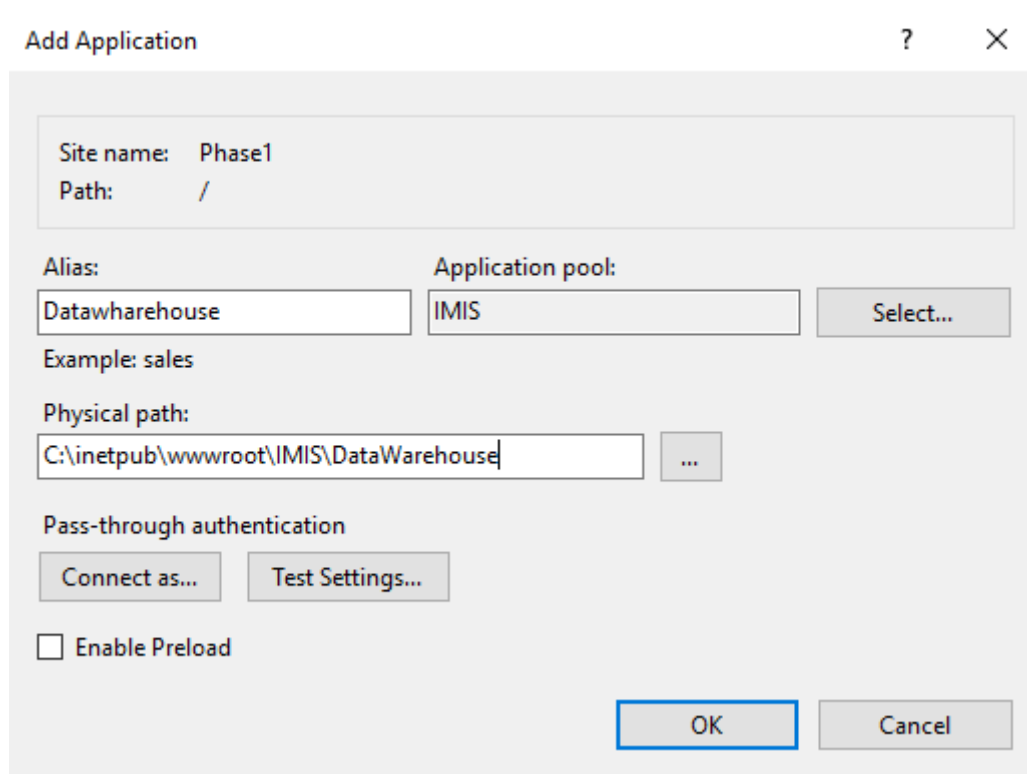


Fig. 6: *Image - ADD application on the datawarehouse site*

4. Click **OK**. Refresh the web site and notice that the IMIS (PHASE 1) folder is now an application under the default web site. The virtual path to the MSMDPUMP file is now established. (*Image - New application in datawarehouse site tree structure*)

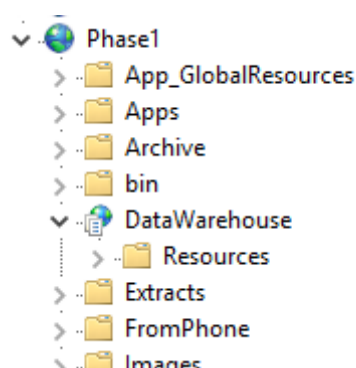


Fig. 7: *Image - New application in datawarehouse site tree structure*

11.6 Configure IIS authentication and add the extension

In this step, you further configure the *SSAS virtual directory* you just created. You will specify an

- Windows authentication (Kerberos or NTLM)

- Basic authentication

In this case we will use *Basic authentication*, make sure that the *Basic authentication* is checked in IIS features as described in **‘additional_configuration_in_microsoft_iis>‘** **__**.

Basic authentication is used when you have Windows identities, but user connections are from non-trusted domains (if your client and server applications are in different domains), prohibiting the use of delegated or impersonated connections. *Basic authentication* lets you specify a user identity and password on a connection string. Instead of using the security context of the current user, credentials on the connection string are used to connect to Analysis Services. Because Analysis Services supports only Windows authentication, any credentials passed to it must be a Windows user or group that is a member of the domain in which Analysis Services is hosted.

This mode requires the user to enter a user name and password. The user name and password are transmitted over the HTTP connection to IIS. IIS will try to impersonate the user using the provided credentials when connecting to MSMDPUMP, but the credentials will not be delegated to Analysis Services. Instead, you will need to pass a valid user name and password on a connection, as described in Step 6 in this document.

Please note that it is imperative for anyone building a system where the password is transmitted to have ways of securing the communication channel. IIS provides a set of tools that help you secure the channel.

Set the authentication type

1. In IIS Manager, open sites, open Default Web Site, and then select the datawarehouse virtual directory. (*Image - IIS configuration panel*)

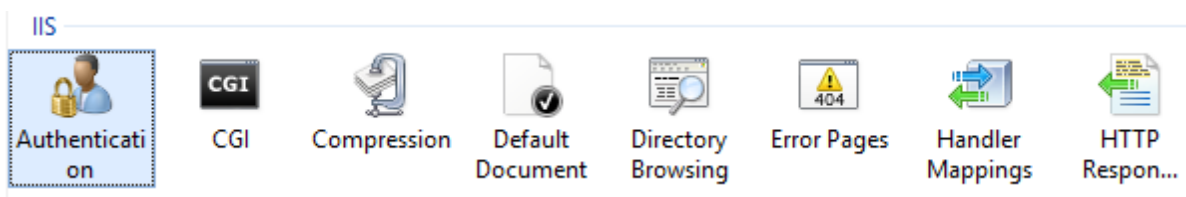


Fig. 8: *Image - IIS configuration panel*

2. Double-click Authentication in the IIS section of the main page. (*Image - IIS Authentication configuration*)

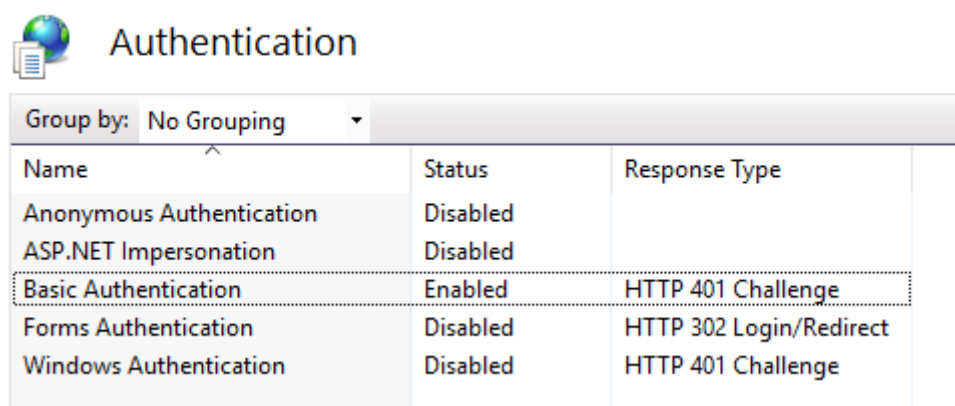


Fig. 9: *Image - IIS Authentication configuration*

3. Disable Anonymous Authentication if you are using Windows or Basic authentication. When A

- Click the datawarehouse virtual directory to open the main page. Double-click Handler Mappings. (Image - IIS configuration panel)

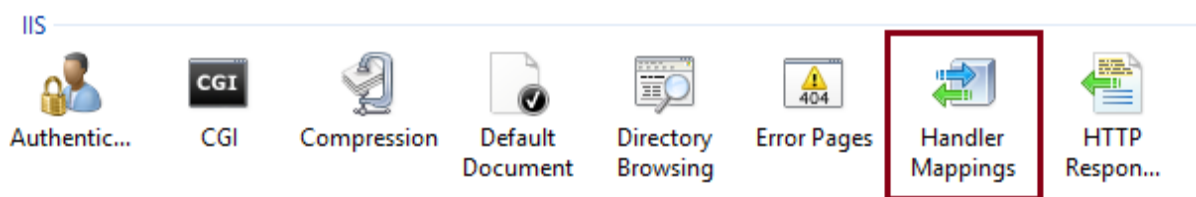


Image - IIS configuration panel

- Right-click anywhere on the page and then select Add Script Map. In the Add Script Map dialog box, specify `*.dll` as the request path, specify `<drive>:\inetpub\wwwroot\OLAP\msmdpump.dll` as the executable, and type datawarehouse as the name. Keep all of the default restrictions associated with this script map. (Image - IIS handler mappings)

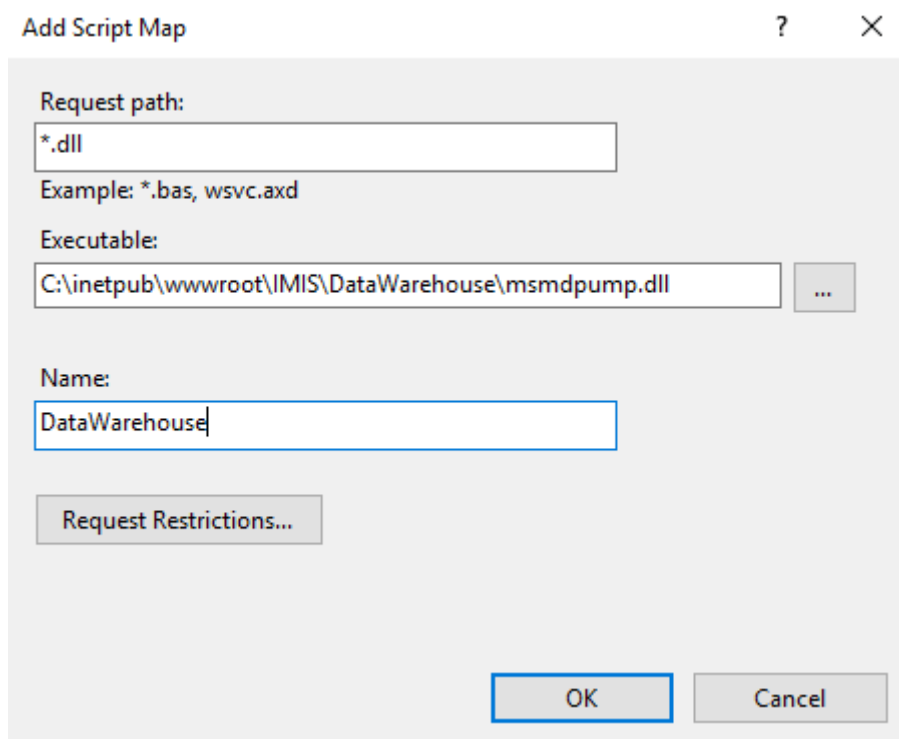


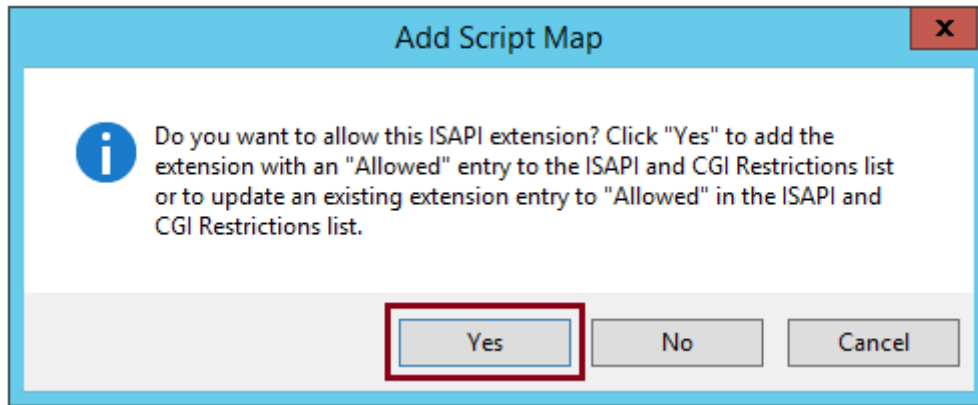
Image - IIS handler mappings

- When prompted to allow the ISAPI extension, click Yes. (Image - IIS handler mappings confirmation pop-up)

Image - IIS handler mappings confirmation pop-up

11.7 Edit the MSMDPUMP.INI file to set the target server

The `MSMDPUMP.INI` file specifies the Analysis Services instance that `MSMD-PUMP.DLL` connects to. This instance can be local or remote, installed as the default or as a named instance. Open the `msmdpump.ini` file located in folder



<drive>:\inetpub\wwwroot\datawarehouse and take a look at the contents of this file. It should look like the following:

```
<ConfigurationSettings>
  <ServerName>localhost</ServerName>
  <SessionTimeout>3600</SessionTimeout>
  <ConnectionPoolSize>100</ConnectionPoolSize>
</ConfigurationSettings>
```

If the Analysis Services instance for which you are configuring HTTP access is located on the local computer and installed as a default instance, there is no reason to change this setting. Otherwise, you must specify the server name (for example, <ServerName> EXACT-SRV01</ServerName>). For a server that is installed as a named instance, be sure to append the instance name (for example, <ServerName> EXACT-SRV01\\Tabular</ServerName>).

By default, Analysis Services listens on TCP/IP port 2383. If you installed Analysis Services as the default instance, you do not need to specify any port in <ServerName> because Analysis Services knows how to listen on port 2383 automatically. However, you do need to allow inbound connections to that port in Windows Firewall.

If you configured a named or default instance of Analysis Services to listen on a fixed port, you must add the port number to the server name (for example, <ServerName> EXACT-SRV01:55555</ServerName>) and you must allow inbound connections in Windows Firewall to that port.

CHAPTER 12

SSRS installation

1. Go on Microsoft website and download SSRS

<https://www.microsoft.com/en-us/download/details.aspx?id=55252>

2. Launch the installation



Fig. 1: *Image - SSRS installation home page*

3. Select the License

The developer license cannot be used in production but gives access to all features



Fig. 2: Image - SSRS installation License

then read and accept the license

4. Select the SSRS service to install

5. click on configure SSRS to finish the installation

Configure SSRS

1. Launch the Web service

go on the Web Service URL screen, update the information if needed and click on apply to deploy the ReportingServer

2. Configure the database

Go on the Database screen and click and change Database, then adapt the database url and credentials c

3. Launch the Web Portal

go on the Web Portal URL screen, update the information if needed and click on apply to deploy



Fig. 3: *Image - SSRS installation service*

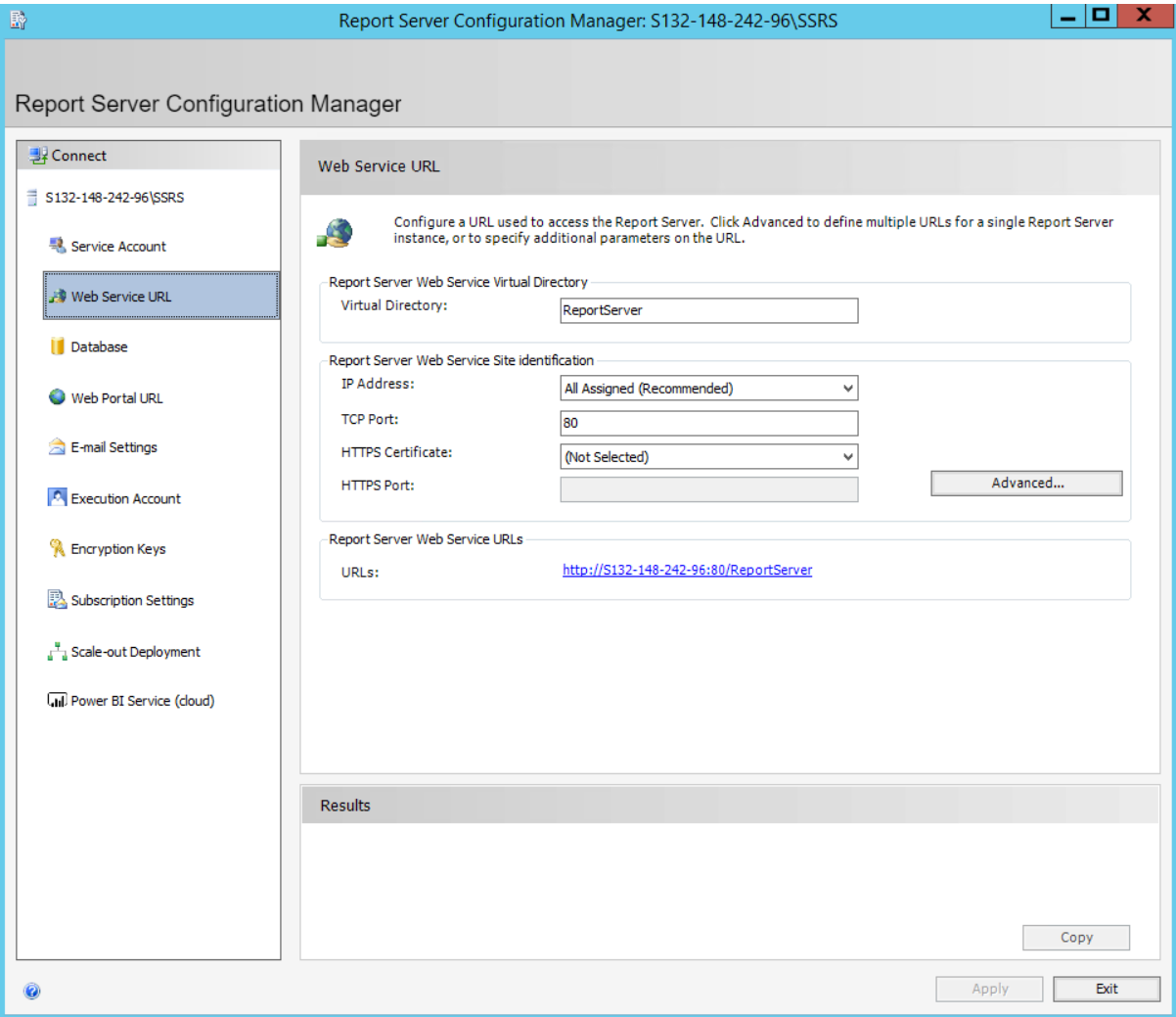


Fig. 4: Image - SSRS Web service configuration service

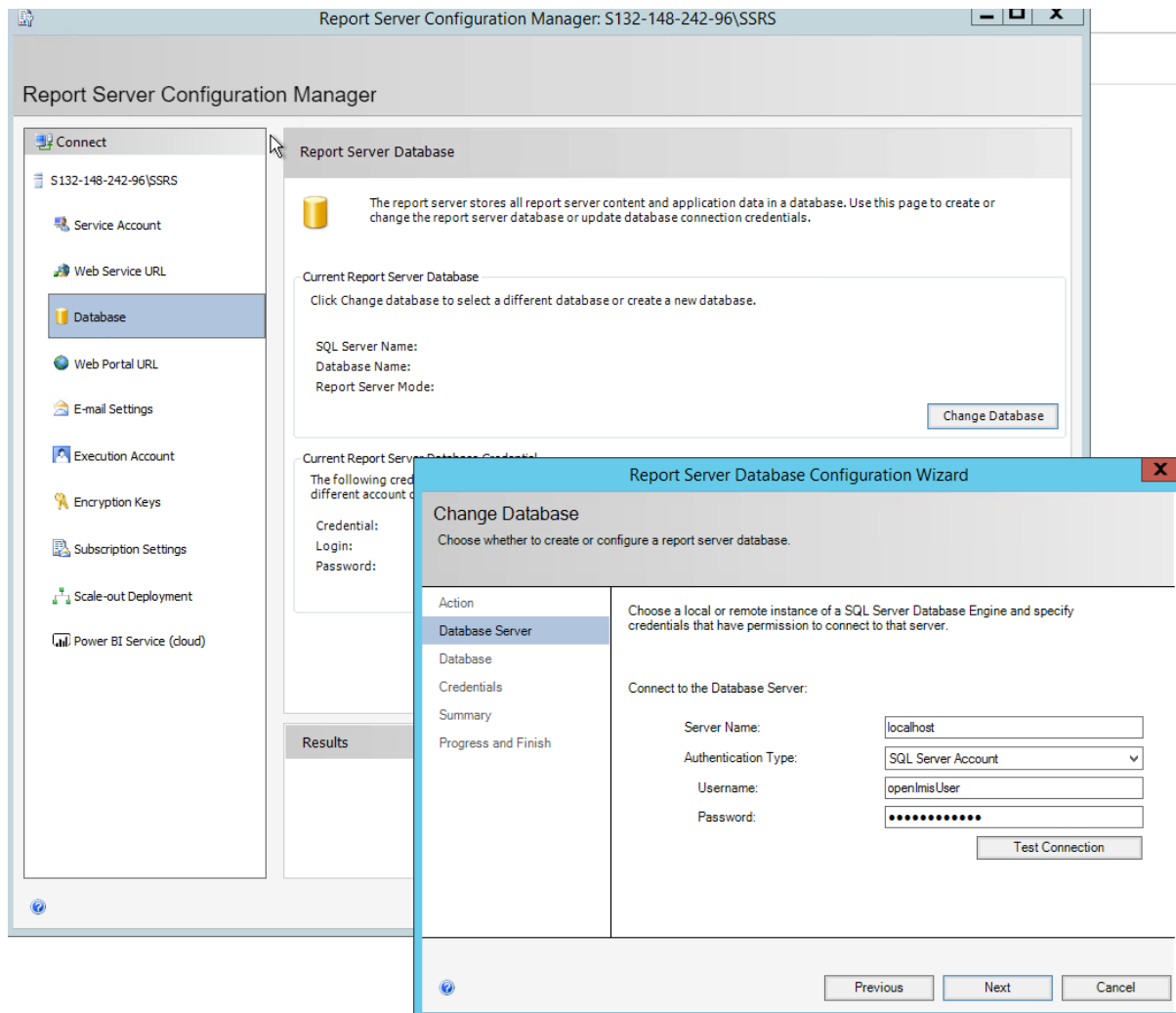


Fig. 5: Image - SSRS Database configuration service

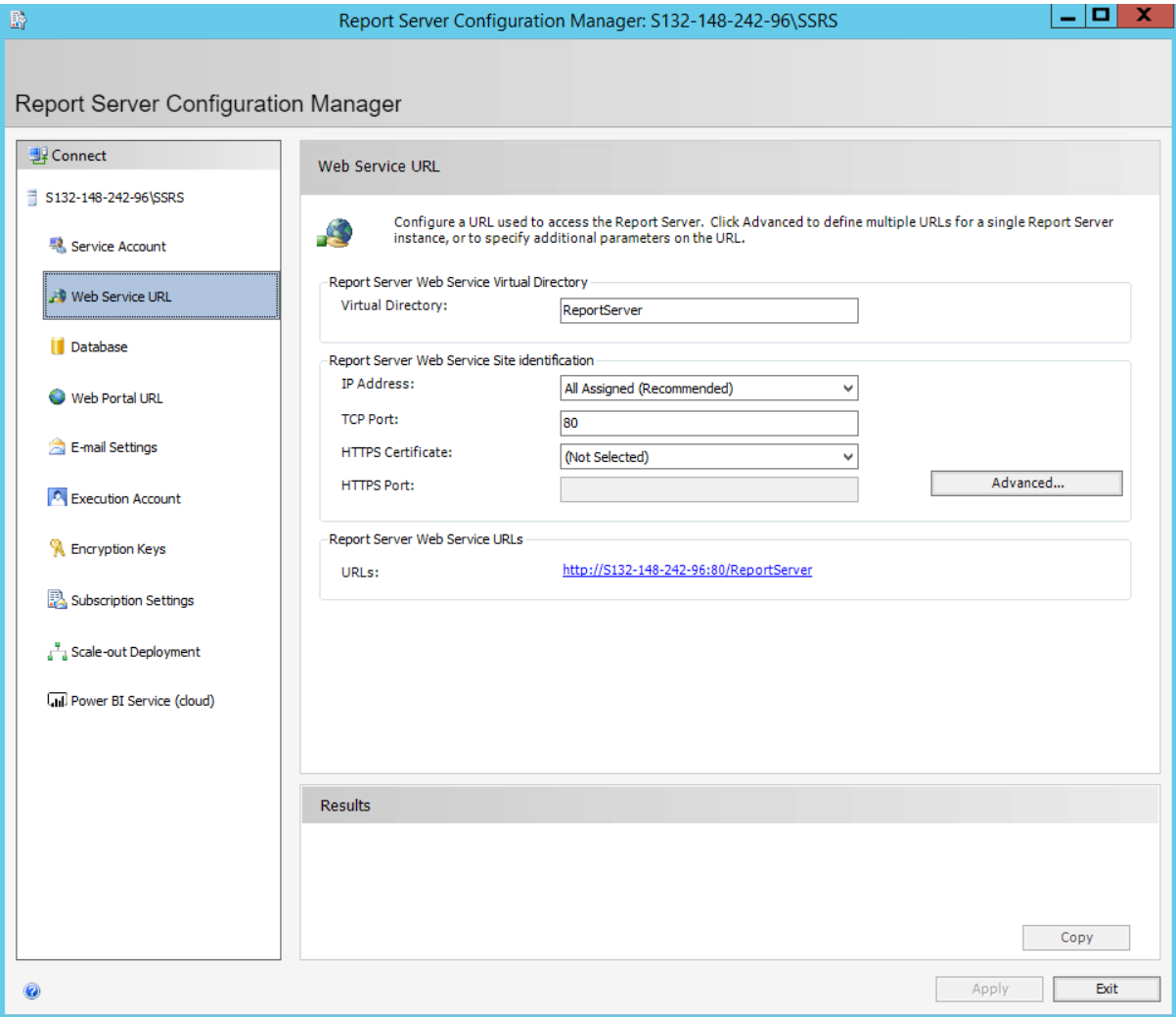


Fig. 6: Image - SSRS Web GUI configuration service

CHAPTER 13

Execute SSIS

Once both the SSIS and SSAS packages are deployed successfully, it's time to start the ETL process. To start the ETL Process, follow the instructions below.

1. Navigate to the folder where the SSIS package was installed. Find the file named "IMISDW" and double click the package to begin the process(*Image - Run SSIS*).
2. This process might take a while to finish depending on the data volume. Once the process is completed successfully, the SSAS package is now ready for the reporting(*Image - SSIS Results*).

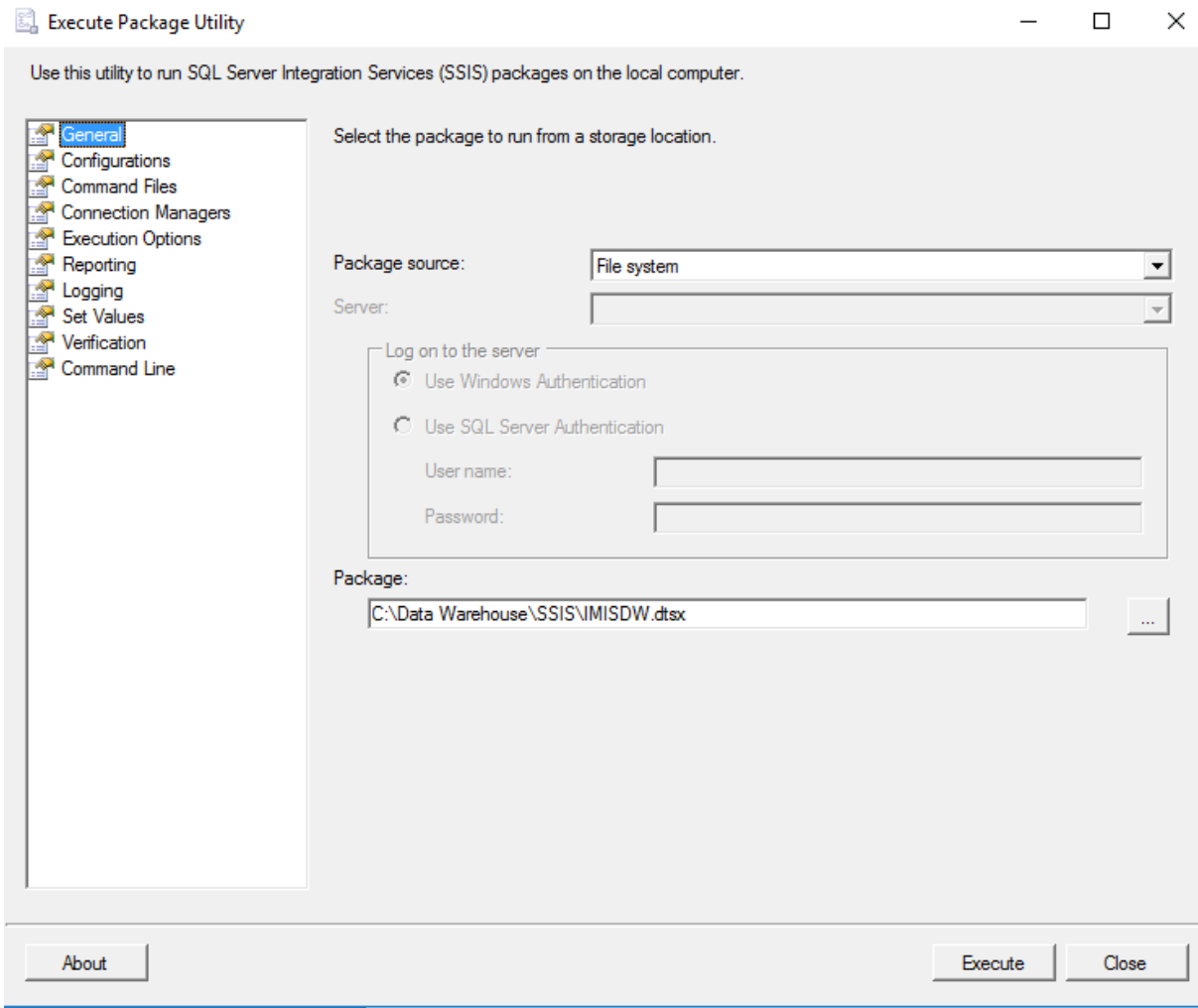


Fig. 1: Image - Run SSIS

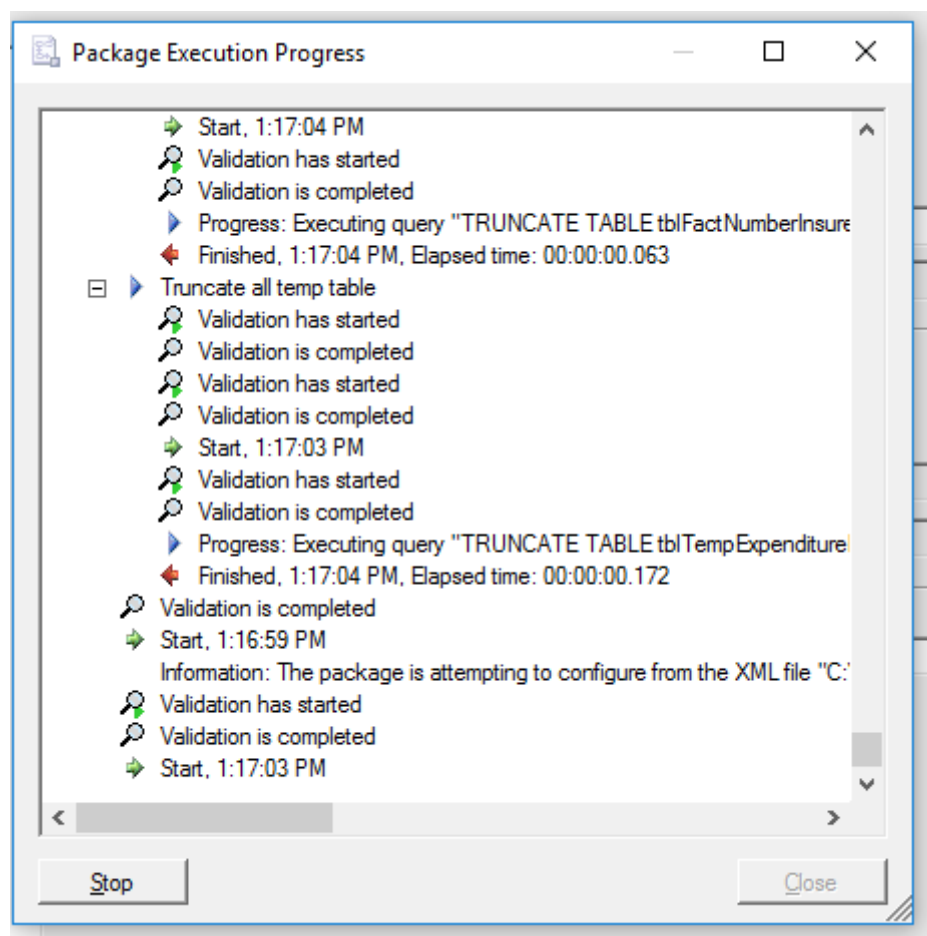


Fig. 2: Image - SSIS Results