

TARGIT Back-end Administrator

Level: Technical, Intermediate



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Introduction

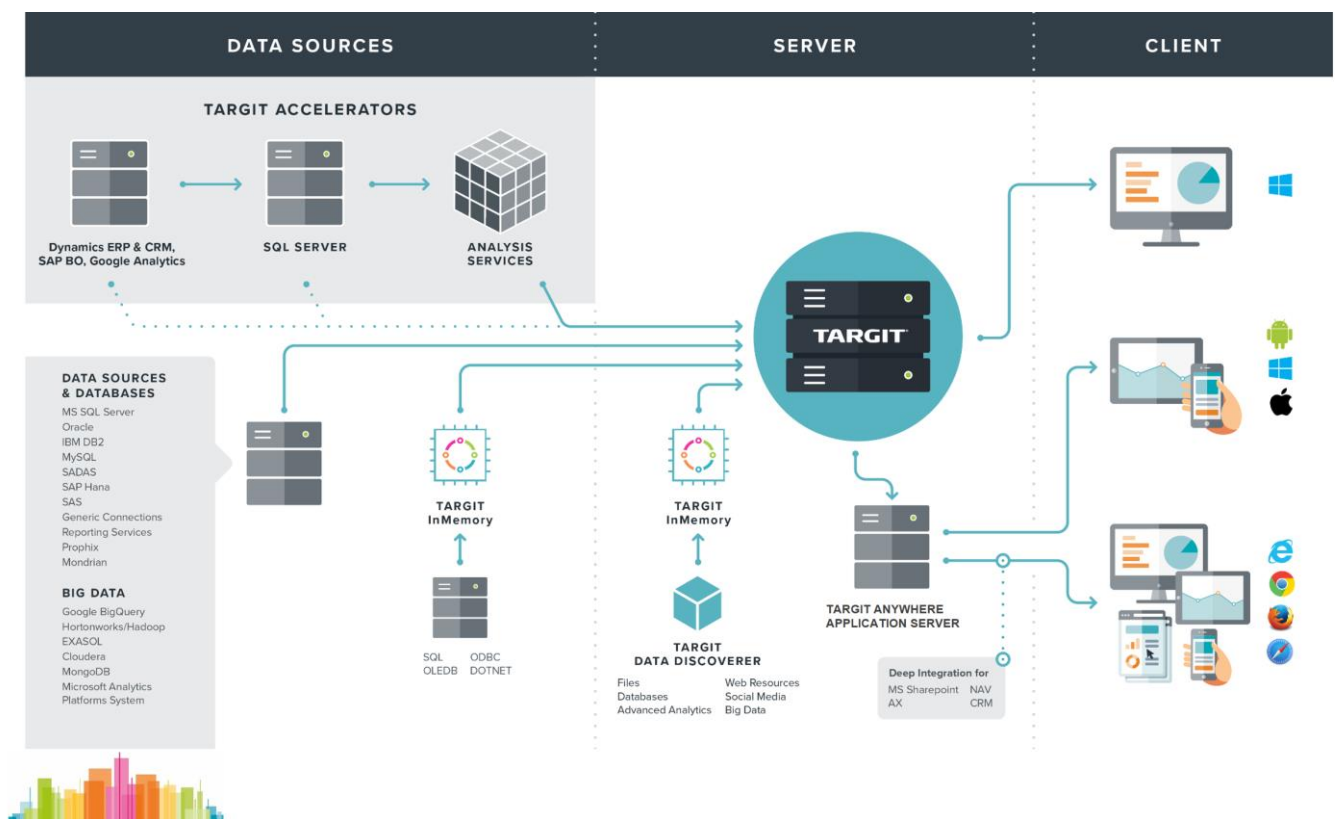
The TARGIT Back-end Administrator course has been developed for professional TARGIT users, whose daily contact with the TARGIT Decision Suite is from a more technical and administrative point of view and less from the end-user's point of view.

Attendees on this course would typically have a responsibility to keep a TARGIT solution healthy and up and running.

The goal of this course is to provide an overview of the various components in a typical TARGIT solution, and insight on how to maintain this solution in a responsible way.

Architecture Overview

The architecture of a TARGIT solution is best illustrated as a structure with multiple levels or tiers.



Starting from the leftmost tier, a typical solution will contain these tiers:

The Data Sources tier

A company's source systems are located in this tier. Examples of source systems might be NAVISION, AXAPTA, CRM systems, Excel sheets and log files. Source data are retrieved from the ERP tier.

Data Warehouses, suitable for analytical and reporting purposes, are designed and built for this tier. The purpose is to collect, to uniform and to store data from the ERP tier.

Most often, you will find multiple Data Warehouses in this tier: Multiple relational Data Warehouses and one or more multidimensional Data Warehouses.

The TARGIT Server (in the Server tier) is capable of communicating with all common Data Warehouse platforms. However, most TARGIT solutions have been implemented in a MS SQL Server environment on top of a MS SQL Server Analysis Services multidimensional Data Warehouse or in an environment with TARGIT's native InMemory Data Warehouse.

The Server tier

This is a central tier in a TARGIT solution. The TARGIT Server is located in the Server tier. The TARGIT Server handles all communication and distribution of data between the Data Warehouse tier and the Client tier.

A Microsoft Internet Information Services must be running on the server tier as well to enable TARGIT Anywhere Server functionality. TARGIT Anywhere Server functionality includes working with the browser based TARGIT Anywhere client and Mobile clients.

TARGIT Anywhere Server is also a requirement for so-called *deep integrations* with various ERP systems.

TARGIT Data Discoverer is a component running on the TARGIT server that enable end-users to work with ad-hoc data sources, e.g. data in Excel documents or online data sources.

The Client tier

The Client tier is the top most tier in a TARGIT Solution. The standard end-user will be working with the analytical and reporting clients of this tier. The administrative client, the TARGIT Management client, is also part of this tier.

The TARGIT Windows client is the tool you need if your role is to design analyses and reports for yourself or for others to use. While the TARGIT Windows client is mainly a Designer tool, it can also be used for standard Consumer purposes.

The browser based client, the Anywhere client, and the mobile platform clients are purely Consumer clients. An end-user with a Consumer client will take full advantage of the power of stored analyses and reports, but will lack the ability to design new TARGIT documents.

Lesson 1: Installation

In this lesson we will install the most commonly used components of the TARGIT Decision Suite and we will have a look at the various add ons and components and their relevance for a running TARGIT solution.

To get TARGIT up and running, the minimum required components would be:

- The TARGIT Server
- The TARGIT Windows Client

Furthermore, in this lesson, we will look into how to enable the TARGIT Anywhere platform, so end-users will have the additional to access TARGIT data through the browser based TARGIT Anywhere client.

Server side installation

The TARGIT Server is the central part of a TARGIT installation. When you install the TARGIT Server it is strongly recommended that you at least also install the TARGIT Client on the same physical machine. From an administrative point of view, it is much easier to have access to both if you should do a Remote Desktop connection to physical machine.

The TARGIT Client, apart from being the designer tool for TARGIT documents, it also provides the log in shortcut to the administrative interface of the TARGIT Server.

Physical server Requirements

A 64-bit Microsoft Windows Operating System is required for TARGIT Decision Suite.

The TARGIT Server will need a Data Warehouse to be connected to, and typically, this would be a MS SQL Server including Analysis Services. But it might also be a TARGIT InMemory database, e.g. created from TARGIT Data Discovery.

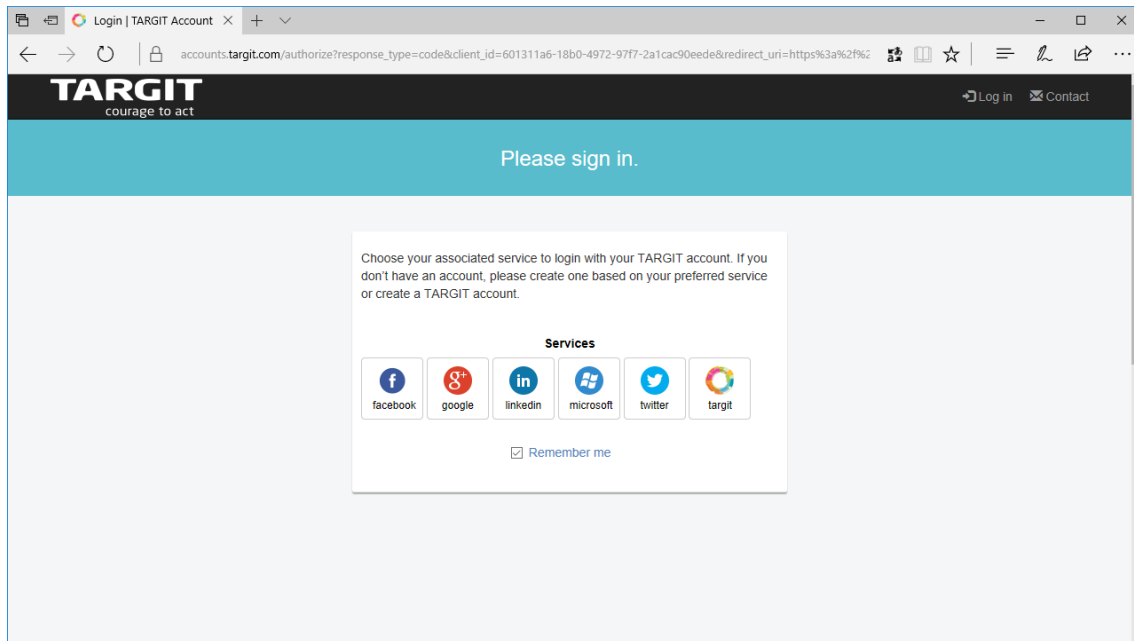
The Data Warehouse does not need to be stored on the same physical machine as the TARGIT Server. In a small setup, e.g. a development setup, all components, SQL Server, Analysis Services , TARGIT InMemory and TARGIT Server may be installed on the same physical machine and still provide a reasonable performance.

These guidelines describe how to install a standard TARGIT Decision Suite demo installation. The demo installation is a 30 days' time limited fully functional TARGIT Decision Suite, including a comprehensive set of demo data. For most TARGIT University courses, the demo installation is a requirement to participate in the course.

TARGIT Portal login

Please notice that in order to complete the following steps, you must be registered at TARGIT and must have received a TARGIT Portal login.

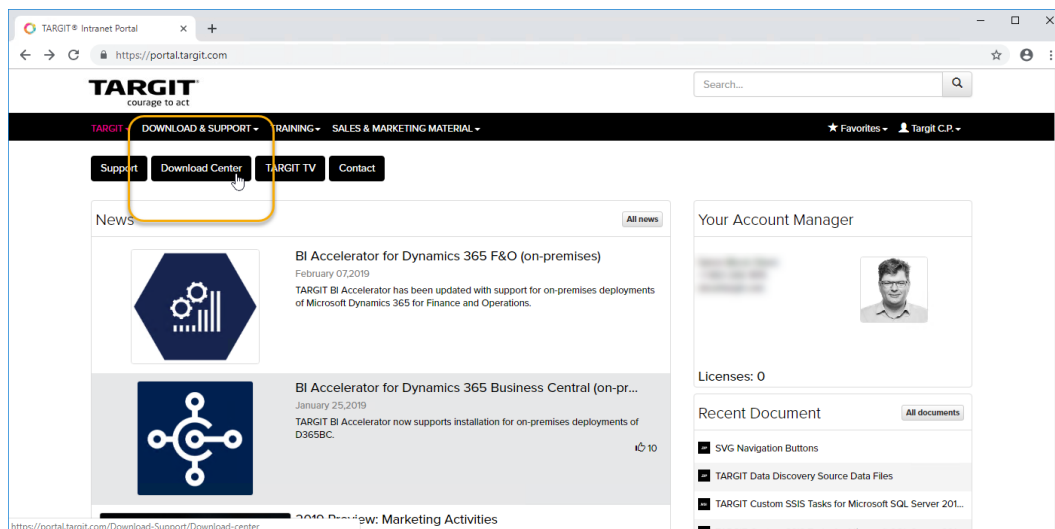
Open a web browser and go to <http://portal.targit.com>.



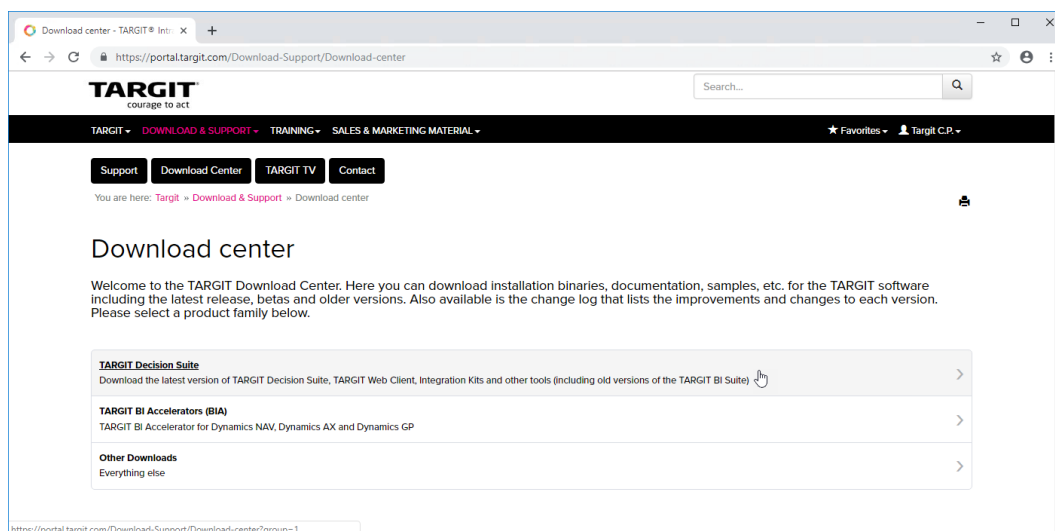
Use your preferred authentication method. If this is the first time you try to log on to the portal, you must register yourself with a minimum number of information entries. Most important is your *associated Company e-mail*, which is the one that must be registered with TARGIT beforehand.

Download center

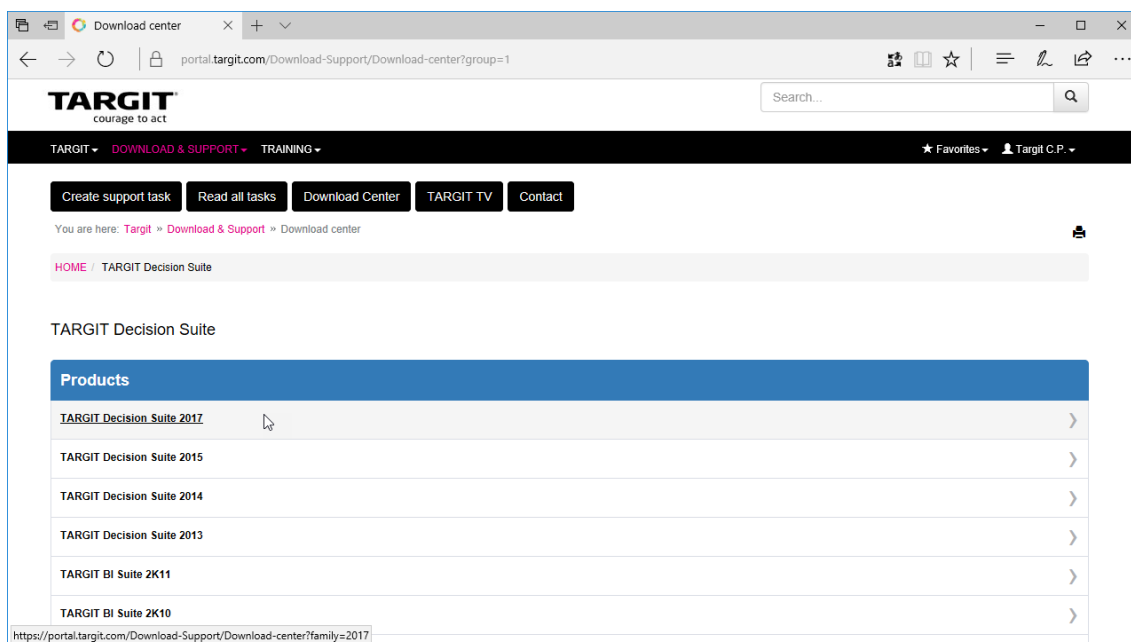
Once logged in, go to the “Download Center”:



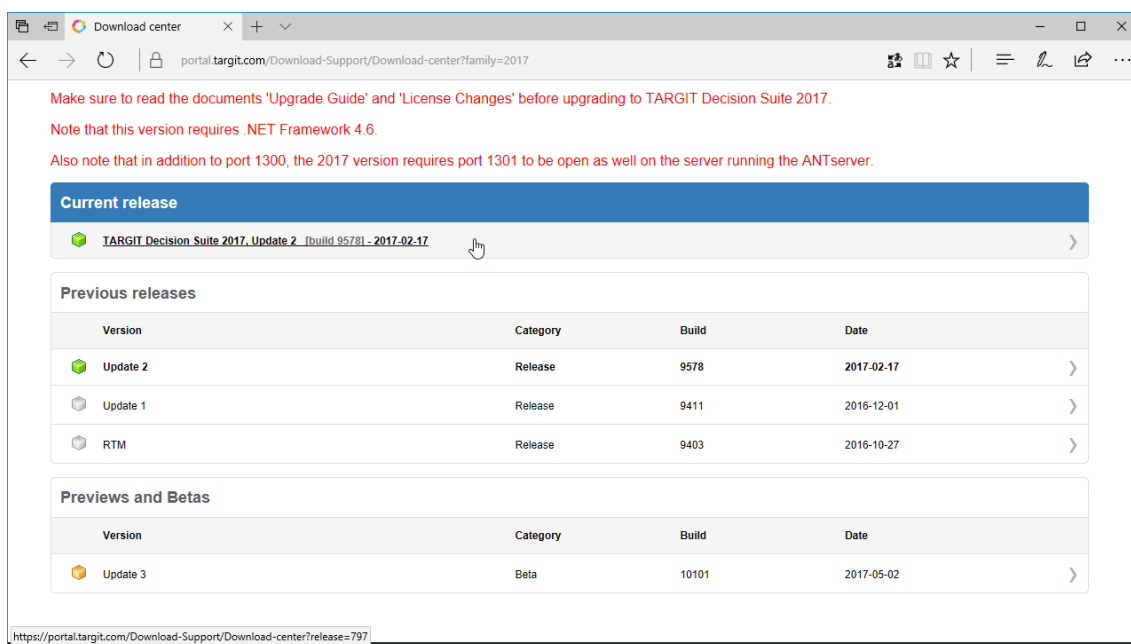
In the Download Center, select *TARGIT Decision Suite*:



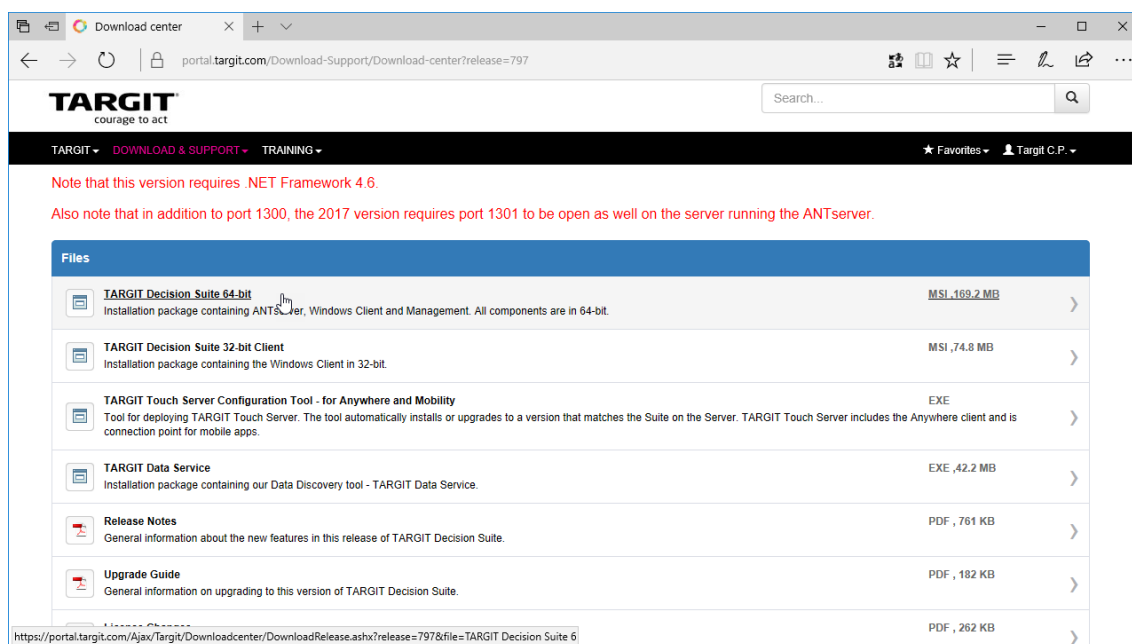
Select the appropriate product version, usually the latest version unless otherwise instructed:



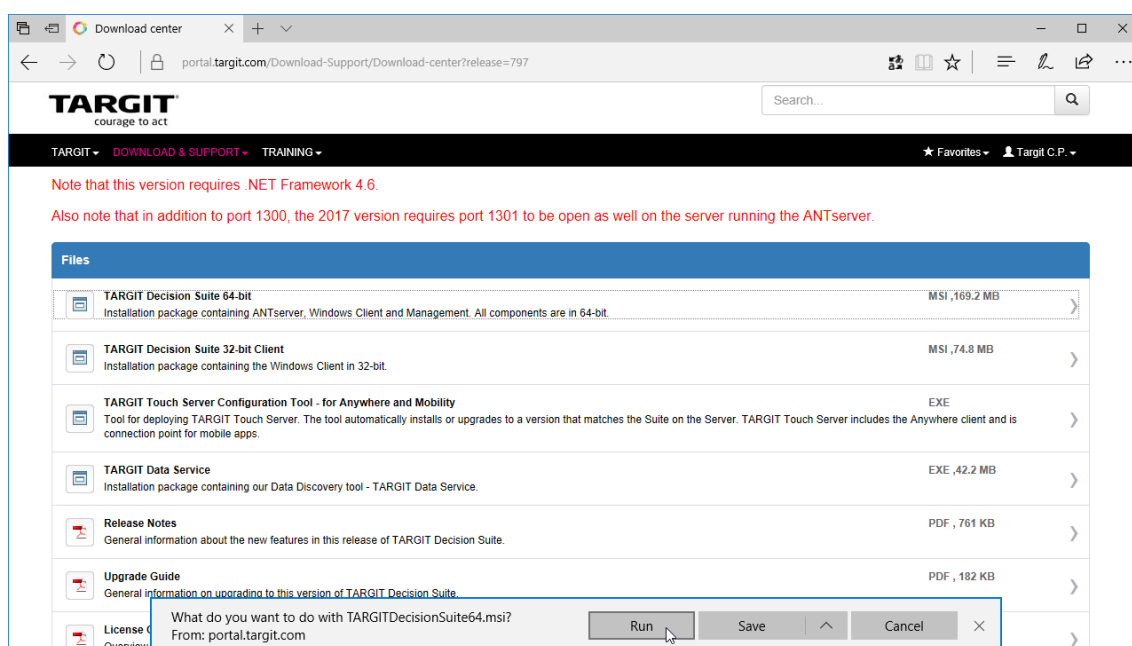
Select the appropriate release version, usually the latest release unless otherwise instructed:



In the Download section, click *TARGET Decision Suite 64-bit* to start downloading and running the installation files:

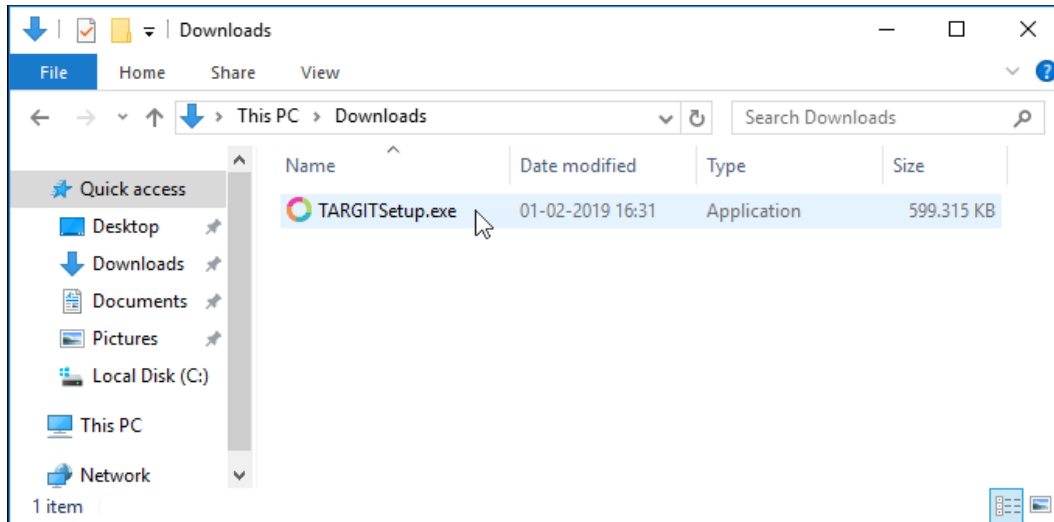


Run the installation when prompted to do so:

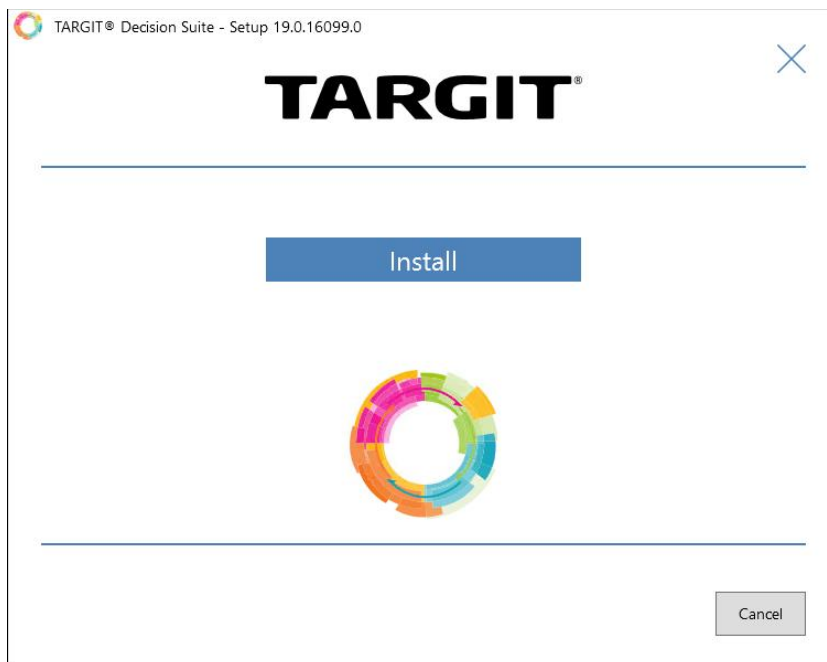


Running TARGITSetup.exe

Once you have downloaded the TARGITSetup.exe file, run it to start the installation of the TARGIT Decision Suite.

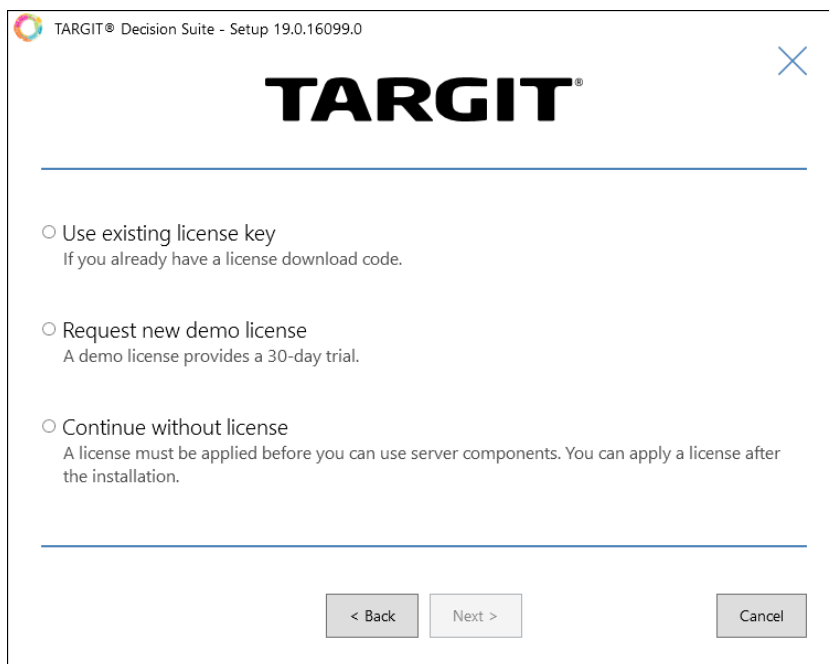


The installation wizard will take you through a number of steps after you click “Install”.



TARGETIT will not run without a license. You can use the latter option, “Continue without license”, if you plan to supply the license information after the installation, or in case you just need to install one of the non-server components, e.g. the TARGETIT Client.

To obtain a 30-days demo license, the next step will ask you a few personal details, such as name, email, and company.



TARGETIT® Decision Suite - Setup 19.0.16099.0

TARGETIT®

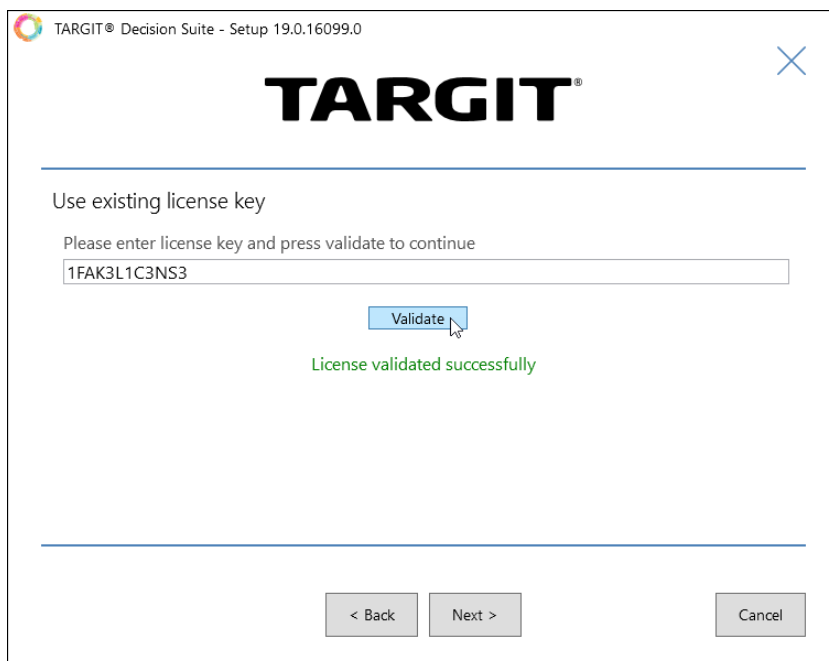
☐ Use existing license key
If you already have a license download code.

☐ Request new demo license
A demo license provides a 30-day trial.

☐ Continue without license
A license must be applied before you can use server components. You can apply a license after the installation.

< Back Next > Cancel

Otherwise, if you already obtained a license code, you can validate it right away.



TARGETIT® Decision Suite - Setup 19.0.16099.0

TARGETIT®

Use existing license key

Please enter license key and press validate to continue

1FAK3L1C3NS3

Validate

License validated successfully

< Back Next > Cancel

Normally, you would just install the TARGIT Decision Suite with its default settings. Uncheck the “Use default...” boxes, if you need to change any of the settings.

TARGIT® Decision Suite - Setup 19.0.16099.0

TARGIT®

☒ Use default general installation paths

Installation path for TARGIT® Decision Suite
C:\Program Files\TARGIT

Installation data path for TARGIT® Decision Suite
C:\ProgramData\TARGIT






< Back Next > Cancel

You can choose which components to install by adding or removing checkmarks. To change the default settings for a component, click the cog icon the right hand side.

TARGIT® Decision Suite - Setup 19.0.16099.0

TARGIT®

Choose components to install

- ☒ TARGIT Server 
- ☒ TARGIT Client 
- ☒ TARGIT Data Discovery 
- ☒ TARGIT InMemory Database 
- ☒ TARGIT InMemory ETL Studio 
- ☒ TARGIT InMemory ETL Scheduler Service 

< Back Install Cancel

E.g. the TARGIT Server default settings may be changed with regard to paths and whether it should install Demo Data.

TARGIT® Decision Suite - Setup 19.0.16099.0

TARGIT®

☒ Use default settings

Installation path for TARGIT Server
C:\Program Files\TARGIT

Installation data path for TARGIT Server
C:\ProgramData\TARGIT

☒ Install Demo Data

< Back Next > Cancel

Once you continue with the “Install” button, all the selected components will be installed.

TARGIT® Decision Suite - Setup 19.0.16099.0

TARGIT®

Installing TARGIT Decision Suite
Please don't turn off the computer. Doing so may result in damage to the operating system.
This process may take from several seconds to several hours to complete.
Missing components will be downloaded from the internet automatically.

Total progress: 55%

Installing "Microsoft Analysis Services ADOMD.NET": 19%

Publishing assembly information
Application Context: Publishing assembly information, Assembly Name:

< Back Next > Cancel

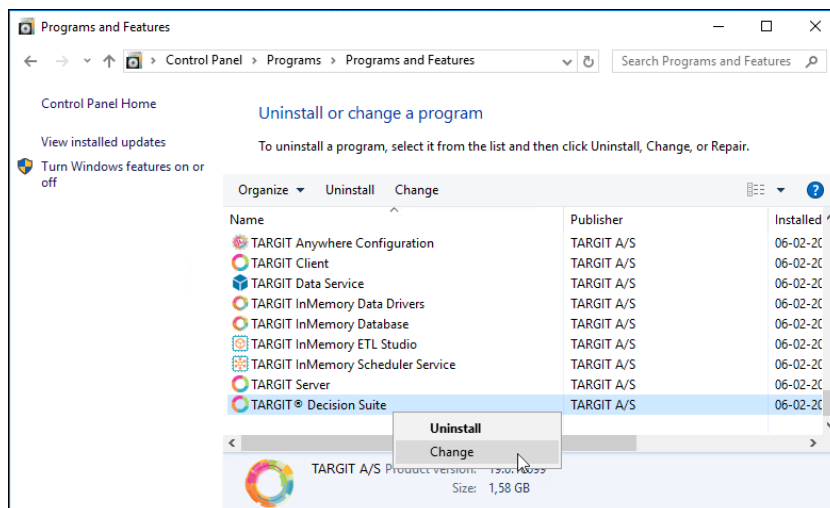
At some point, the installation will have completed.



If you run the TARGITSetup.exe file again, you will get options to Repair, Modify or Remove your current TARGIT installation.

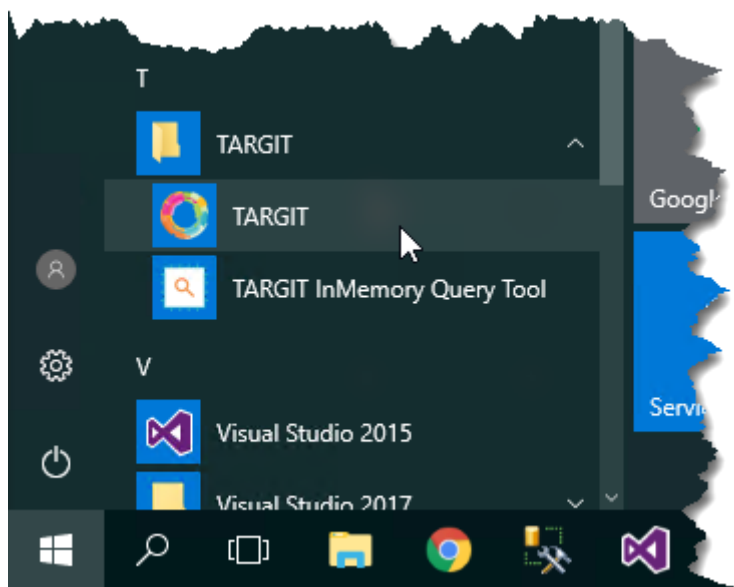


Similar options are available from Windows' Control Center where all installed TARGIT components will be listed. If you choose Uninstall or Change from the "TARGIT Decision Suite" component, you will get the same options as if you re-ran the TARGITSetup.exe file.

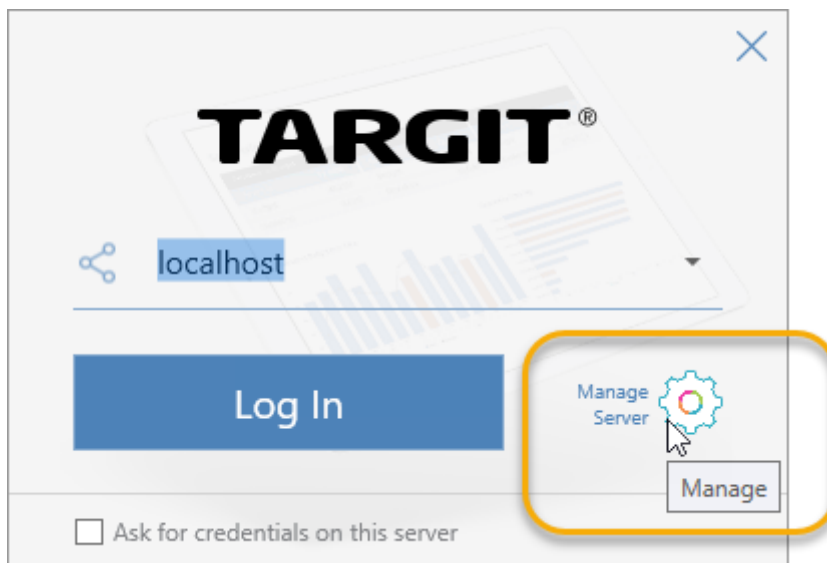


Management client shortcut

On the server, to get access to the Management client, you can now run the installed TARGIT shortcut.



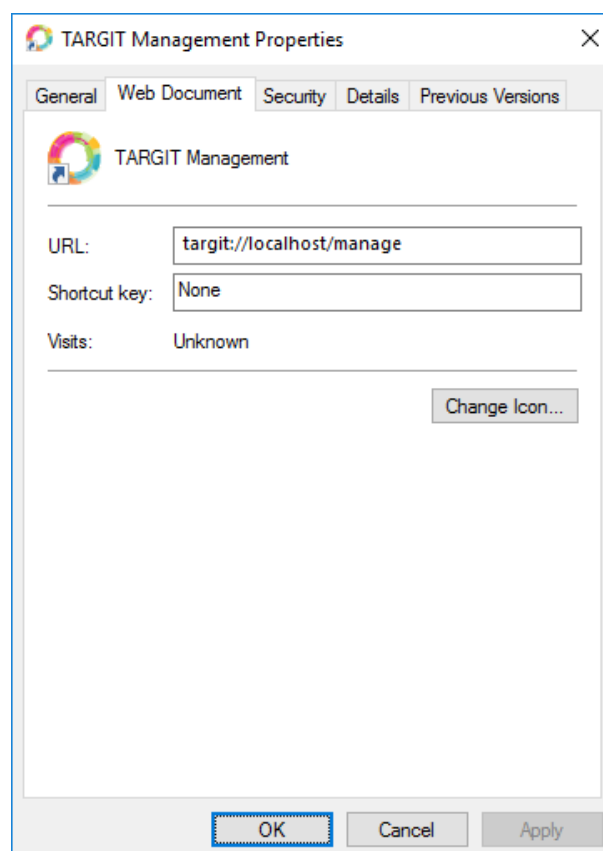
From here, you can manage your server:



Tip: You can create your own custom Management client desktop shortcut with this URL:

- `target://localhost/manage`

Note: Replace [localhost] with the server name or IP address of your server.



Client side installation

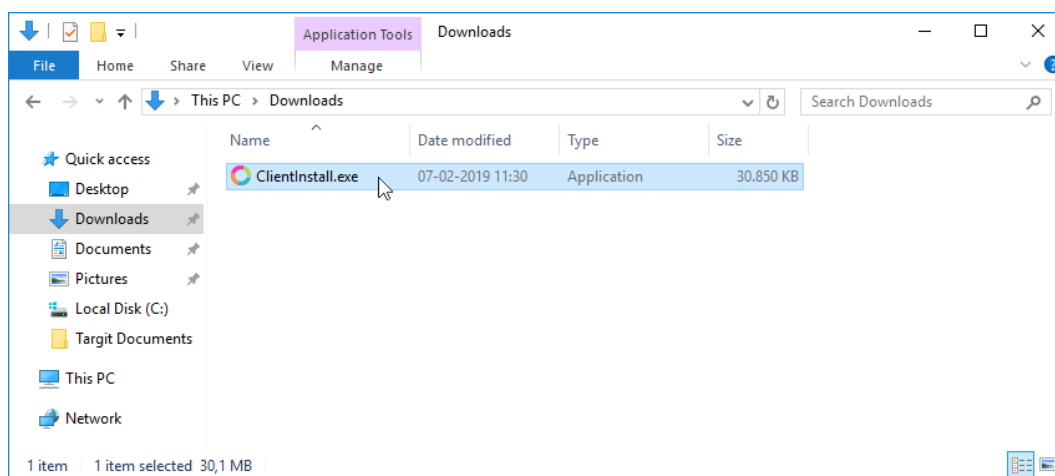
End-users that are supposed to be able to create their own TARGIT documents (analyses, reports etc.) must have access to the TARGIT Windows client.

To do an installation of the client, only, on an end-user's PC, you may direct the end-user to this URL:

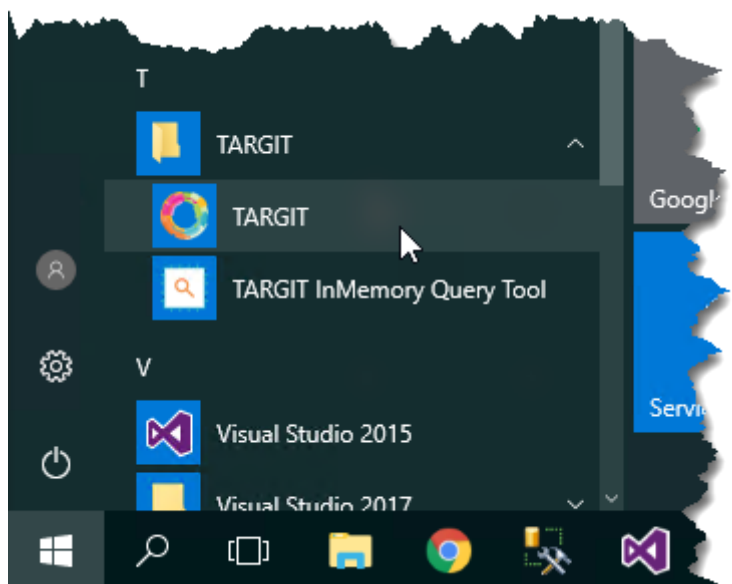
- <https://localhost:1301/install>

Note: Replace [localhost] with the server name or IP address of your server.

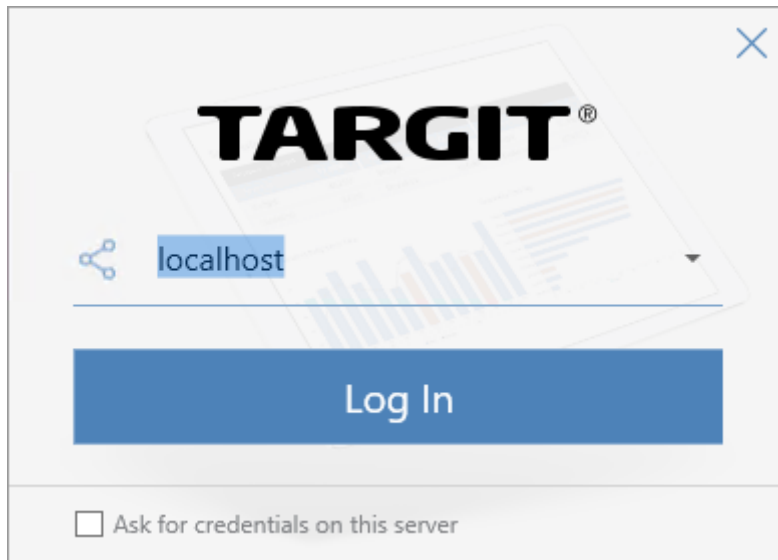
This will download the ClientInstall.exe file.



When you run the downloaded ClientInstall.exe file, it will create a TARGIT shortcut in your Start menu.

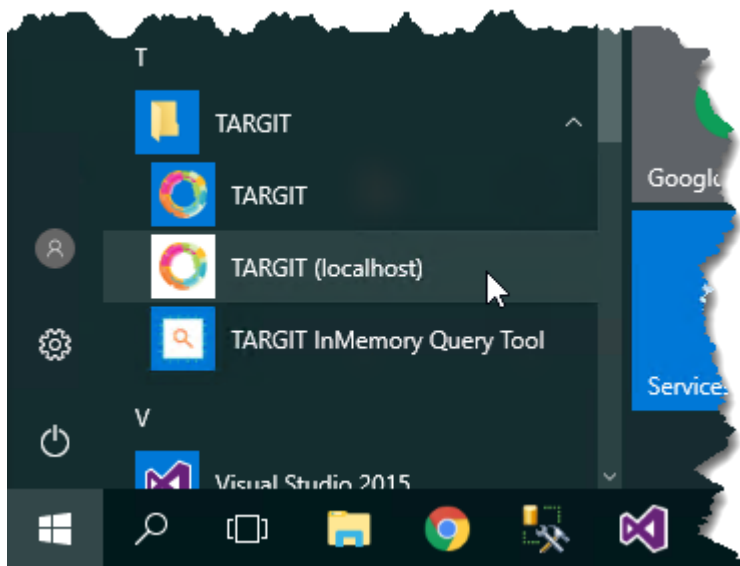


Running the newly installed TARGIT client the first time, log in to the physical machine where the TARGIT Server is installed.



Note: Replace [localhost] with the server name or IP address of your server.

After this first time login to the TARGIT Server, the end-user will now have a named TARGIT shortcut to that specific server. For convenience, it is recommended to use this shortcut for future logins.

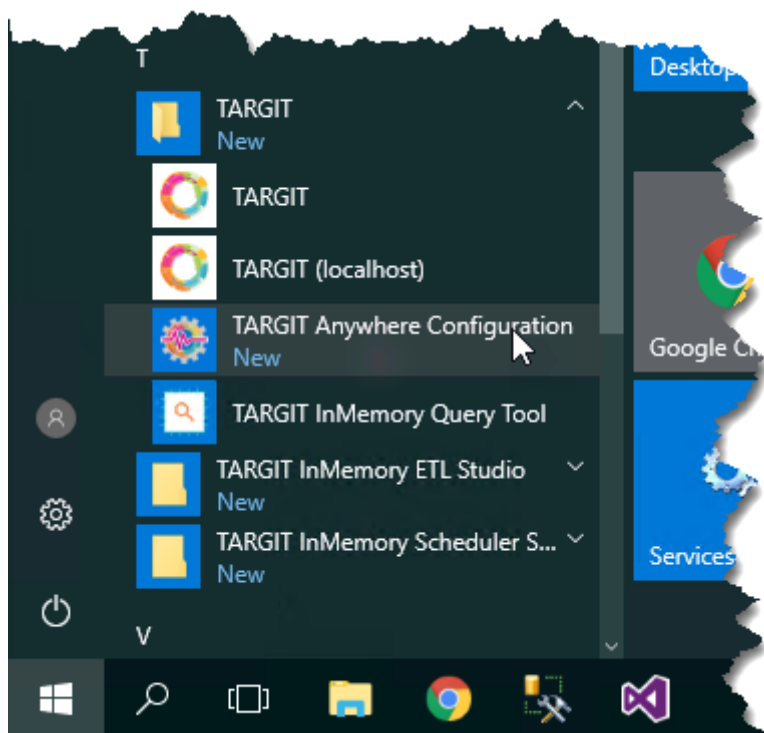


Lesson 2: TARGIT Anywhere Configuration

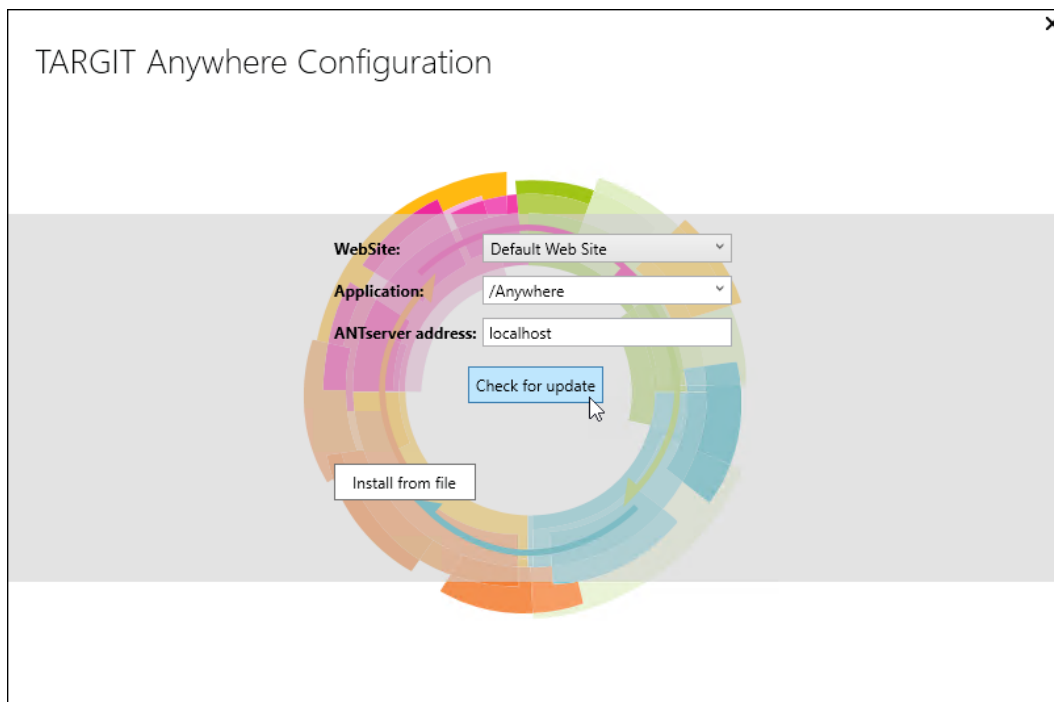
TARGIT Anywhere is the component that enables TARGIT Consumer users to work with TARGIT from a web browser and from mobile platforms.

TARGIT Anywhere is installed as a site on your Microsoft Internet Information Server (IIS). Read the *Installation and Configuration guide* from TARGIT's Download Center for requirements to your IIS. In the following, we will assume that you have an IIS, and that it meets the requirements.

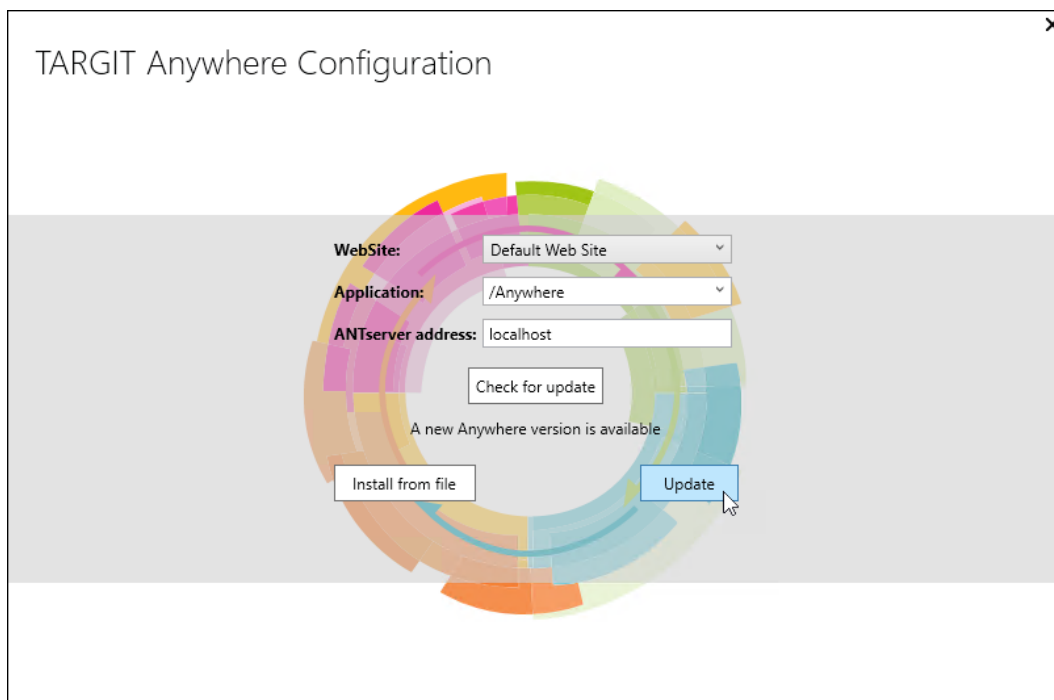
If you went with the default settings for installing TARGIT Decision Suite, you would now also have a *TARGIT Anywhere Configuration* tool in your Start menu.



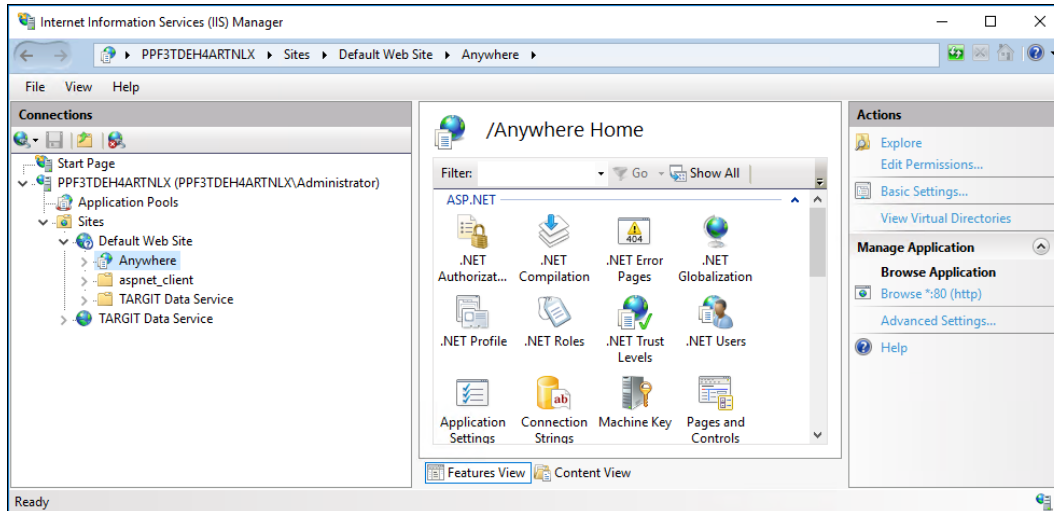
When you run the TARGIT Anywhere Configuration tool, you can do an online check for an update to this component. If you are doing the configuration from a computer that do not have access to the Internet, you can choose the option *Install from file*. The necessary files can be downloaded from the TARGIT Download Center.



Otherwise, it will find an update – and you can click the *Update* button to get it installed.



In your Internet Information Server (IIS) Manager tool, you should see the Anywhere site installed as a Default Web Site.

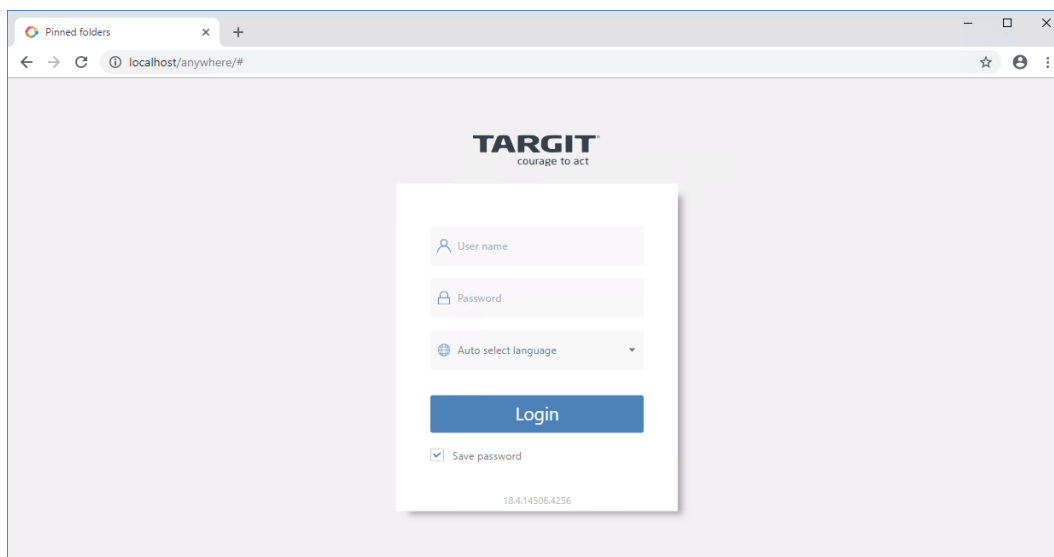


The TARGET Anywhere client

The TARGET Anywhere client is what is known as a *zero footprint* application. I.e. the end user does not need to install anything on the client machine. All the necessary installations are done on the server and the end user will just need to know the correct URL address to type into the Internet Explorer browser.

The address to type in is <http://localhost/anywhere>

This will bring up the TARGET anywhere client as displayed below:



Note: Replace [localhost] with the server name or IP address of your server.

Lesson 3: TARGIT Decision Suite Updates

This lesson will describe how you, as the administrator, may upgrade the various components of the TARGIT Decision Suite.

Before updating your TARGIT Decision Suite you should backup the following directory:

- C:\Program Data\TARGIT

If the upgrade for some reason fails, you will be able to re-install the previous version and manually restore the essential files from your backup.

In addition, of course, the upgrade should be done at a time when it will affect as few people as possible. An upgrade will include at least one restart of the TARGIT services which will close any open client sessions and possible result in loss of any unsaved work.

To upgrade the TARGIT Server you should simply go to the TARGIT Download Center to download and install a newer version of the software.

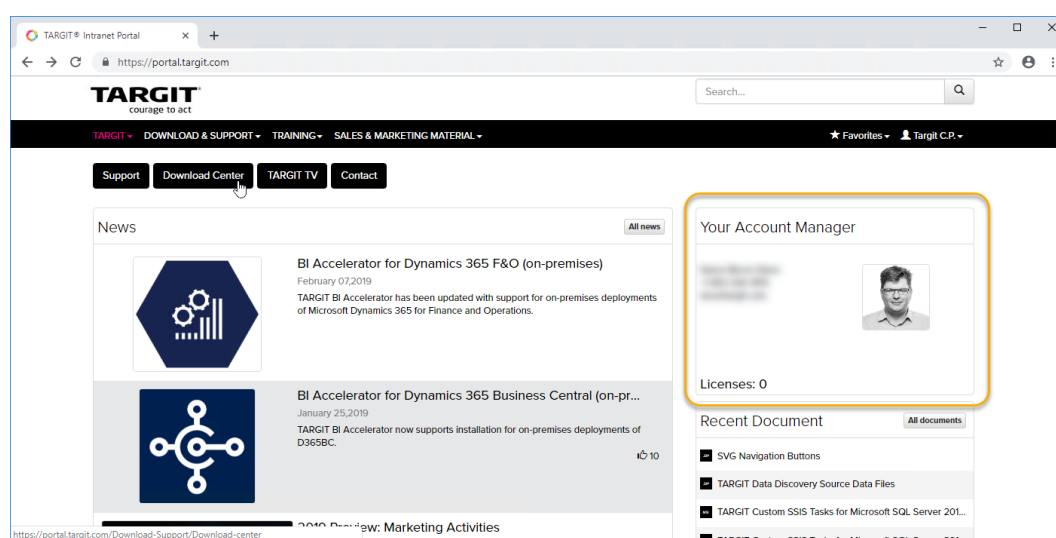


New License key?

If you are planning to update to a newer version *within* the current major version of TARGET, then you do not need a new license key. E.g. if you are updating from a 2018 Update 1 (2018.1) to a 2018 Update 3 (2018.3) you do not need a new license key.

Approximately, once a year TARGET will release a new *major* version, and if you are planning to upgrade from one major version to another major version, then you will need a new, updated license key. E.g. if you are updating from a 2018 Update 4 (2018.4) to a 2019 RTM (2019.0) you do need a new license key.

To get a new, updated license key, please get in contact with your TARGET account manager. Your account manager information is available when you log on to the TARGET portal at <http://portal.targetit.com>.



TARGET client updates

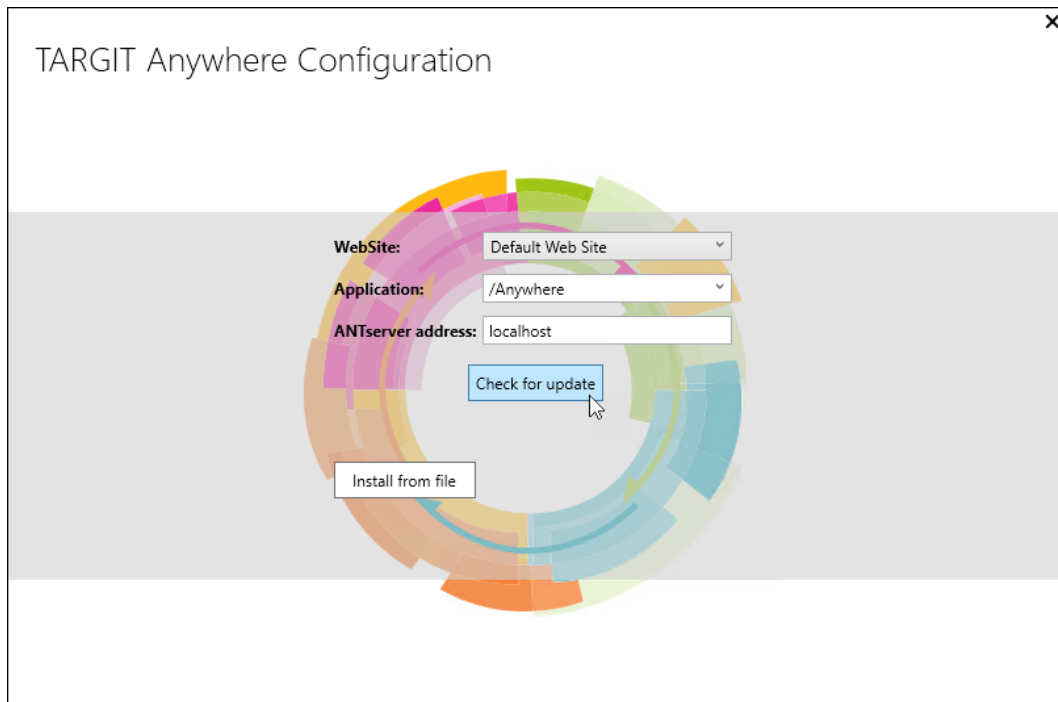
TARGET Windows clients will automatically update.

Every time you log in with a TARGET Windows client it will check the client version number against the server version number. If the server version number is different, the client will automatically initiate download and installation of the new client files directly from the server.

TARGIT Anywhere updates

If you are running TARGIT Anywhere on your TARGIT solution, you will also need to update this component after your TARGIT server has been updated.

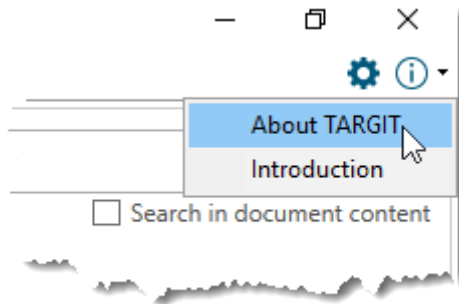
To update TARGIT Anywhere, simply run the *TARGIT Anywhere Configuration* tool again and check for an update.



Verifying a successful upgrade

To verify that the various components have been upgraded to the expected versions you might check the *About* information for each component.

Version info, Windows client:





License information		User information	
License holder	Demo	User name	PPF3TDEH4ARTNLX\Ad...
Company	TARGIT A/S	License level	Designer
Serial number		Client version	2018.4 build 14506
Expiration date	31-12-2019	Server version	2018.4 build 14506
Licensed version	2018		

License agreement for TARGIT software

END USER LICENSE AGREEMENT

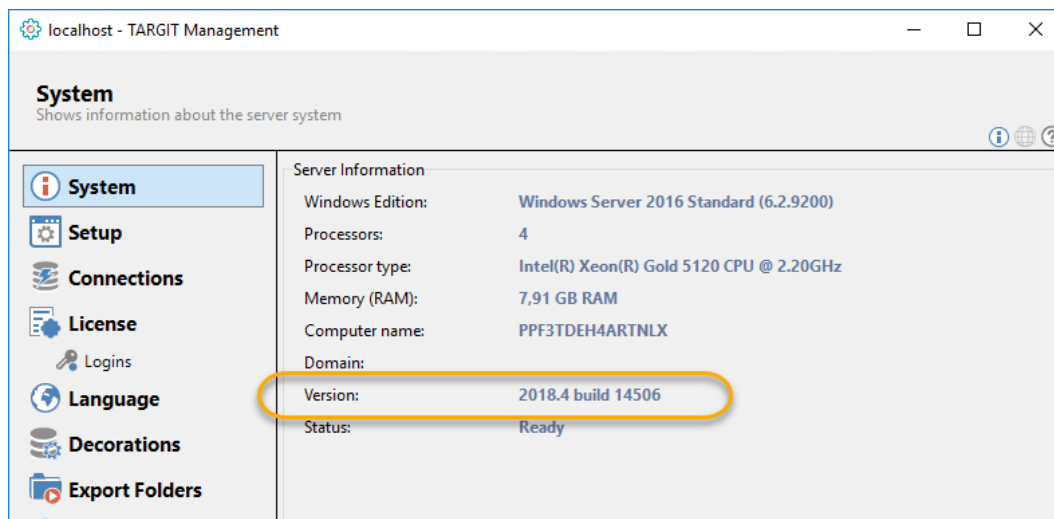
TARGIT Decision Suite

IMPORTANT – PLEASE READ THESE TERMS CAREFULLY

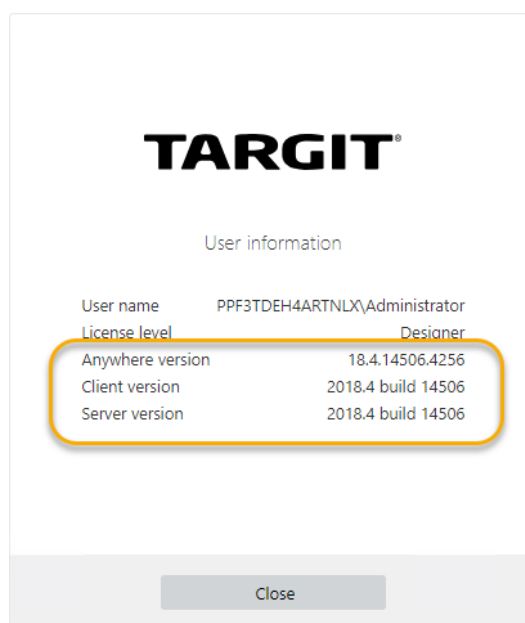
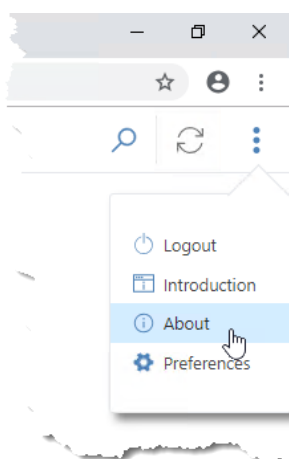
This End User License Agreement (“**Agreement**”) is an agreement entered into between you (the individual or legal entity identified in the TARGIT License Certificate) (“**You**”) and: (i) TARGIT A/S, Gasværksvej 24, 2., DK-9000 Aalborg, Denmark if You acquired the Software outside of the United States;

Close

Version info, TARGIT Management client:



Version info, Anywhere client:



Lesson 4: The TARGIT Management client

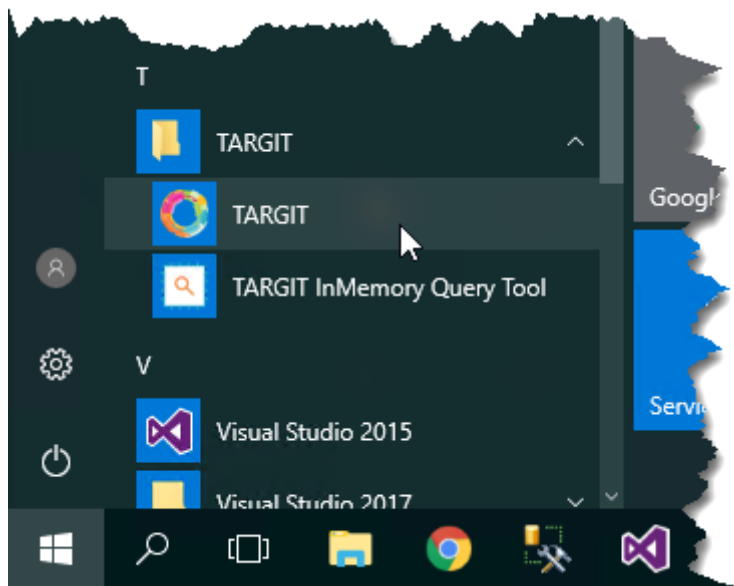
In the previous lesson we installed and upgraded the TARGIT Decision Suite, but only on top of the standard demo data.

In this lesson we will assume that we have already created a fully functional multidimensional Data Warehouse on an SQL Server, and that we now want to establish the connection between this Data Warehouse and the TARGIT Decision Suite.

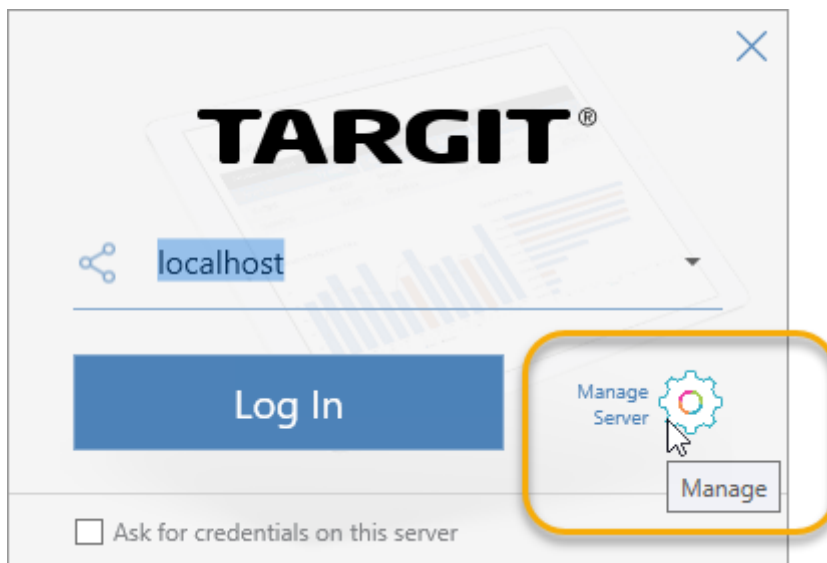
This is done in the backend configuration tool of the TARGIT Decision Suite: The TARGIT Management client.

Backend configuration

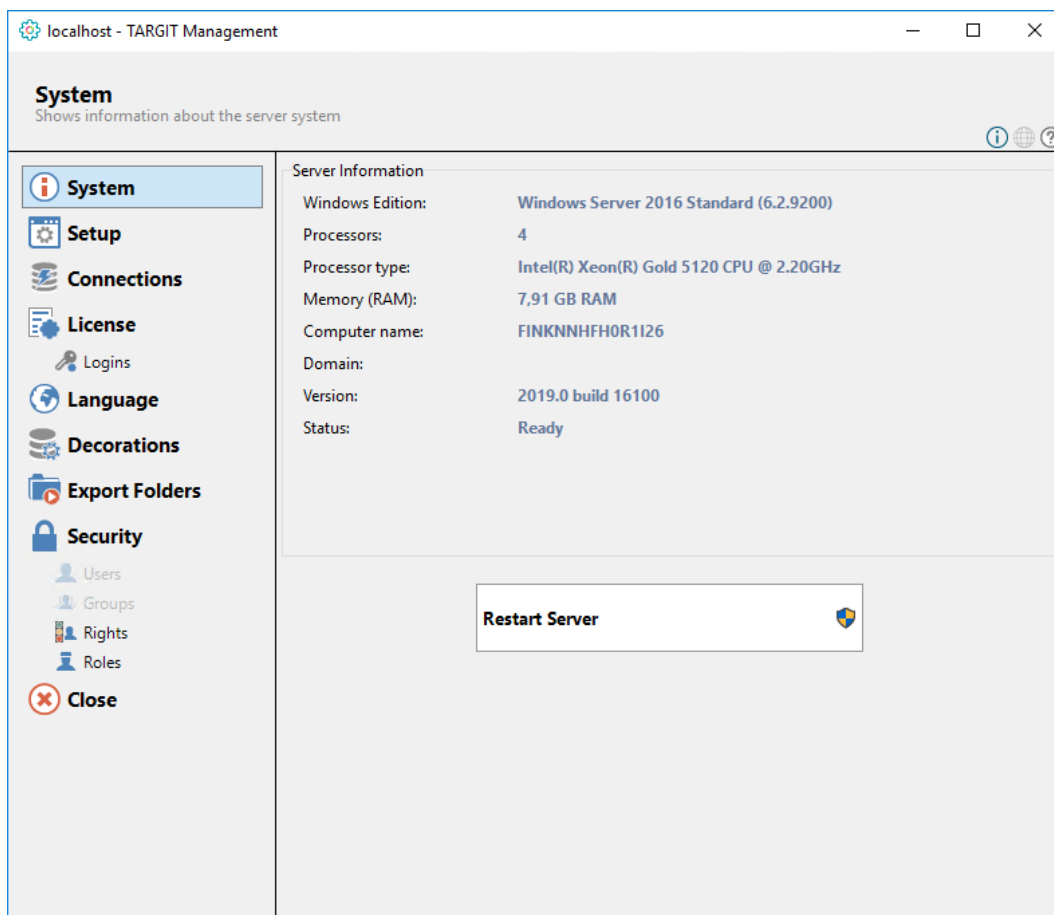
The TARGIT Management client is the client for backend configuration of the TARGIT Decision Suite.



From here, you can manage your server:

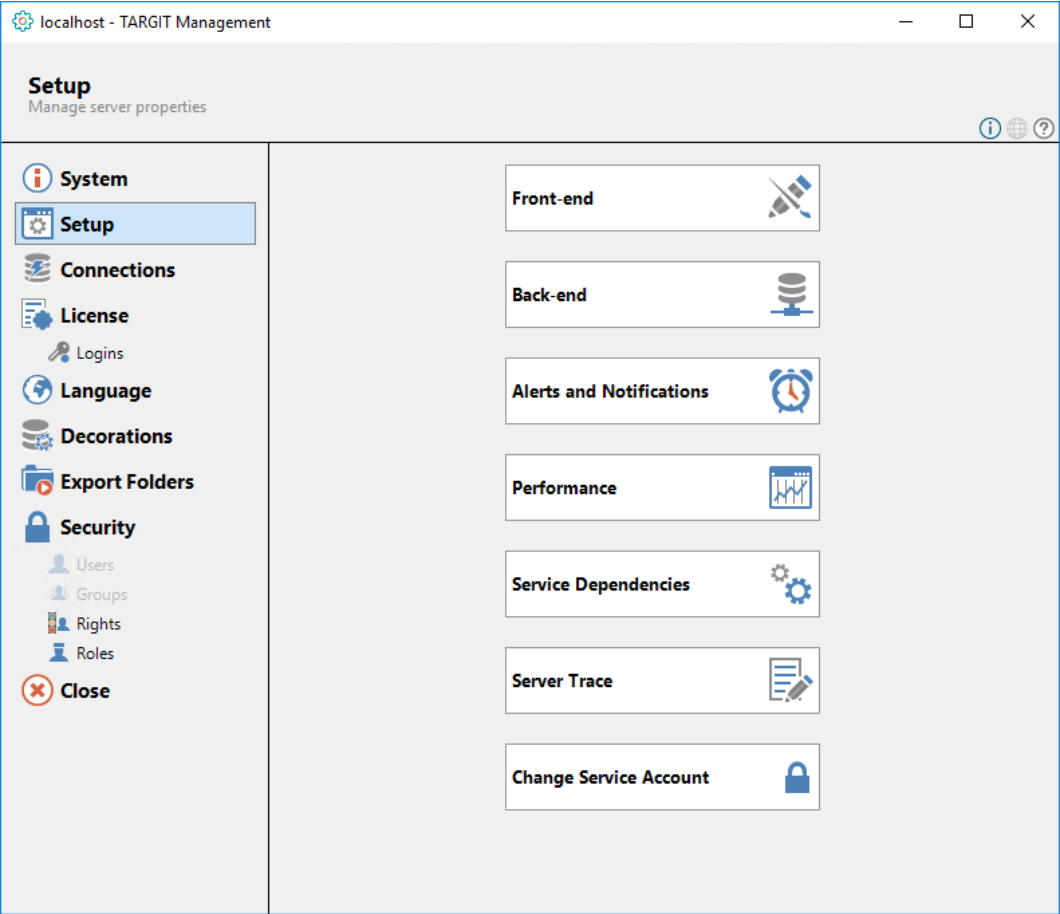


The Management client is made up from a number of tabs. The first tab, *System*, is simply system information and an option to restart the TARGIT Server.



Setup

The *Setup* tab holds a number of settings related to how the TARGIT Server should behave.



A number of miscellaneous setup options are available to configure the TARGIT environment according to the administrator's preferences.

Front-end



You now have these options to customize the look and behavior of the client:

Number format. The default setting is to use client-side number formatting. The thousand separators and decimal separators will then be determined by the regional setting of the client computer. It is also possible to disable this feature and use the default language setting specified on the data warehouse.

Data request cache. These are options for optimizing the client behavior. The following settings may be turned up or down for data request caching:

- **Cache size limit (Mb):** Makes it possible to set the maximum size for the disk space allowed for caching (in Mb, default 1024 Mb).
- **Minimum free disk Space (Mb):** Makes it possible to indicate the minimum size of free disk space required to enable the cache (in Mb, default 256 Mb).
- **File count limit:** Makes it possible to set the maximum number of files in the cache. (Default 1000 files).
- **Idle file expiration (days):** Makes it possible to indicate the number of days an idle cache file is kept before it is deleted (default 10 days).

Note that caching of data requests may be set to on or off on a database connection.

Currency Language. If you use the currency format when formatting numbers this is where you pick the currency language.

Splash screen. The Splash screen is the Introduction screen seen by end-users when they log on to a TARGIT client.

- **Display:** May be set to Disabled, Default or Custom. Information on how to use the Splash screen settings are displayed when hovering the i to the right of the field.
- **URL:** The URL for the custom website to display may be entered.
- **Menu name:** The name of the Menu item that reopens the splash screen may be entered.
- **Enforce display in clients:** End-users have an option to "Do not show me this again". If the display of the splash screen should be enforced (override the end-user setting), a check-mark may be set.

Client update. The default setting is to let TARGIT Windows client update automatically. This will happen the next time an end-user logs on to TARGIT after the TARGIT server has been updated.

- **Shortcut name in Windows Start.** An option to supply custom name to the shortcut that will be created. If nothing is submitted here, the shortcut name will become TARGIT (*servername*).
- **Shortcut icon in Windows Start.** An option to supply custom icon to the shortcut that will be created. If nothing is submitted here, the icon will be the standard TARGIT icon.
- **Redirect to server.** In case you need to install the TARGIT server on a new physical server, you can add the new server name here. The effect is that end-users logging on with the old server name will automatically be redirected to the new server.

Back-end



The Back-end tab gives you these options concerning back-end properties:

TARGIT Management - Back-end Properties

Logging

☐ Log Analysis requests to auxiliary database

☐ Log storyboard requests

Keep data for months (0 is forever)

Online License Update

☒ Enabled

Hour of the day:

Criteria request cache

Cache size limit (Mb):

Minimum free disk space (Mb):

File count limit:

Idle file expiration (days):

Multiple logins

☐ Allow multiple simultaneous logins into Management

OK Cancel

Log Analysis requests to system database. With this option you may log information such as “Who has been logged on to which analysis at what time of the day” etc. The logged information is then perfectly suitable as source data for a new *TARGIT Requests* cube. Before enabling this feature an auxiliary connection must also be made to a designated log database.

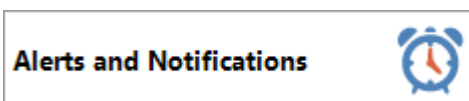
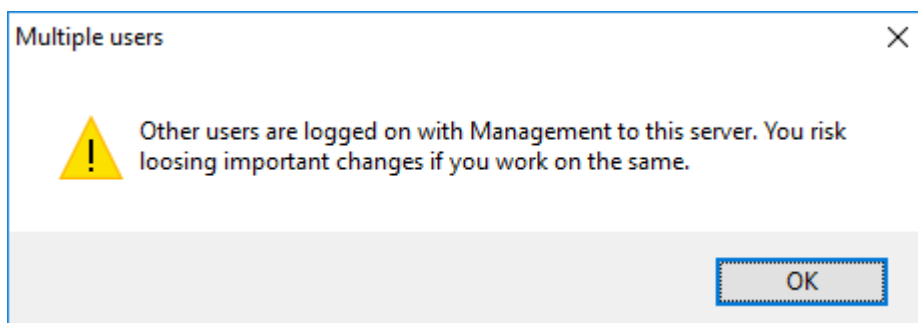
Online License Update. Enabling this option will make the server contact a central TARGIT licensing server to check for any updated license. E.g. if a customer license have been updated with an additional 50 users, the Online License Update will automatically detect and install the new license.

Criteria request cache.

- **Cache size limit (Mb):** Makes it possible to set the maximum size for the disk space allowed for caching (in Mb, default 1024 Mb).
- **Minimum free disk Space (Mb):** Makes it possible to indicate the minimum size of free disk space required to enable the cache (in Mb, default 256 Mb).
- **File count limit:** Makes it possible to set the maximum number of files in the cache. (Default 1000 files).

- **Idle file expiration (days):** Makes it possible to indicate the number of days an idle cache file is kept before it is deleted (default 10 days). Note that caching of criteria requests may be set to on or off on a database connection.
- **Multiple logins.** By default, only one user can log in to the TARGIT Management client at any time. By enabling multiple logins, you override this limitation. Be aware of the risk of multiple users trying to change the same setting at the same time – the last user to save settings may potentially overwrite settings already done by a different user.

If other user are already logged in to the TARGIT Management client on the same server, this is the warning you will see:



This tab gives you the following options:

You must provide the address, e.g. *exchange.company.com*, to an **SMTP server** capable of sending outgoing e-mails.

Depending on the *Administrative Alerts* settings you may then receive more or less critical error messages.

The SMTP Server setting is also required for certain automated tasks such as sending out e-mails from **TARGIT Notifications** and sending out e-mails with attached, **scheduled TARGIT Reports**.

Some mail servers require a fully qualified domain name to be entered in the *From* field. If this field is left blank the sender will appear as *antserver@computername*.



Options in the Performance tab:

The screenshot shows the 'TARGIT Management - Performance' dialog box. It has a title bar with a gear icon, the text 'TARGIT Management - Performan...', and standard window controls. The dialog is divided into several sections:

- Performance**: Contains three spinners: 'Maximum number of active threads' (set to 16), 'Maximum number of Sentinels threads' (set to 2), and 'Maximum number of Scheduler threads' (set to 4).
- Network Load Balancing**: Includes a note: 'Please note that the following options requires multiple ANTservers in a Network Load Balancing environment'. It has an unchecked checkbox 'Enable Network Load Balancing' and a 'Maximum Rejections' spinner set to 1.
- CPU Load**: Has an unchecked checkbox 'Enabled'. If enabled, it would show 'Maximum Load' (95%) and 'Time' (10 seconds).
- Active Queries**: Has an unchecked checkbox 'Enabled'. If enabled, it would show 'Maximum Active Queries' (16).

At the bottom are 'OK' and 'Cancel' buttons.

Maximum number of active threads. This setting determines the number of concurrent threads the TARGIT server will use to serve the clients. Each connected client will use its own thread. An *active* thread is defined as a thread currently processing a request. If the number of actual requests is higher than the number of available threads, the requests are queued.

Performance can be increased by raising the number of concurrent threads, but at the cost of system resources (memory, CPU power, disk access, etc.). If this setting is 0 there is no upper limit to the number of concurrent active threads.

Maximum number of Sentinels threads. The value is used to avoid that all processing power is used on searching for Sentinels.

Network Load Balancing. These settings are relevant only for TARGIT solutions with a large number of concurrent users, and where the TARGIT Server has been found to be the bottleneck. To reduce bottlenecks multiple TARGIT Servers may be configured in a *Network Load Balancing* setup.

End users will automatically be re-directed to the least loaded server in the NLB setup.

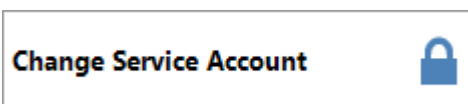


When the computer is restarted, in rare occasions, it may be necessary to force the TARGIT Server to hold back its starting procedure until other services have started. E.g. it may be necessary to put a dependency on the SQL Server Analysis Services service.



The *Server Trace* option enables you to log detailed information about requests into your Event Viewer.

This option should only be enabled for the purpose of troubleshooting errors. Remember to disable again when the problem has been solved – otherwise you would quickly fill up your Event log and possibly also degrade overall system performance.



The TARGIT Server login credentials (e.g. for accessing data on an SQL server) can be changed through *Change Service Account*.

Database connections

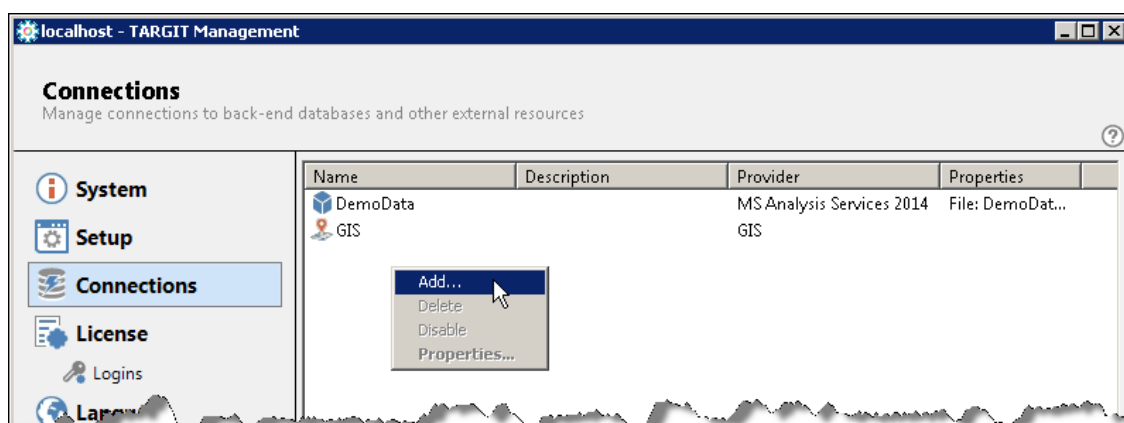
Since the TARGIT Server is the middle tier between end-users and your Data Warehouse, you will also need to configure which databases it should connect to.

Click the *Connections* icon. This is where we define which database(s) we would like the TARGIT Server to connect to.

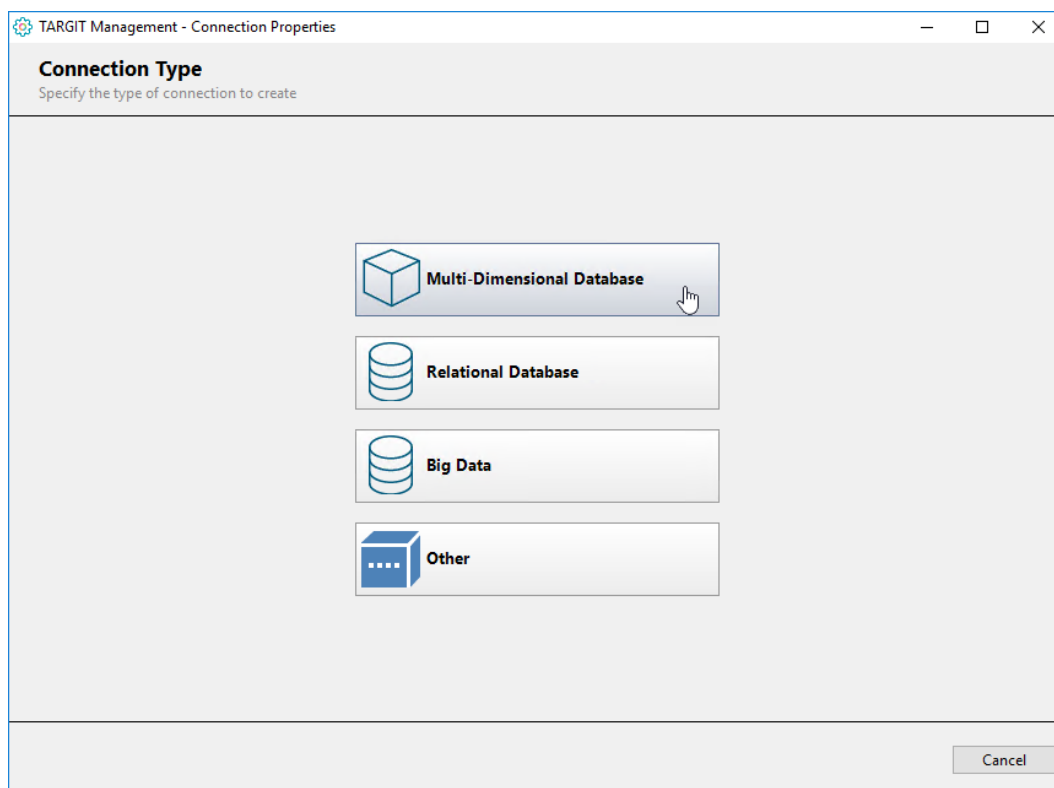
At first, we notice that multiple database connections have already been defined:

- **GIS.** GIS is for *Geographical Information Systems*. If your TARGIT solution includes scalable maps, based on GIS information, you must use this entry to map GIS information to dimension values.
- **DemoData.** This connection provides access to the standard Demo Data (if they were installed). It is also necessary for opening the Demo analyses, dashboards and report.

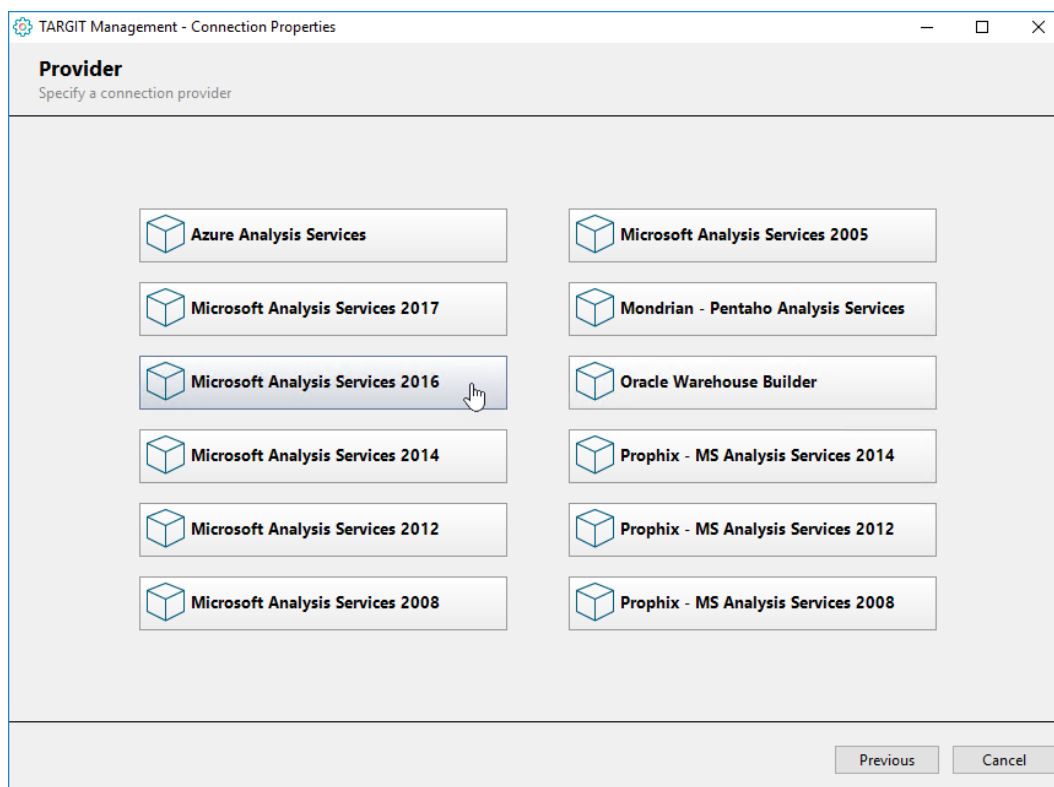
But now we would like to add a new connection. Right click somewhere in the blank area and select *Add*.



The Database Connection wizard appears. Select e.g. the Multi-Dimensional Database option.



Choose database provider. E.g., select the Microsoft Analysis Services 2016 option.



Name the connection e.g. *Training* and click Next.

The screenshot shows the 'Name' tab of the 'TARGIT Management - Connection Properties' dialog. The title bar includes a gear icon and the text 'TARGIT Management - Connection Properties'. Below the title bar, the tab is labeled 'Name' with the instruction 'Enter a unique name and an optional description'. There are two text input fields: 'Name' (containing 'Training') and 'Description' (empty). At the bottom right, there are three buttons: 'Next' (highlighted with a mouse cursor), 'Create', and 'Cancel'.

Next, you have to define the server and database to be used.

The screenshot shows the 'Microsoft Analysis Services 2016 Connection String' tab of the 'TARGIT Management - Connection Properties' dialog. The title bar includes a gear icon and the text 'TARGIT Management - Connection Properties'. Below the title bar, the tab is labeled 'Microsoft Analysis Services 2016 Connection String' with the instruction 'Specify the Connection String'. Under the 'Database' section, there are three options: 'Server' (selected with a radio button), 'Local cube file' (unselected), and 'Database' (unselected). The 'Server' field contains 'localhost'. The 'Database' field is a dropdown menu showing 'TDWD1-MultidimensionalProject'. Below these fields is a 'Connection string' text area containing the string: 'Integrated Security=SSPI;Persist Security Info=False;Data source=localhost;MDX Compatibility=2;MDX Unique Name Style=3'. At the bottom of the dialog, there are four buttons: 'Previous', 'Next' (highlighted with a mouse cursor), 'Create', and 'Cancel'.

Click *Next* to define additional properties. Accept the default settings

TARGIT Management - Connection Properties

Additional settings
Specify additional settings for the connection

Impersonation: None

☒ Non empty criteria

☒ Non empty queries

☒ Use subcubes

☒ Check for Touch notifications

☒ Cache data requests

☒ Cache criteria requests on server

Max active Connections: 0

Accumulated query time before reconnect (seconds): 0

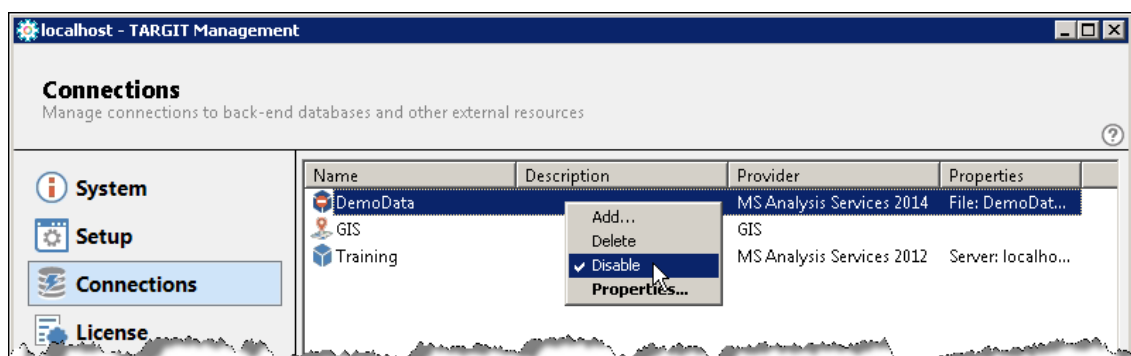
Previous Next Create Cancel

We have now defined the Connection Type, the Provider and the Connection which is what is needed to make the TARGIT Server use this data source.

Click *Create*.

Let's take a look at our database connections. Notice that we now have four real database connections.

In the following lessons we will only use data from the Training connection, the connection to our newly designed OLAP database. To avoid confusion later in this course we will disable the DemoData connection

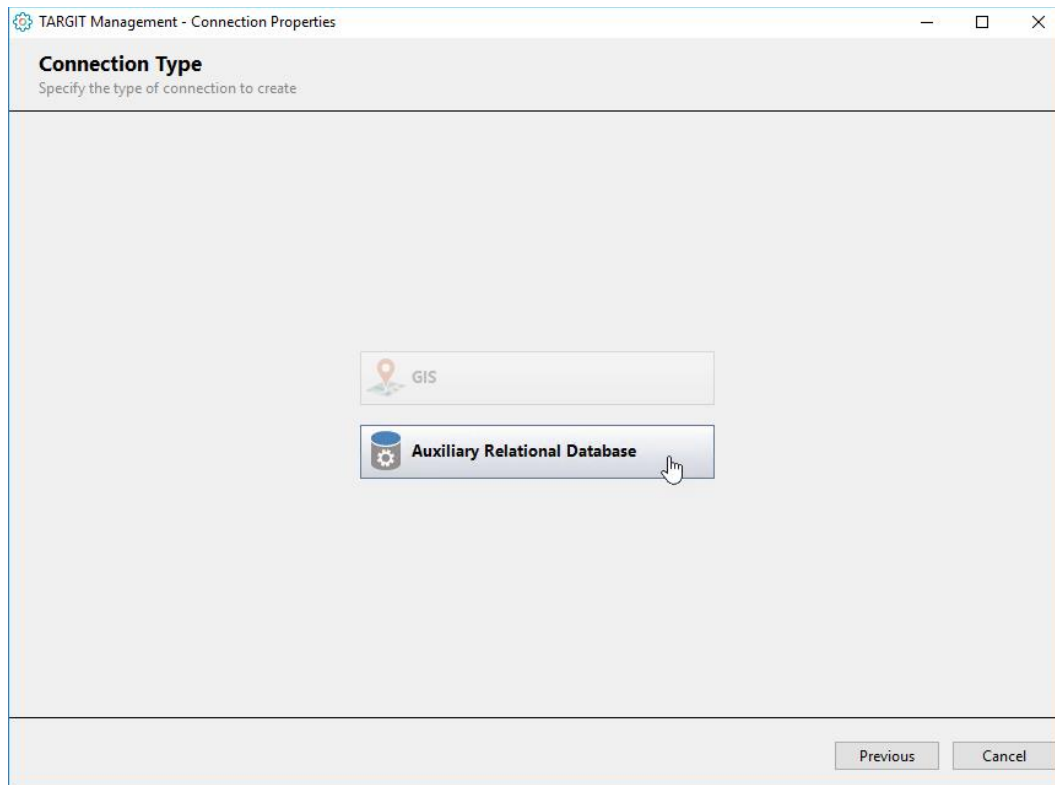


Setting up the logging functionality

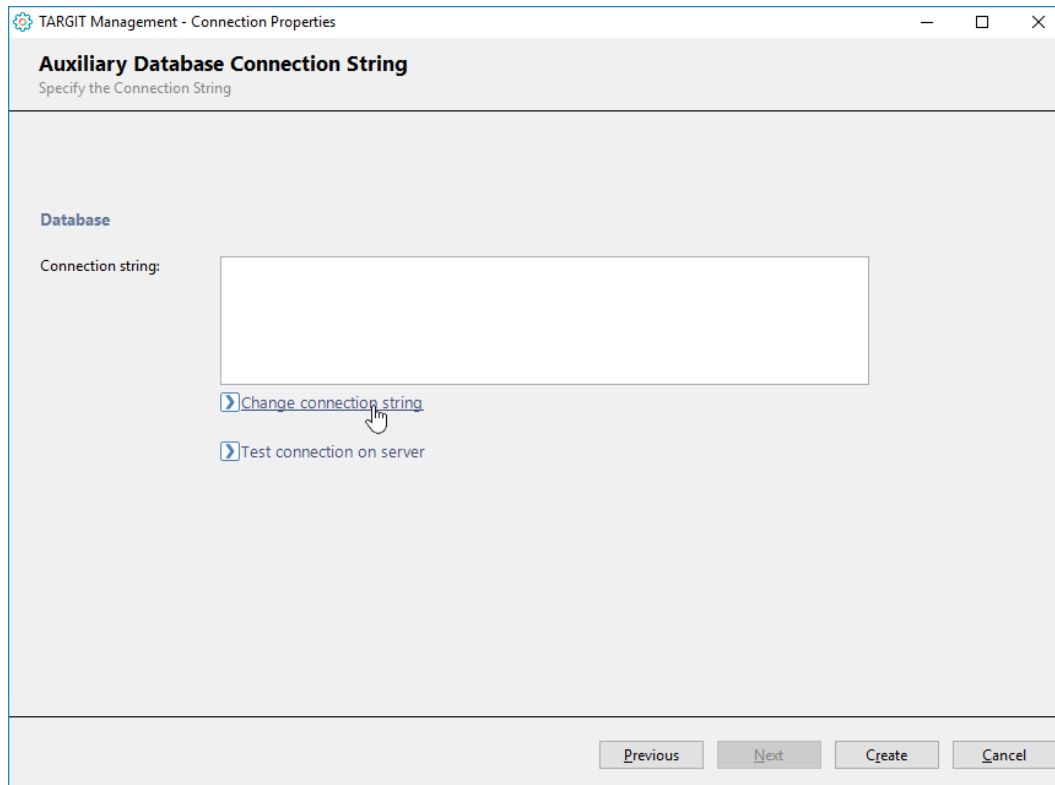
Create an empty relational database on the installed SQL Server instance. Give it a proper name i.e. *TARGITLogDB*.

Create an *Auxiliary Relational Database* connection in *TARGIT Management client*.

This is done using the *Connections* tab → *right-click* in the working area and *add* a connection → click *'Other'* → click *'Auxiliary Relational Database'*.



Specify a proper name for the connection, i.e. *LogDB*. – on the next screen a connection string needs to be specified. Click '*Change connection string*'.



TARGIT Management - Connection Properties

Auxiliary Database Connection String
Specify the Connection String

Database

Connection string:

[Change connection string](#)

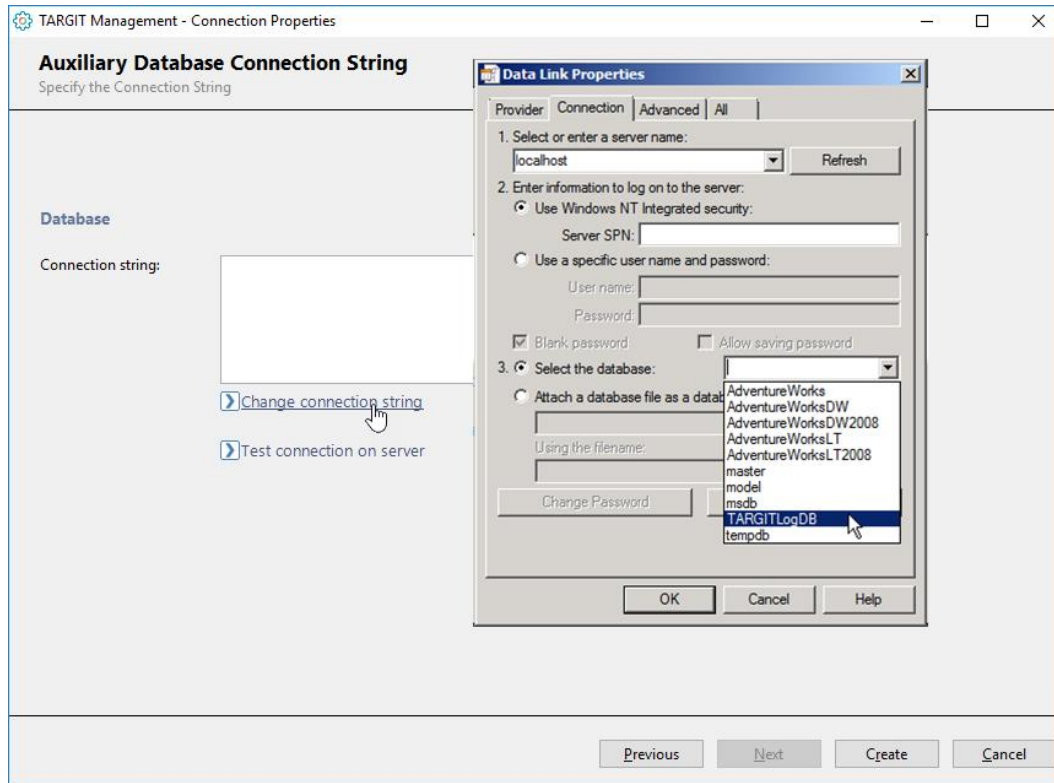
[Test connection on server](#)

Previous Next Create Cancel

Select the desired provider. In this case we will be using the '*SQL Server Native 10.0*' provider to connect to the relational database we created earlier.

Now, click '*Next*' to configure the connection and database. In our case, the database is hosted on the local installed SQL Server instance, so we simply refer to the server: '*Localhost*'.

We can connect to the server using Windows integrated security. This setting also needs to be applied. Finally, the database we will be using needs to be selected from the list. Click 'OK' to create the connection string.



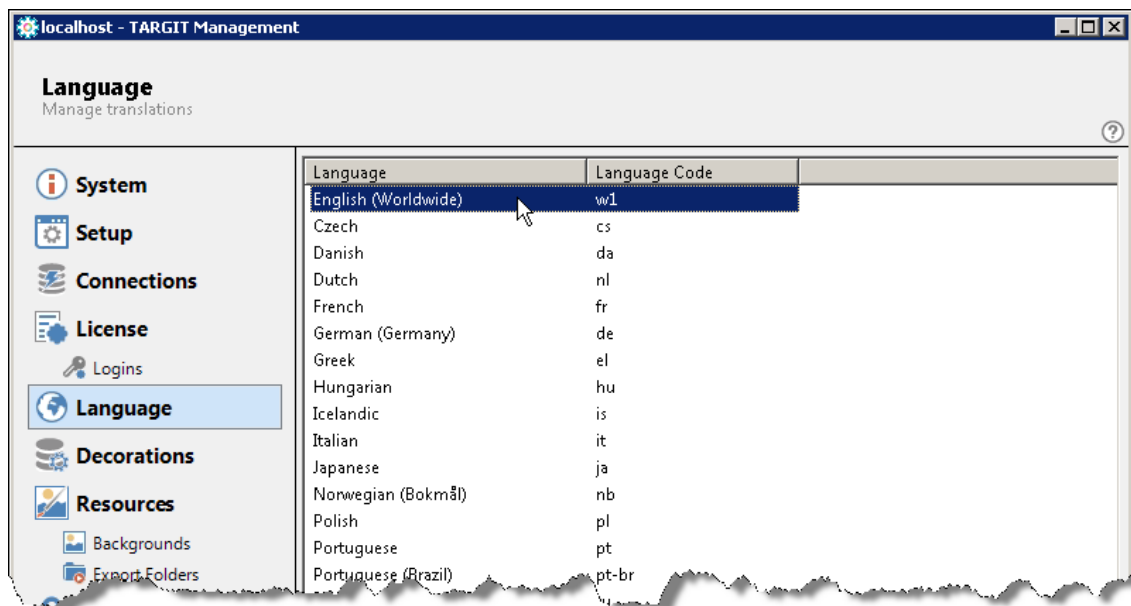
Click 'Create' to finish configuration of the Auxiliary connection.

Language

In a multilingual organization it must be possible to translate the individual business terms. For example *Revenue* might be translated into *Revenu* in French and into *Umsatz* in German. And *Product* might be translated into *Produit* and *Produkt*.

To handle this, the TARGIT Management client offers a *Language layer*, where measure names and dimension names and levels can be translated. According to the preferred language of each individual user, the proper translation will be displayed when analysing data in the TARGIT Analysis client.

In the TARGIT Management client, click the *Language* icon.

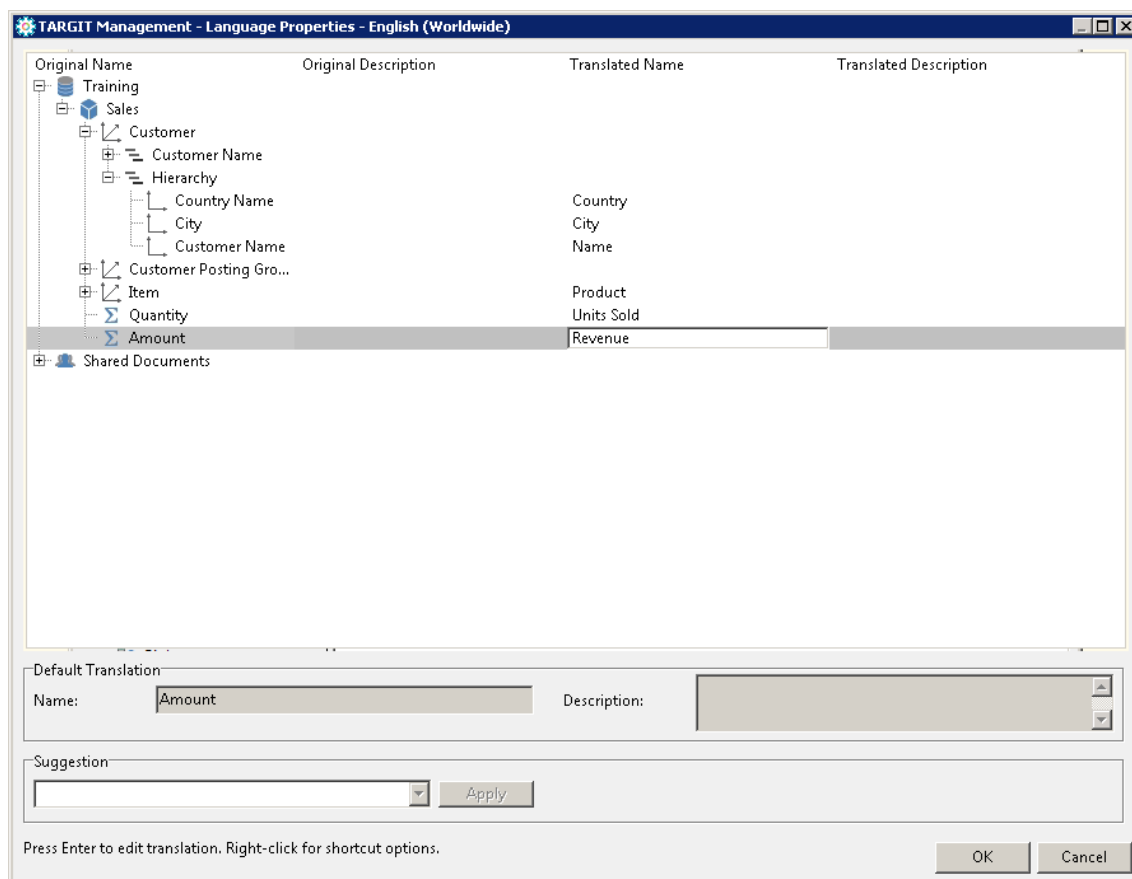


In a world-wide organization you would make translations for all the relevant languages, but in this class the only language to be “translated” will be *English (Worldwide)*.

Even though the business terms may be in English already, at least partially, it will still be necessary to translate database specific terms into more user-friendly terms.

Double-click the *English (Worldwide)* entry to start translating the business terms. The translation editor will open and to translate a specific business term you must first navigate to that term and then press the *Enter* key to start translating. Press *Enter* again when translation has been completed.

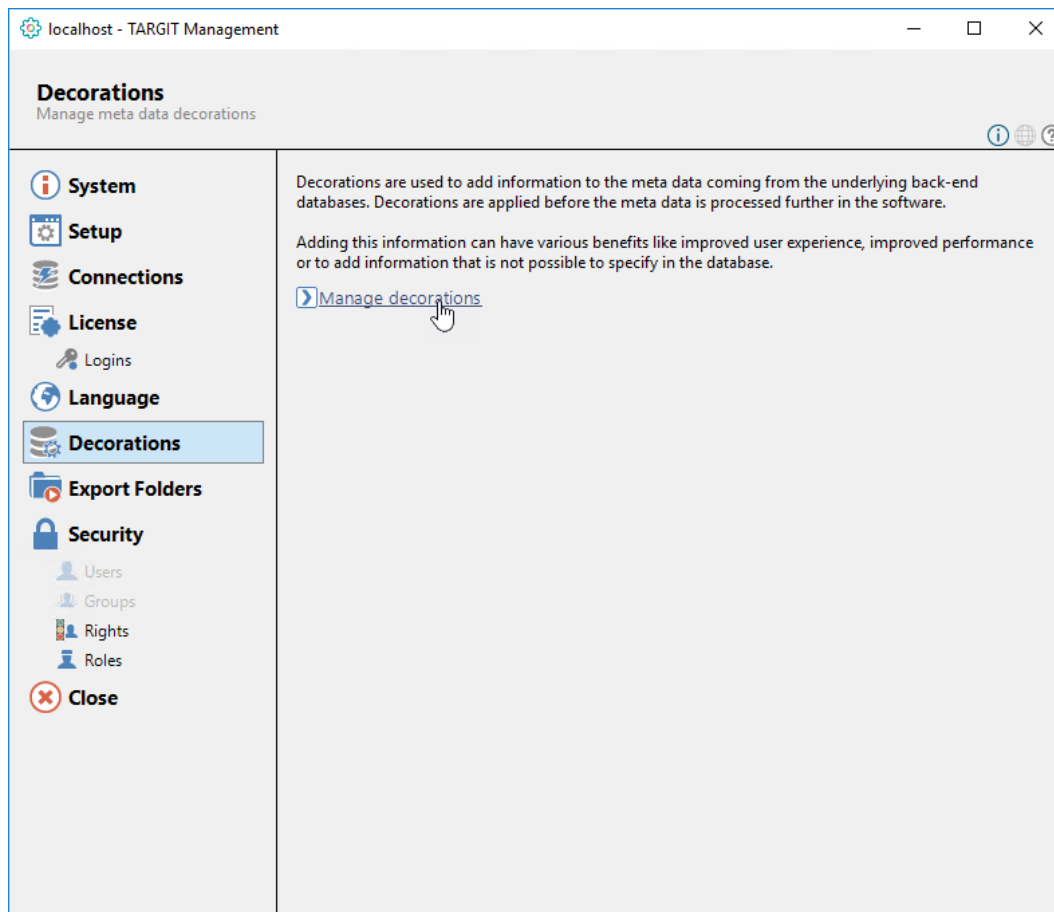
If no translation is entered, the original name will be displayed to the end-user.



Decorations

The decorations editor is used to add information to the metadata coming from the underlying back-end databases. Decorations are added before metadata is further processed. The benefits of using decorations include improved performance, easier and better data overview and additional information not available in the database.

When clicking *Manage decorations* a dialog box will open to display a list of all database connections on the left and a list of properties on the right.

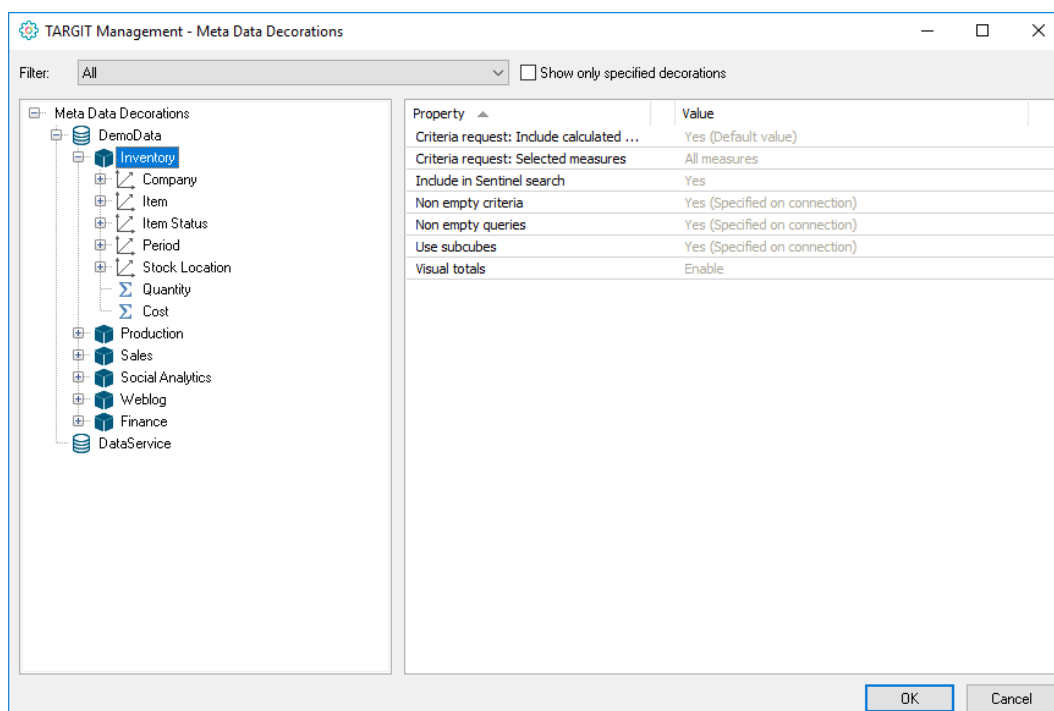


Each database connection in the left panel may be expanded to display available cubes and each cube may be expanded to display its dimensions and measures.

The available properties will vary according to which level of the hierarchy you have selected. You can work on any of these levels: Database connections, cubes and dimensions/measures.

Changes to the properties of an element overrides any values of the property specified elsewhere in TARGIT Management client (e.g. on the database connection definition itself) and any values specified on higher levels in the hierarchy.

The screenshot below displays the properties for the connection string created for one of the Demo Data cubes.



In this table, you can read about each property setting:

Property	Description
Criteria request: Include calculated members	This property makes it possible to specify if calculated members should be included in a request for possible criteria values. Any changes overrides the default specified in the option in Setup Back-end.
Criteria request: Selected measures	By default all measures in a cube are included in the criteria requests made from dimensions on the criteria bar. Sometimes it may be convenient to select specifically which measures should be included to reduce the number of members shown in the criteria bar. With this property the measures to include in criteria requests may be selected specifically. Note that selecting measures specifically overrides any values set for the property 'Criteria request: Include calculated members'.
Dynamic dates definition	This property makes it possible to define dynamic dates dimension level names in a way that is usable for the database backend. E.g. in a tabular model, a hierarchical time dimension may be defined in a way that requires redefinition here. It is necessary to know what the unique names for each dimension level in the dimension are (e.g. in SSAS) to make the definitions. When selecting an appropriate hierarchy and clicking this field, a dialog with three tabs opens: Dynamic time definition, Offset and table lookup and Level type overrides. For further documentation on dynamic dates, see the appropriate chapter in this manual.
Include in Sentinel search	When searching for Sentinels all cubes and measures are included in the search by default. This property makes it possible to specify for each database, cube and measure whether it should be included in the search.

Non empty criteria	This property ensures that dimensions on the criteria bar are filtered to only display members where data exist for one or more measures in the measure groups the dimension is associated with.
Non empty queries	This property filters dimension members with empty results from the data set.
Use subcubes	A subcube is a subset of a cube based on the criteria applied to the data set. The use of subcubes will in most cases result in a performance increase. Use of subcubes has both pros and cons which should be considered.
Prevent criteria Auto-filter	This property makes it possible to prevent a dimension to be included in an auto-filter request in the criteria bar. This is convenient for some calculated dimensions that causes auto-filter requests to take long time.
Search-only in criteria bar	Prevents fetching members automatically when opening a dimension field in the criteria bar.
Visual totals	This property makes it possible to enable (default) or disable measure totals when criteria are applied.
Oracle Warehouse Builder caption column	By default the dimension captions presented in TARGIT are based on the key values in the Oracle Warehouse Builder. To change this to another value (e.g. Name value) write the name of the value in this field. After any change the cubes must be processed by right-clicking the connection and select 'Process Cubes'.

Export Folders

Export folders are the folder options that the end-user will see when he/she is adding a scheduled job to a document or a table data export.

Schedule Job
Specify how and where the output should be delivered

Source ☒ Export to folder: Default ▼

General ☐ Send by email:

Schedule To: ▼

Format Subject:

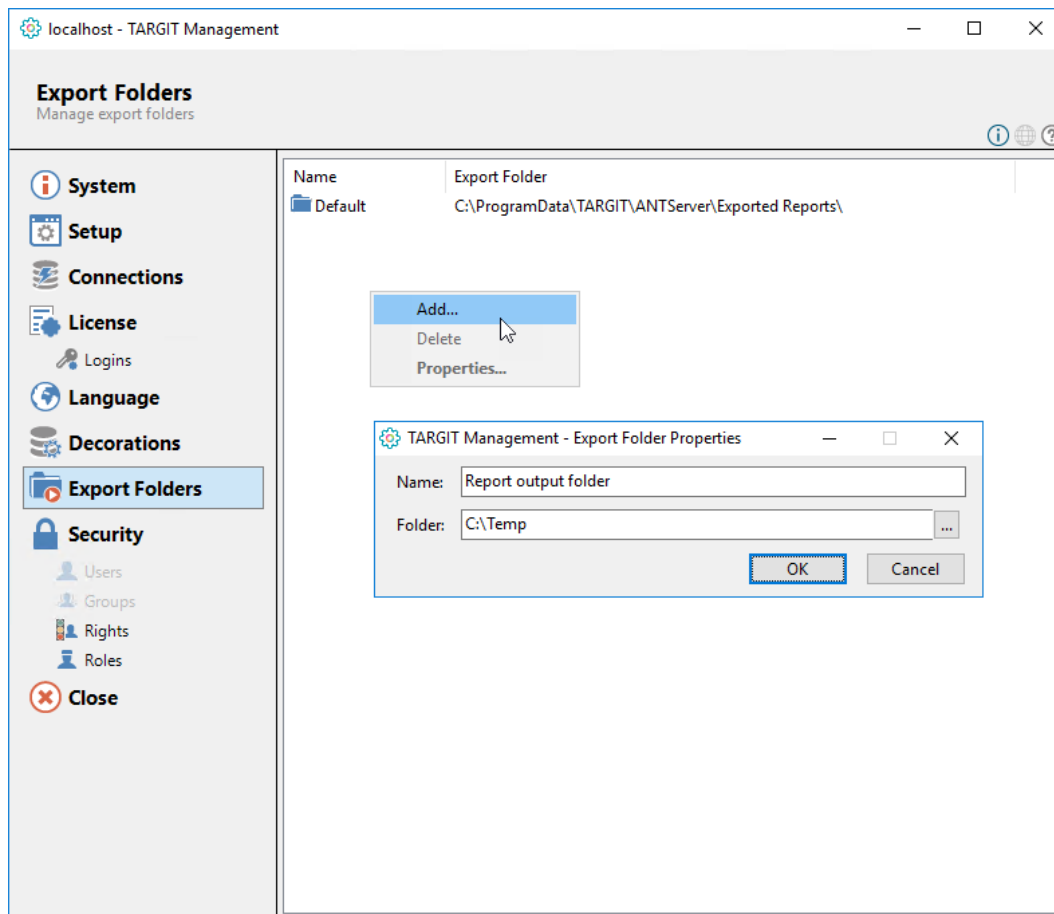
Delivery Message:

Batch ☐ Include criteria information

☐ Include link to document

☐ Include job properties link

If end-users need to be able to export the output to other folders than the default folder, then you will need to add these additional folders in *Export Folders* section in the TARGIT Management client.



Note: The Export Folders paths you can set here are paths that are accessible to the TARGIT Server. Please consider if these paths are accessible for end-users as well – as they often should be.

Lesson 5: Users, Groups, Roles and Licenses

In this lesson, we will be looking into some very common issues regarding administration of users, user application permissions and user access rights.

We will also discuss the various user types and types of server licenses.

Two security models

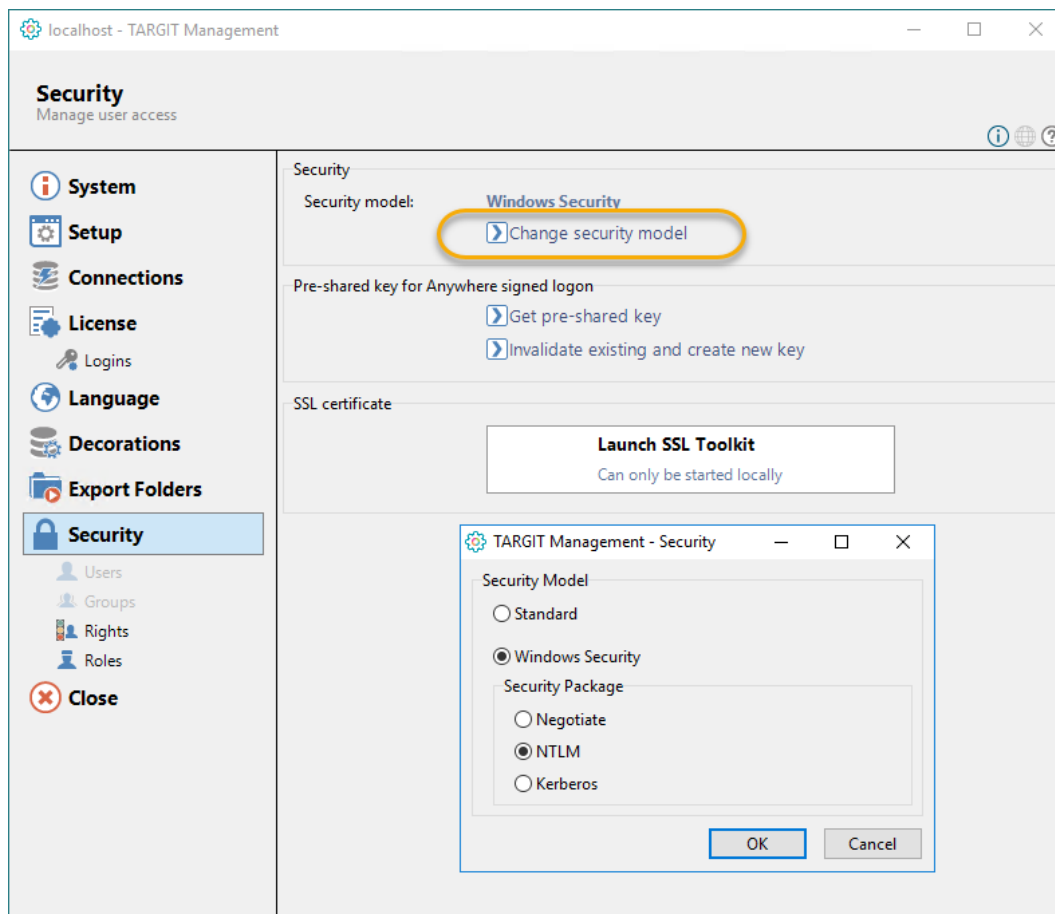
In TARGIT, you can operate with two different models – either Windows Security or Standard Security.

The choice of models is important when it comes to security – controlling who is able to logon and controlling what rights a certain user/user group should have (application privileges).

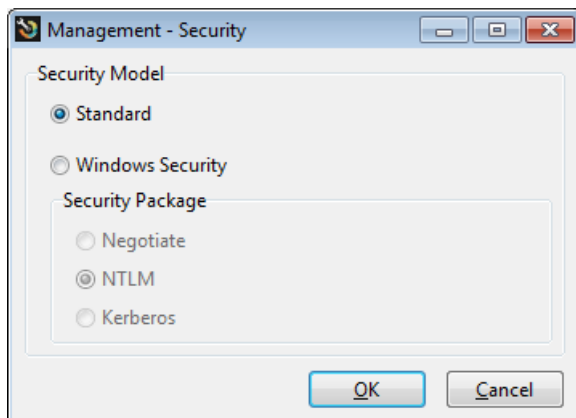
At the first login by a certain user, the rights given at this level will result in a certain license being taken.

Choosing Security model

The default and most commonly used security model is *Windows Security*. When using Windows Security, users are validated through their Windows login or Domain login, and thus no additional usernames and passwords are required when logging on to the TARGIT Decision Suite.



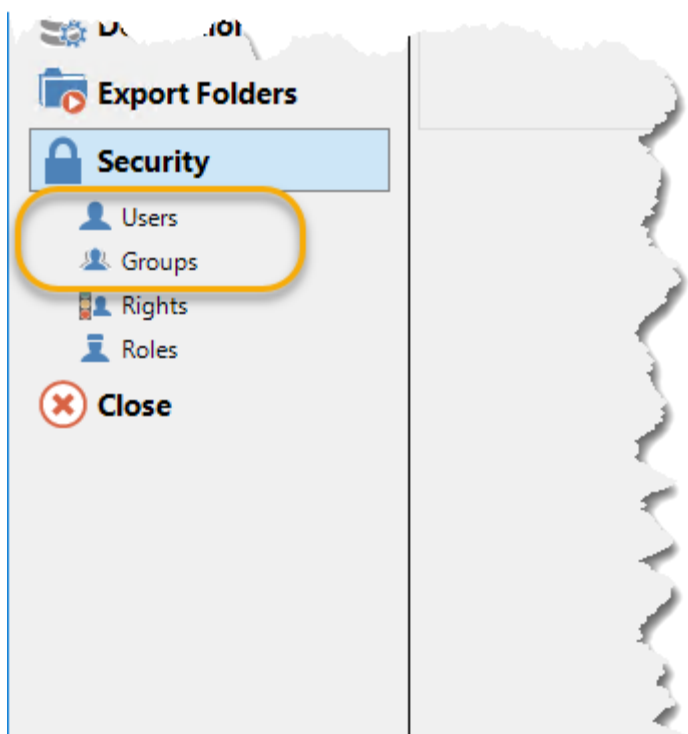
The other option (Standard security) means that we operate with TARGIT users unrelated to Windows logins.



Standard Security Model

When working with Standard Security you need to create TARGIT users and TARGIT groups using TARGIT Management client.

So once you have chosen to work with Standard Security you will see these tabs in the main menu of TARGIT Management Studio:

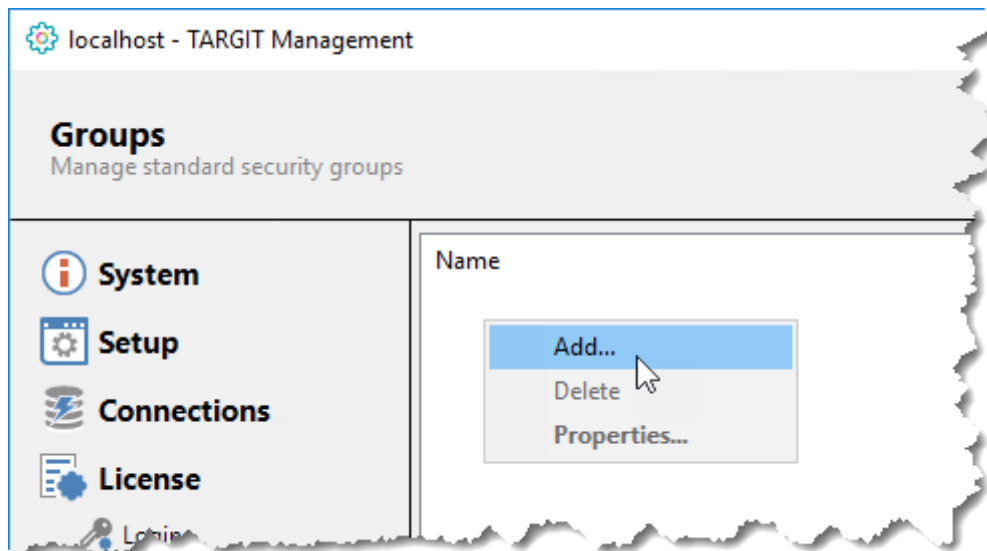


The Users and Groups tabs are greyed out in case Windows Security is the preferred model.

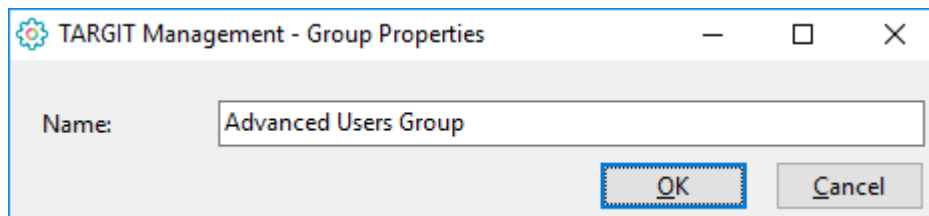
Groups in Standard Security

First action could be creating Groups. If we click the Groups tab, we will see that currently there are no groups.

We right click in the workspace area and choose Add.



Groups are simply named followed by OK.

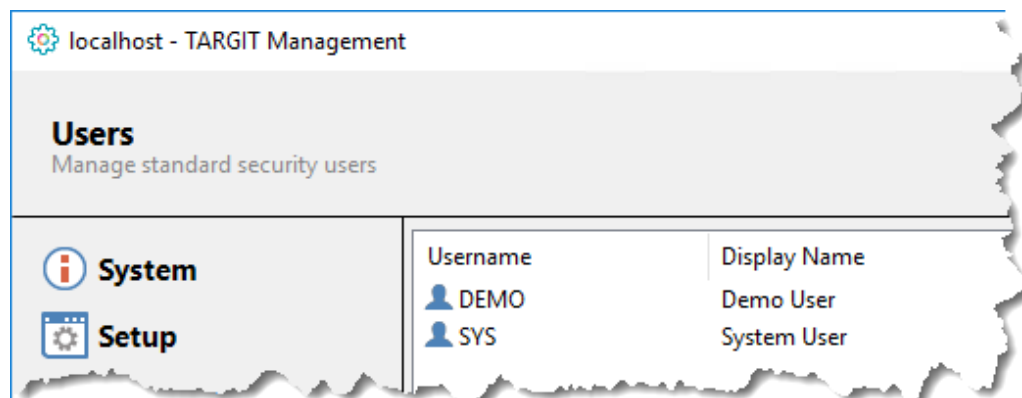


The advantage of Groups will be clear when you get to the point of administrating Rights and Roles. Rather than adding individual persons to Rights and Roles, you will prefer to add Groups.

Users in Standard Security

Now we can click the Users tab and start adding Users.

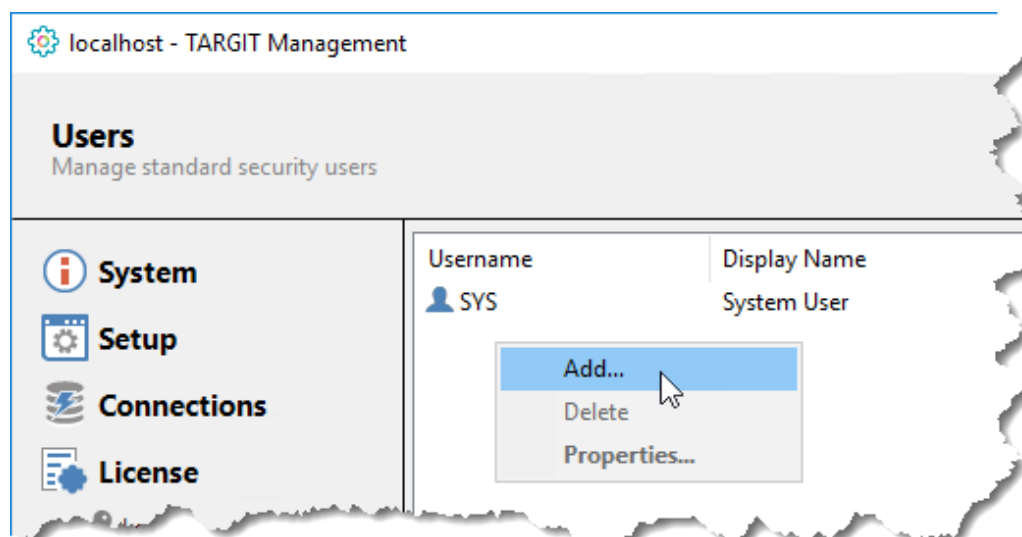
Initially there are two users for Demo purposes:



The recommended best practices for Standard Security users and permissions are:

- Remove the DEMO user.
- Change application rights for SYS user to *Management Studio* only (application rights are covered a little further ahead in this manual).

Furthermore, you can create additional users by right clicking in the workspace and choose add:



The form for adding users looks like this (multiple groups defined):

Windows Security Model

When working with Windows Security your users and potential user groups have already been created as part of the domain. (Please refer to the appendix for further explanation on creating users and groups in the Active Directory).

Best Practice

We strongly recommend working with Windows Security, where possible.

Best practice would then be to create a number of Active Directory (AD) Groups e.g. "TARGIT Designer Users", "TARGIT Consumer Users", "TARGIT Norway Sales Office", "TARGIT Sweden Sales Office" etc. These AD groups will then be added to TARGIT Management with appropriate Rights and Roles.

Example:

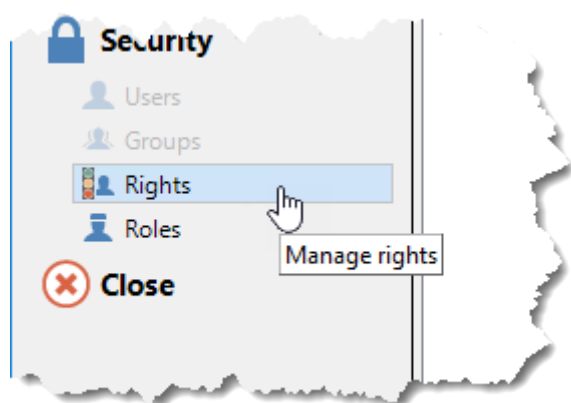
Active Directory Group	Purpose
TARGIT Designer Users	Members of this group should be given "Designer User" Rights. No limitations with regard to Roles (data).
TARGIT Consumer User	Members of this group should be given "Consumer User" Rights. No limitations with regard to Roles (data).
TARGIT Norway Sales Office	Members of this group should be limited to see Norway data only through a Role with a Forced Norway criterion. No limitations with regard to Rights.
TARGIT Sweden Sales Office	Members of this group should be limited to see Sweden data only through a Role with a Forced Sweden criterion. No limitations with regard to Rights.

From the example above, by adding an individual person to multiple AD groups, you can create e.g. a Designer user with access to Norway data only.

Once these AD groups have been created and added to their appropriate TARGIT Rights and Roles, they will require only a minimum of administration. Your job, as an Administrator, will then mainly focus on adding, moving or removing individual persons from the AD groups only.

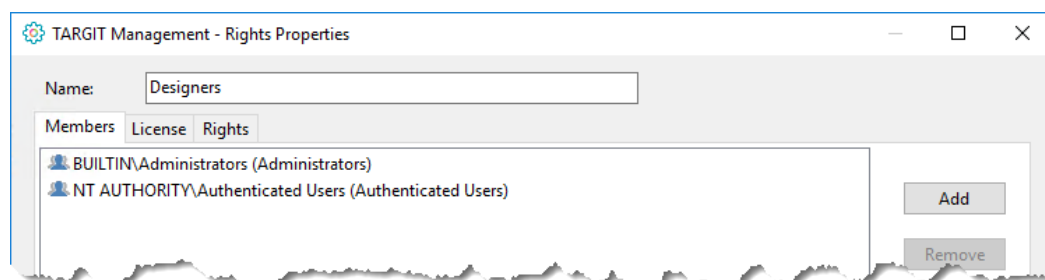
Rights

To define application rights we click the Rights tab in TARGIT Management client.



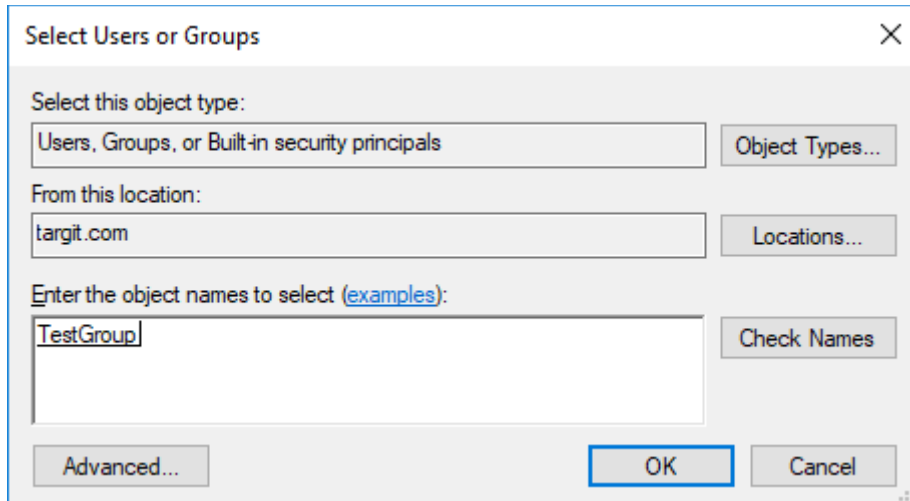
With a new installation of TARGIT, there will be a set of pre-defined Rights. You may keep those, or you may start creating your own system

Looking into one of the pre-defined Rights, e.g. the “Designer” Rights, you can see three tabs: Members, License and Rights.



The Members tab

This is where you can add or remove members from the current Rights group. When you look up members from your Active Directory, you can add both AD Users and AD Groups:

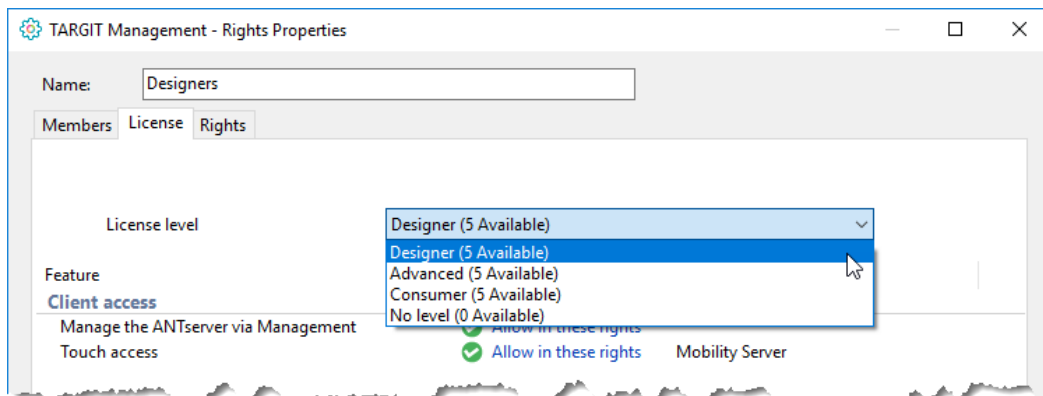


The License tab

With your general TARGIT license, you have also acquired a number of User licenses. These User licenses can be of different types and levels, e.g. Designer users, Advanced users and Consumer users.

You only have a limited number of user licenses, so you should be careful about to whom you grant these licenses.

Furthermore, the chosen type of User license will work as a general limiter on what the end-user can do with the TARGIT client.

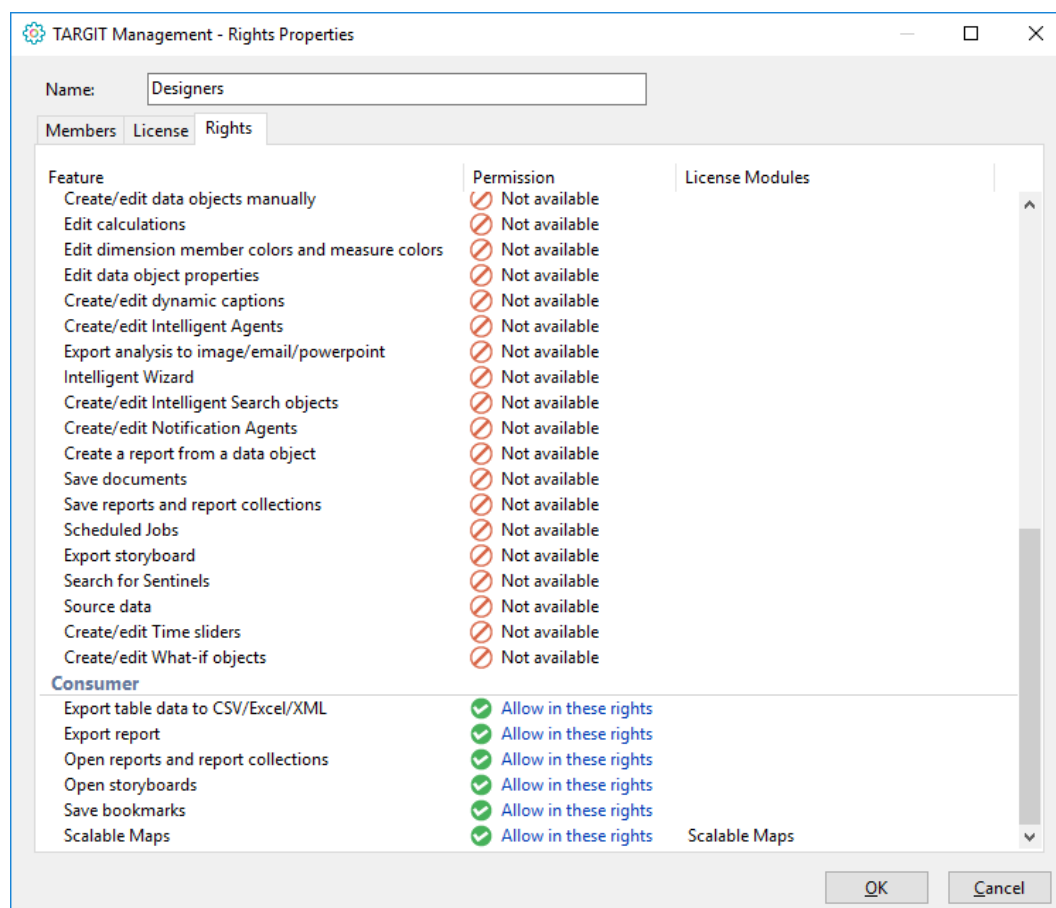


On the License tab, you also control members' access to the Management client as well as access to the Anywhere and Mobile clients.

The Rights tab

On the Rights tab, you can fine tune members' access to detailed features within the TARGIT Client.

Notice that the Rights list is split into three main sections: Designer, Advanced and Consumer. These section correspond to the License levels on the License tab. E.g. if you selected the Consumer license level on the License tab, all non-Consumer features will be set to "Not available".



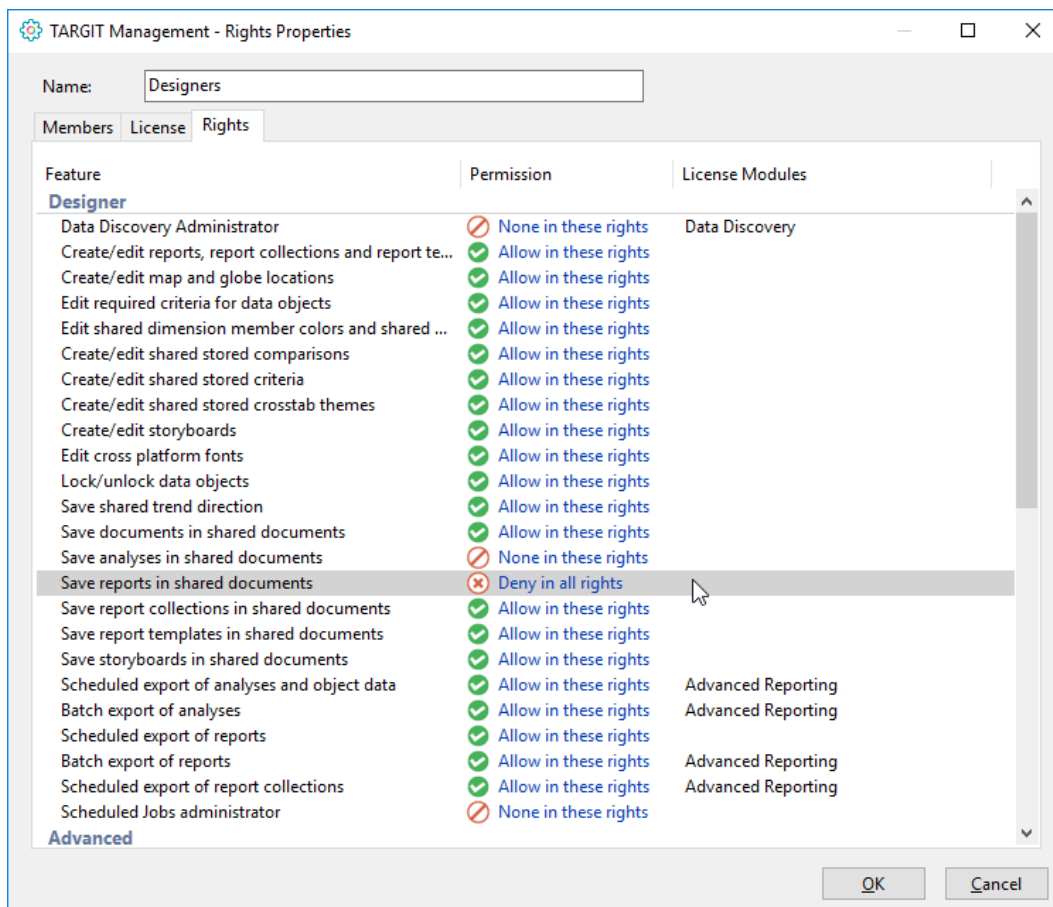
Otherwise, within the features permitted by the license level, you are free to enable or disable these features for the members of this Rights group.

Permissions in Rights

A user or a group may be a member of multiple sets of rights, and it is the cumulative effect of those set of rights that determine which license a user will occupy and what the exact application rights for that particular user will be.

There are three modes of permissions:

- Allow in these rights,
- None in these rights
- Deny in all rights



If *Deny in all rights* is used, it will effectively block a user from this feature – even if the user is member of another Rights group that does grant him access to the feature.

If *None in these rights* is used, the current Rights group does not grant user access to the feature. However, if the user is member of another Rights group that *does* grant access to the feature (*Allow in these rights*), then the effective user access will be *Allow*.

Rights best practice

Remove the initial set of rights – either Windows users or Standard users and create your own sets of rights.

Remember to create at least one set of rights with rights to access TARGIT Management client. Otherwise, you will be locked out from administration of your TARGIT application!

Access to TARGIT Management client alone will not use any User Licenses.

Just a few Super users often manage some of the features, and you may consider creating special Rights groups for these. The features include:

- Data Discovery Administrator (ability to manage all Data Discovery objects)
- Scheduled Jobs Administrator (ability to manage all Scheduled Jobs)

Roles

With *Roles* you will be able to control end users' access to the source data. You may grant or deny access to any level of your source data: On the Data Warehouse level, on cube level, on measure and dimension level and even on the very granular dimension attribute and hierarchy level.

A user or a group may be member of multiple Roles, and it is the cumulative effect of these roles that determines whether a user is permitted to work with certain source data or not.

There are three modes of permissions:

- **Allow in this role.** The current role grants access to the source data.
- If the user is part of this role only, he will have access to the source data.
- If the user is part of another role where permission is set to *None in this role*, he will have access to the source data.
- If the user is part of another role where permission is set to *Deny in all roles*, he will not have access to the source data.
- **None in this role.** The current role does not grant access to the source data. Neither does it deny access to the source data if the user has been granted access in a different role.
- If the user is part of this role only, he will not have access to the source data.
- If the user is part of another role where permission is set to *Allow in this role*, he will have access to the source data.
- **Deny in all roles.** The current role denies access to the source data, no matter what other permissions the user may have in other roles.
- Furthermore, you may work with a *Default Child Permission* on each node which determines the permission to any new children that are subsequently added to the node. By default, children will inherit their parent's permission, but may also set to default to *None*, *Allow* or *Deny*.

Roles Best Practices

The recommended best practices for Roles and Data access are:

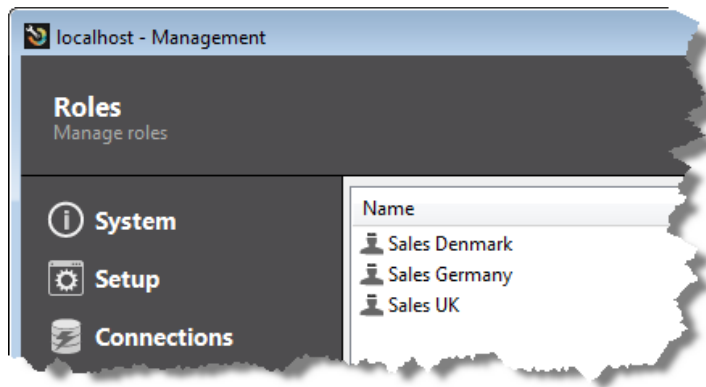
- Delete the default *Full Access* role.
- Create specific roles, e.g. *Sales Denmark*, *Sales Germany* etc. and add relevant users and groups of users to these groups.
- In each role set the *Databases* permission to *Allow* and set the *Default Child Permission* to *None*. This will ensure that users may access Connections, but by default will not gain access to any *new* Connections.
- In each role set each *Connection* permission to *Allow* or *None* and set the *Default Child Permission* to *None*. This will ensure that users may/may not access Cubes, but by default will not gain access to any *new* Cubes.

- In each role set the *Cubes* permission to *Allow* or *None* and set the *Default Child Permission* to *Inherit*. This will ensure that users may/may not access Dimensions and Measures in that cube and by default will inherit the cube's permission when trying to access any *new* Dimensions and Measures.
- Avoid as far as possible use of the *Deny in all roles* setting!

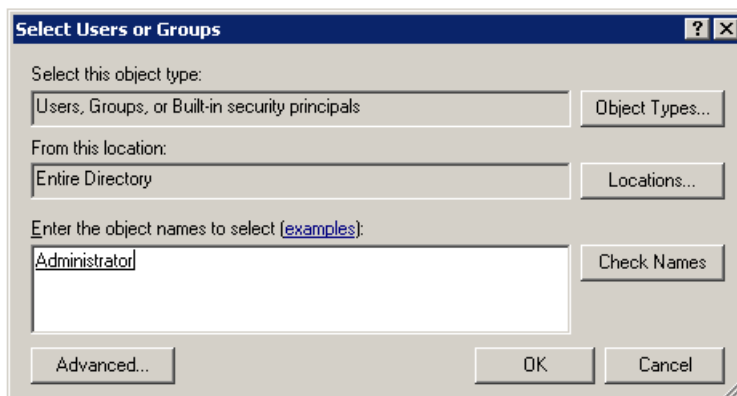
Specific Roles – Databases access

Next, let us create a couple of new roles to examine the behavior of the above mentioned best practices.

Create three roles as illustrated below.



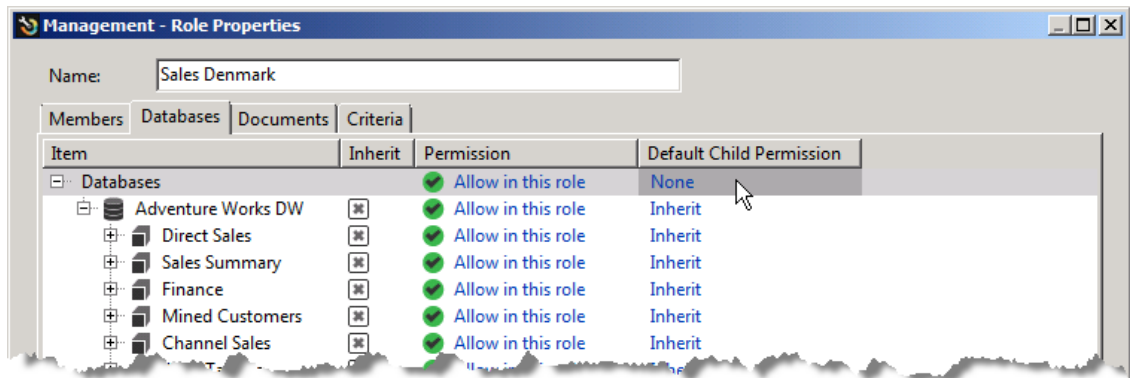
Make sure that the current user (Administrator) is added to the *Sales Denmark* role only.



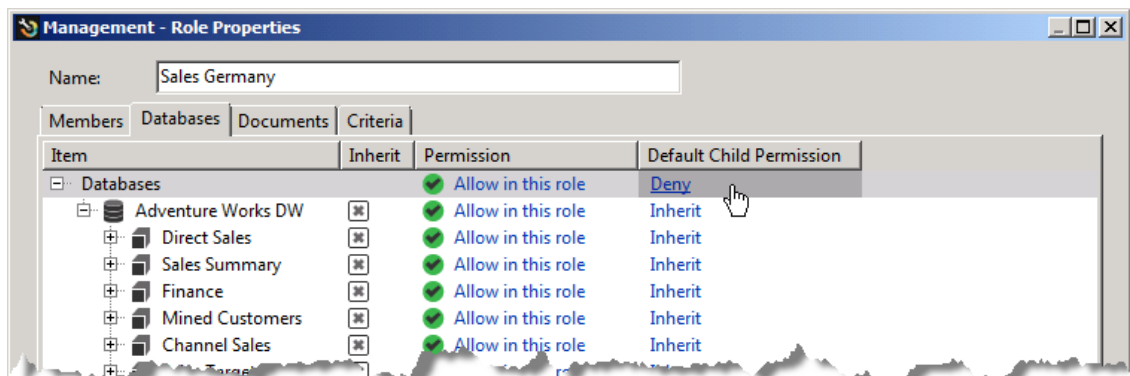
All three roles will be set up with different Default Child Permissions on the Database level and the recommended *inherit* permission on the cube level. On the database level we will try out the three different Default Child Permissions: *None*, *Deny* and *Inherit* for the three different roles.

Note: On a live running environment it is not recommended to make limitations on the top level, the database level, because it will cause more maintenance regarding the roles when adding new connections to TARGIT, because they could, by default(as specified in the role(s), be left out for all users of the affected roles. The recommended setting on this level is *None* and it is recommended to differentiate on the lower level(s).

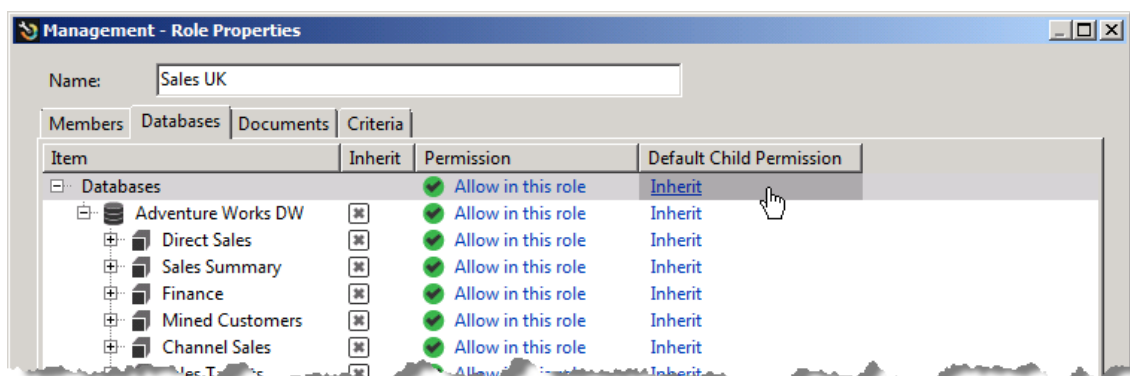
Sales Denmark, Default Child Permission set to *None* on the database level.



Sales Germany set to *Deny*.

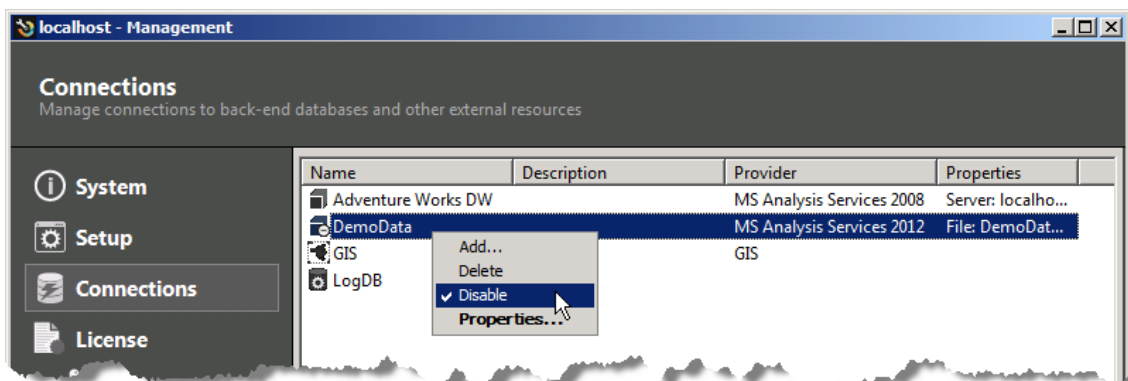


Sales UK set to *Inherit*.



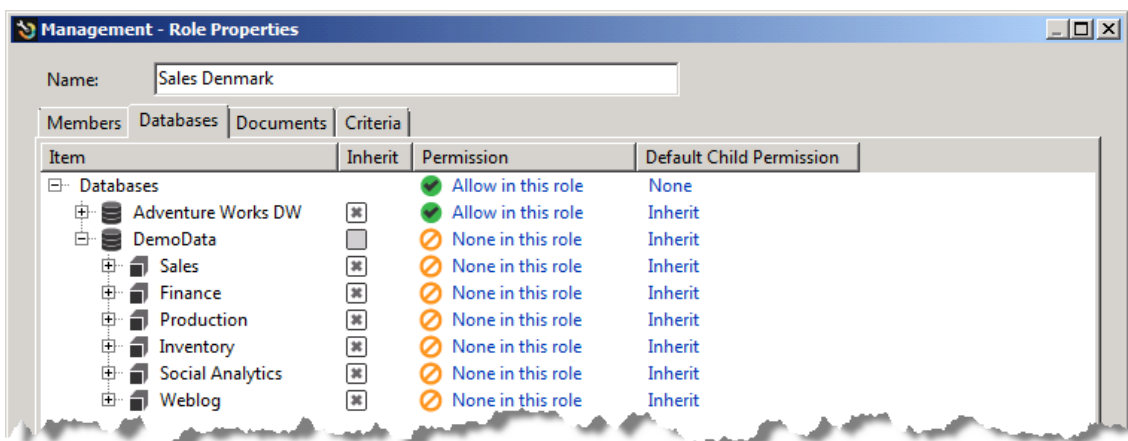
Now, let us see what will happen when we add a new connection to the TARGIT solution, by enabling the *Sales* demo cube again. By enabling this connection we will see the different effects of the different Default Child Permissions in the three different roles.

Enable the connection to the Sales demo cube.

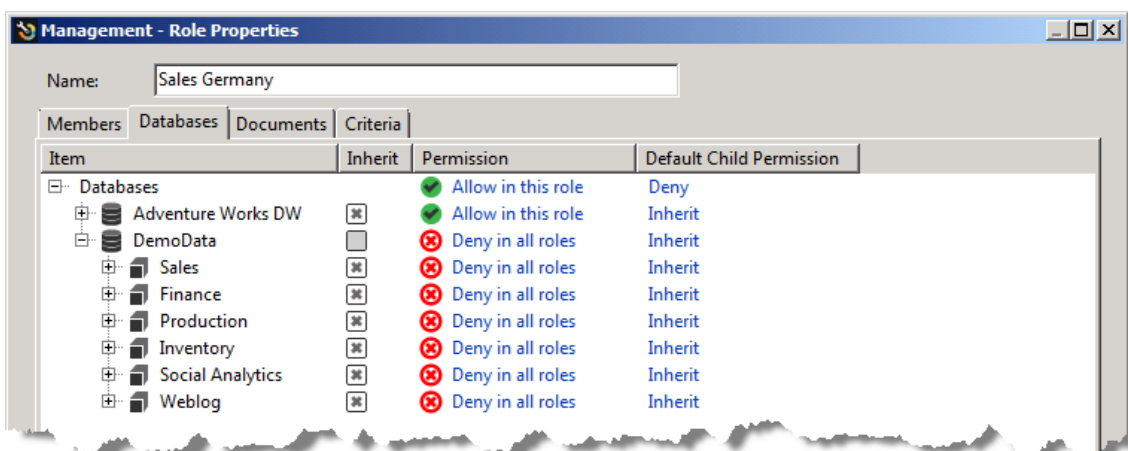


In TARGIT Management client we can now see the results of the added/enabled connection in the various roles.

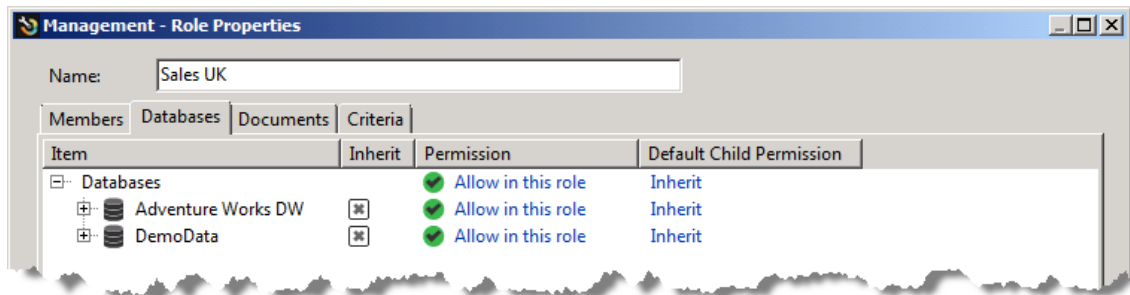
The Denmark role:



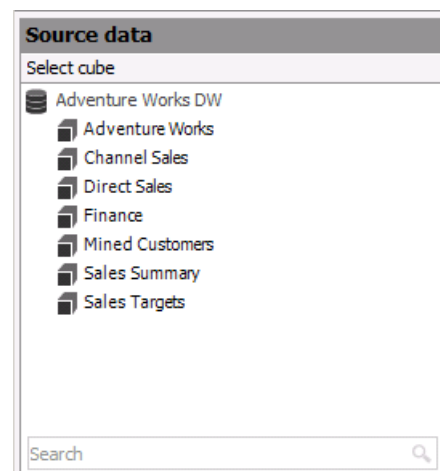
The Germany role:



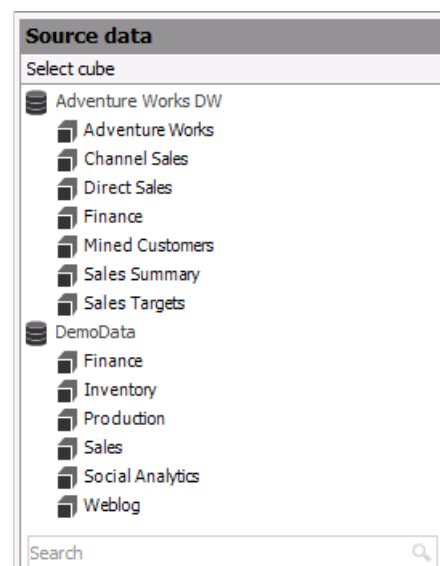
The UK role:



Now, since the current user (Administrator) is added to the *Sales Denmark* role only, we will see in the TARGIT client that this user only has access to the cubes from the Adventure Works data warehouse – not the newly added Sales database.



If we add this user to the *Sales UK* role too, the user *will* gain access to the Sales database.



But if we furthermore add the user to the Sales Germany role, access to the Sales database will be denied (overriding any other permission in any other role)!

Forced Criteria and Initial Criteria

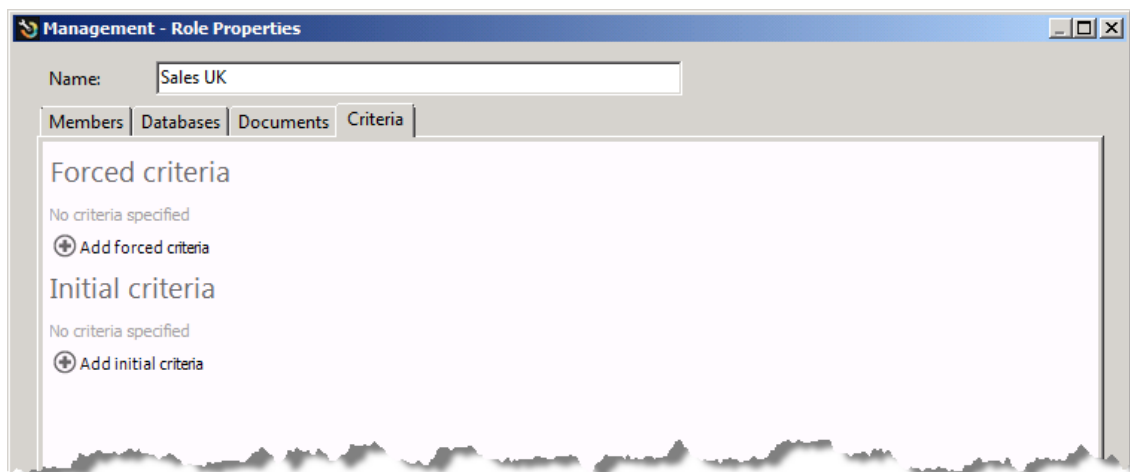
In your roles, you may specify certain criteria that should be forced upon the members of the role.

It is also possible to apply the much lighter version of this feature, initial criteria, which applies the criteria when the users logon to TARGIT initially. The user will be capable of removing the criteria manually from the TARGIT client.

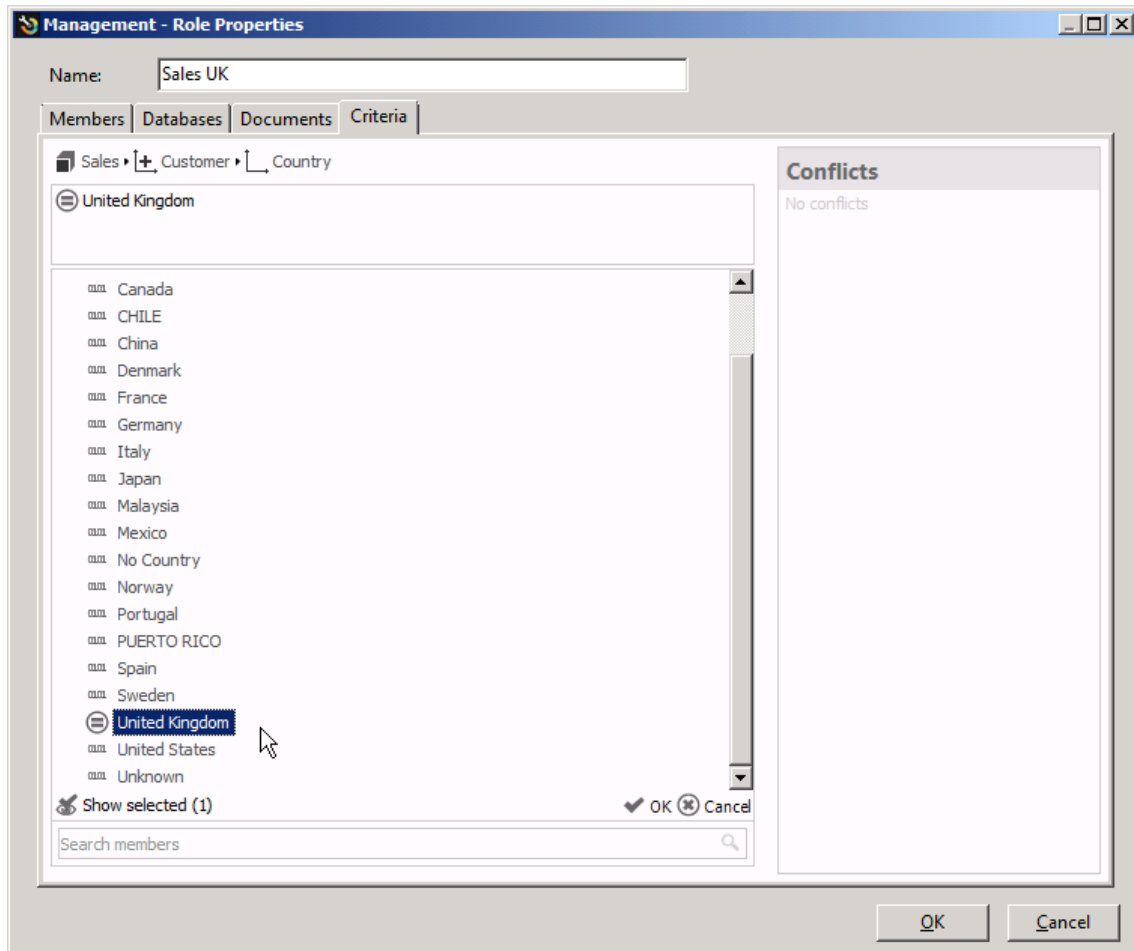
As an example consider, a larger reseller chain with a number of individual stores. Each store manager has access to the common, central Data Warehouse, but store managers should only be allowed to see data related to their own store.

In this case you will have to create a role for each store, each role having its own specific forced criteria on the Store dimension.

To apply forced and/or initial criteria, use the *Criteria* tab, when defining the role.



To add forced criteria, click '*Add forced criteria*'. It is now possible to browse through the dimensions and set the criteria as desired. It is even possible to use the *Search members* feature to make it easier to find the desired dimension member(s).



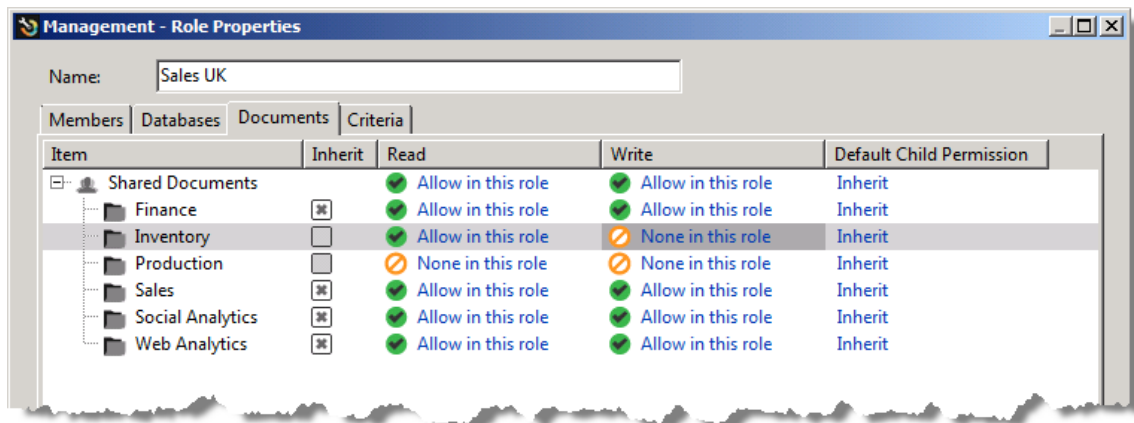
By clicking a dimension member more than once, it is possible to toggle between two operators.

Access control to Shared Favorites folders

For each role, you may also control permissions to access the folder/subfolder structure in the Favorites Smartpad, where all shared analyses, reports and storyboards are stored.

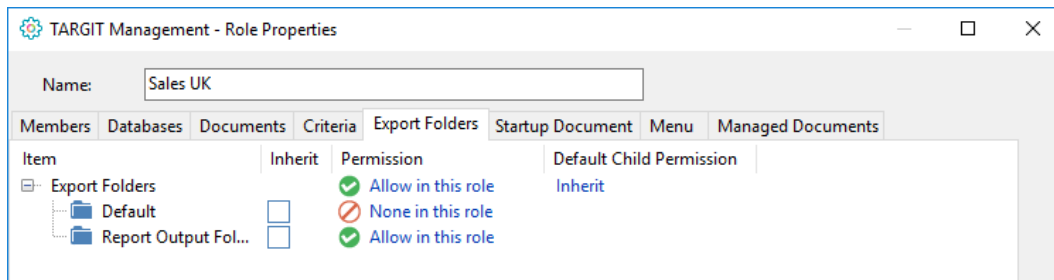
You have the same permission options as when working with data permissions, although you may define different permissions with regard to read and write access to each folder/subfolder.

Please notice that the user must furthermore use a Developer client license in order to write/edit analyses in the Shared Favorites folder.



Export Folders

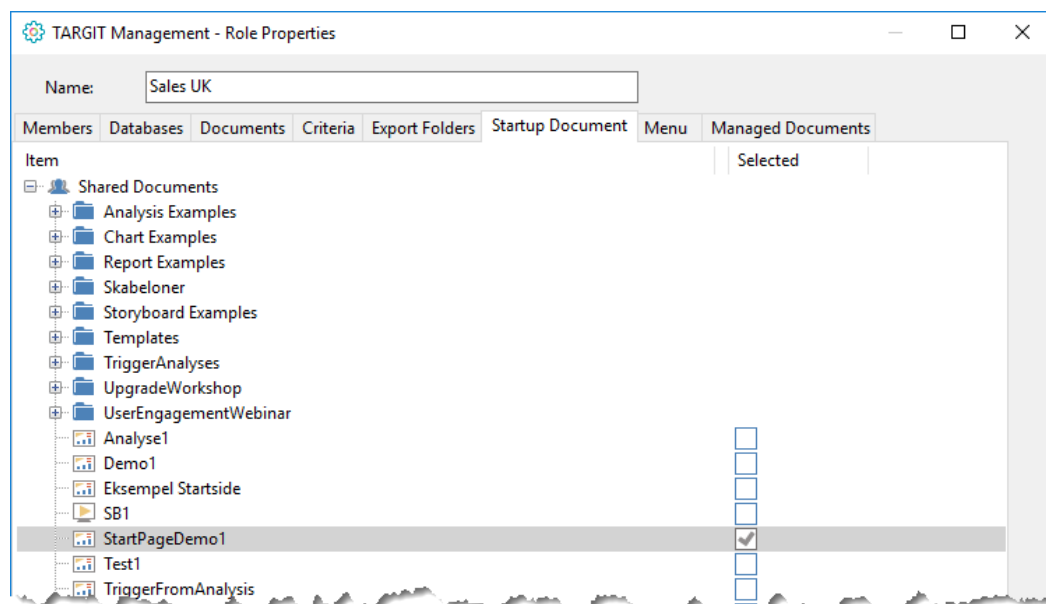
If you have defined multiple output options in the general Export Folders setting, you can also, by role, control access to these Export Folders.



Startup Document

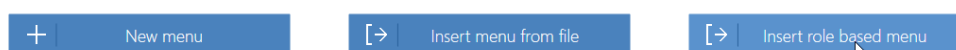
From an Administrator's point of view, you can specify one document that should open automatically when the end-user logs on to the TARGIT client.

This is very useful, especially if you have created a special document, similar to a web page, with a number of buttons or shortcuts that opens other documents when clicked (via triggers).



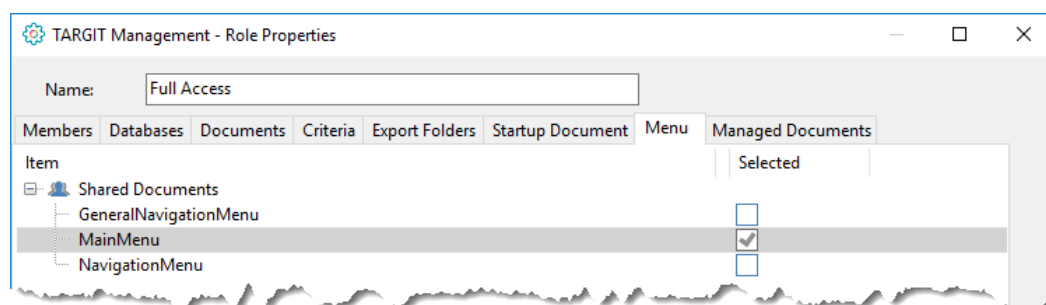
Menu

In the TARGIT client, you may insert a menu as a *Role Based menu* in one or more of your documents. The inserted menu is then automatically selected according to the end-user's role properties.



Different end-users can be members of different roles – and for each role, you can define a specific menu to be inserted as the Role based menu. The menu you select, must be one already stored on the system.

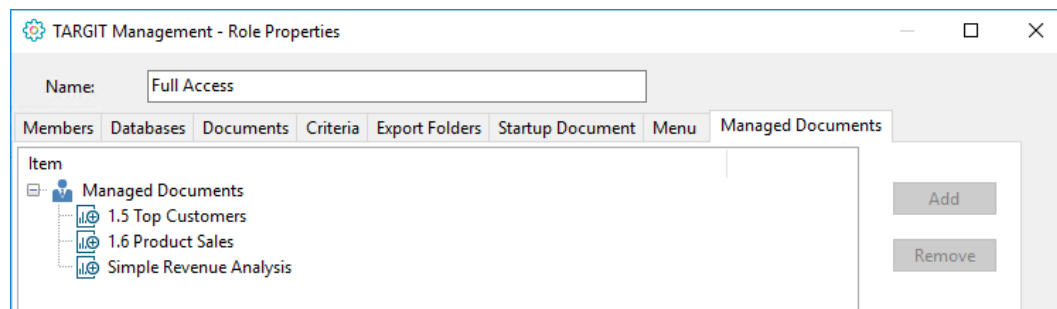
Role properties, including assigning specific menus to specific roles, are managed through the TARGIT Management client:



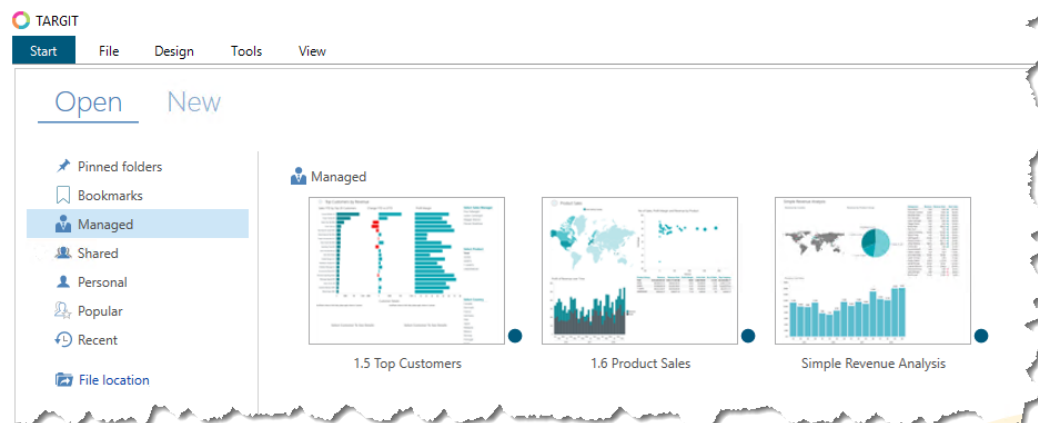
In other words, when one user (from one role) opens the analysis in which you inserted the role based menu, he or she will see one menu. When another user (from another role) opens the same document, he or she will see another menu.

Managed Documents

With this setting, the Administrator can “push” some important documents into the end-user’s Start tab in the TARGIT client.



In the TARGIT client, these documents will appear in the *Managed* folder:



Licenses

In the *License* section of the TARGIT Management client you can get an overview of your current license.

Notice the number of *Named users*. The license is enforced in such a way that whenever a new user logs in, that user will take one of the available licenses. The license will not be freed when the user logs off.

The licenses to be taken will be according to the application permissions for that particular user. If no more licenses of the matching type are available, the user will automatically be given permission at a lower level, if available.

If no more licenses are available, the end-user will get a message that access is denied.

License
View and change license

Name	Value
Holder	
Company	TARGIT A/S
Name	
Properties	
Serial number	10AD4C82541D
Version	2019
Type	TestEnvironment
Expires	No expiration
User levels	
Designer	
Named users	5
Advanced	
Named users	5
Consumer	
Named users	5
Options	
Server edition	Enterprise
Database connections	999
Batch	Yes
Enterprise Reporting	Yes
Mobility	Yes
Data Discovery	Yes
InMemory Database	Yes
Scalable Maps	Yes

Download License
Requires download key

Import License
Requires license file

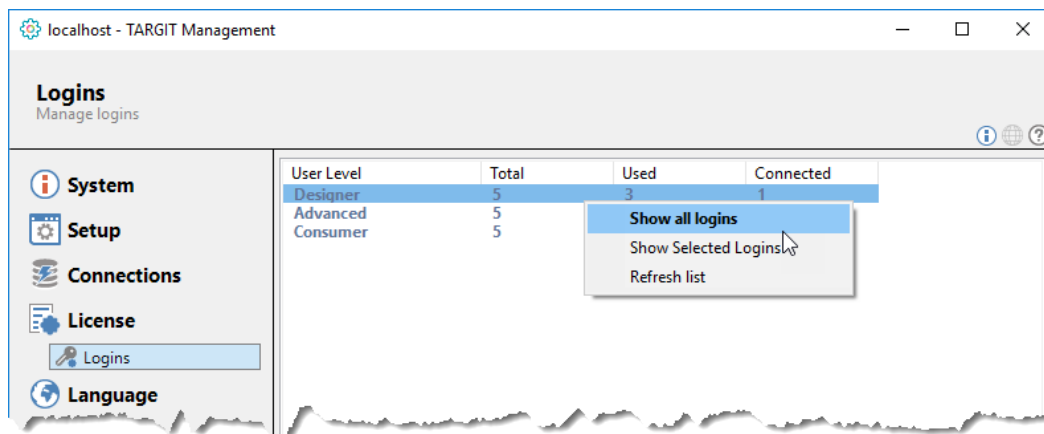
Check Online Now
Requires internet access

Administration of logins

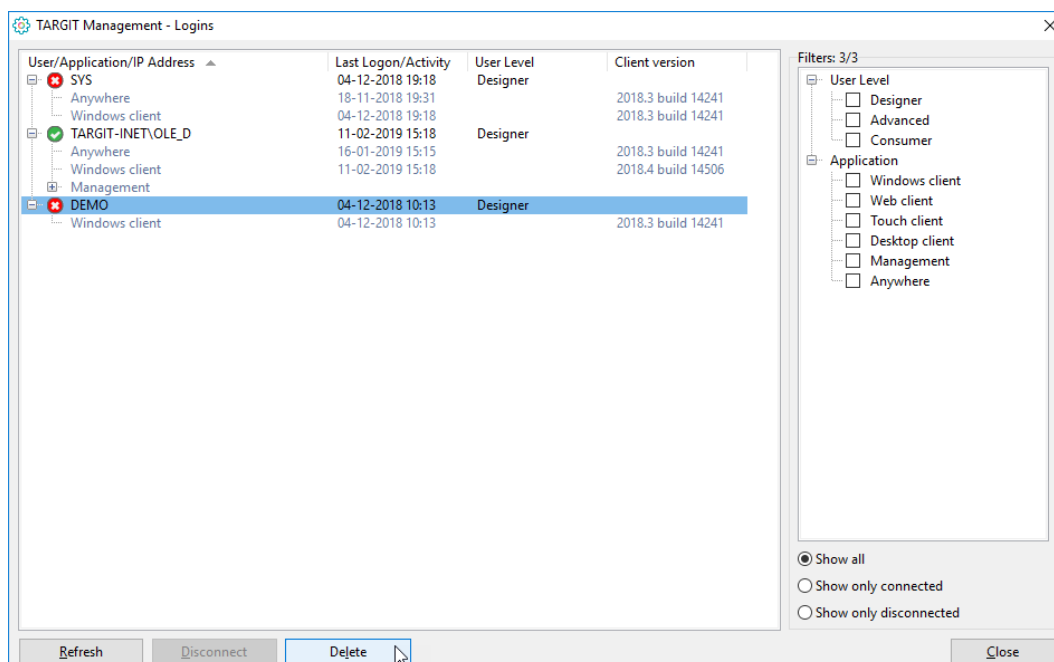
The *Logins* module of the License section in the TARGIT Management client offers some good options for getting an overview of license usage.

The main window is an overview of available, used and currently connected application users. If the used logins equals the available logins you have run out of logins.

Right click any row to display more detailed information about the logins.



From the detailed overview you can see which users have taken which licenses. You can also see who is currently connected.



Remember that the license model is *per named user*, i.e. a license is taken whenever a new user logs on to the TARGIT Decision Suite.

Eventually you may run out of available licenses. The solution might be to buy more licenses, but before you order more licenses you might use the detailed logins overview to determine whether obsolete users, e.g. ex-employees, are unnecessarily taking up some of the available licenses. Such 'outdated' users should simply be deleted, which will result in freeing up the taken licenses.

Appendix

IIS7

Before installing TARGIT Touch Server it is necessary to apply the web server role to the server, using e.g. Internet Information Services 7 on a Windows Server 2008 installation.

In order for TARGIT Touch Server to work it is important that certain features have been turned on when applying the web server role.

The following features need to be turned on:

- Security | Windows Authentication
- Application Development | ASP.Net
- Common HTTP Features | Static Content
- Common HTTP Features | Default Document
- Common HTTP Features | HTTP Redirection
- Common HTTP Features | Directory Browsing

Note: Reports have indicated installation problems caused by the User Account Control (UAC) in Windows Server 2008. In these cases UAC prevents the installer to access certain parts of the system, so the following error is shown when running TARGIT Touch Server: "Retrieving the COM class factory for component with CLSID {...} failed due to the following error: 80070005". To make TARGIT Touch Server install correctly make sure it is installed by a user where the UAC does not prevent changes to the system.

When the server role has been added to Windows Server 2008 it is possible to install TARGIT Touch Server.

Requirements

Besides installation of the web server role, Internet Information Services (IIS), the following requirements must be in place in order for TARGIT Touch Server to properly install and work.

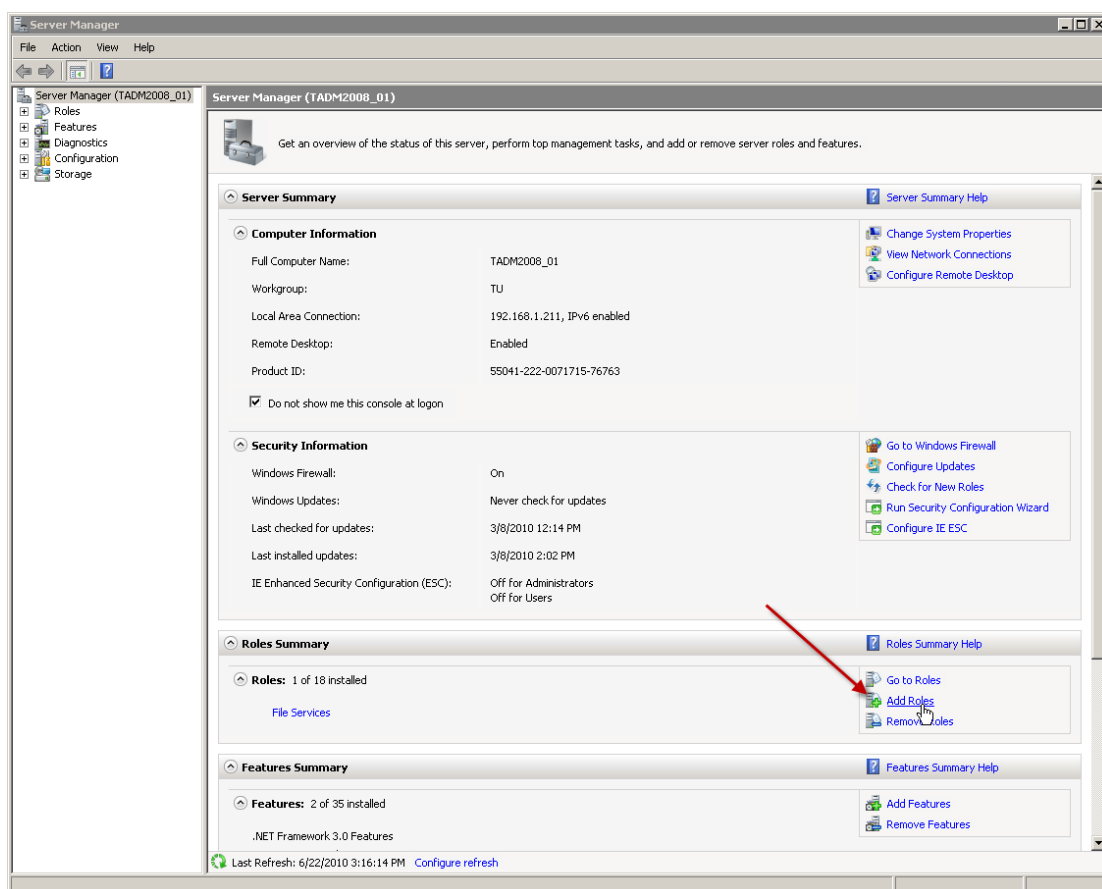
- Remove any previous versions of TARGIT Touch Server. Uninstalling TARGIT Touch Server will not affect the rest of the TARGIT installation but serves only to assure that there are no older files that may corrupt the installation. Do NOT uninstall TARGIT Decision Suite as this will remove the current entire TARGIT installation and configuration.
- MS .NET Framework 2.0 (incl. SP1) or later must be installed. On Windows Server 2008 the required .NET Framework is, by default, already installed.
- If installing TARGIT Touch Server in a 64 bit environment you have to change the IIS application pool (if the TARGIT Touch Server version is earlier than TARGIT Decision Suite 2K10) from running 64-bit to running 32-bit. On later versions 64 bit is supported and only a small adjustment will need to be made to a configuration file after the TARGIT Touch Server installer package has been run. Refer to the TARGIT BI Installation and Configuration guide for further information.

Configuring and installing the IIS 7

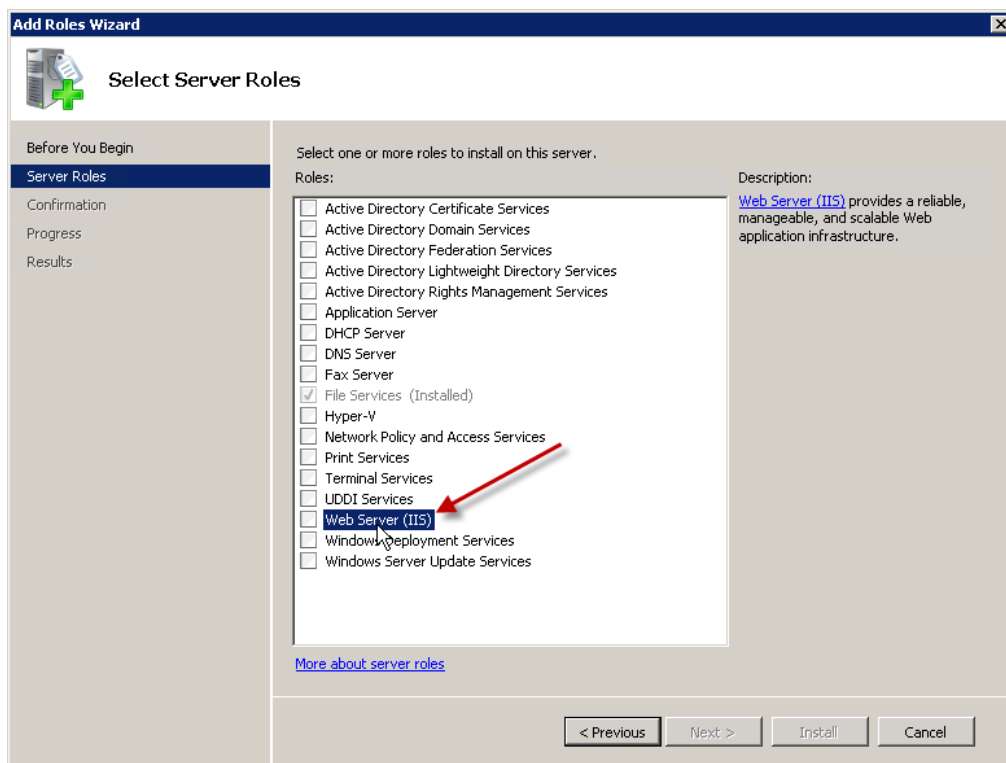
Start out by opening the *Server Manager*.



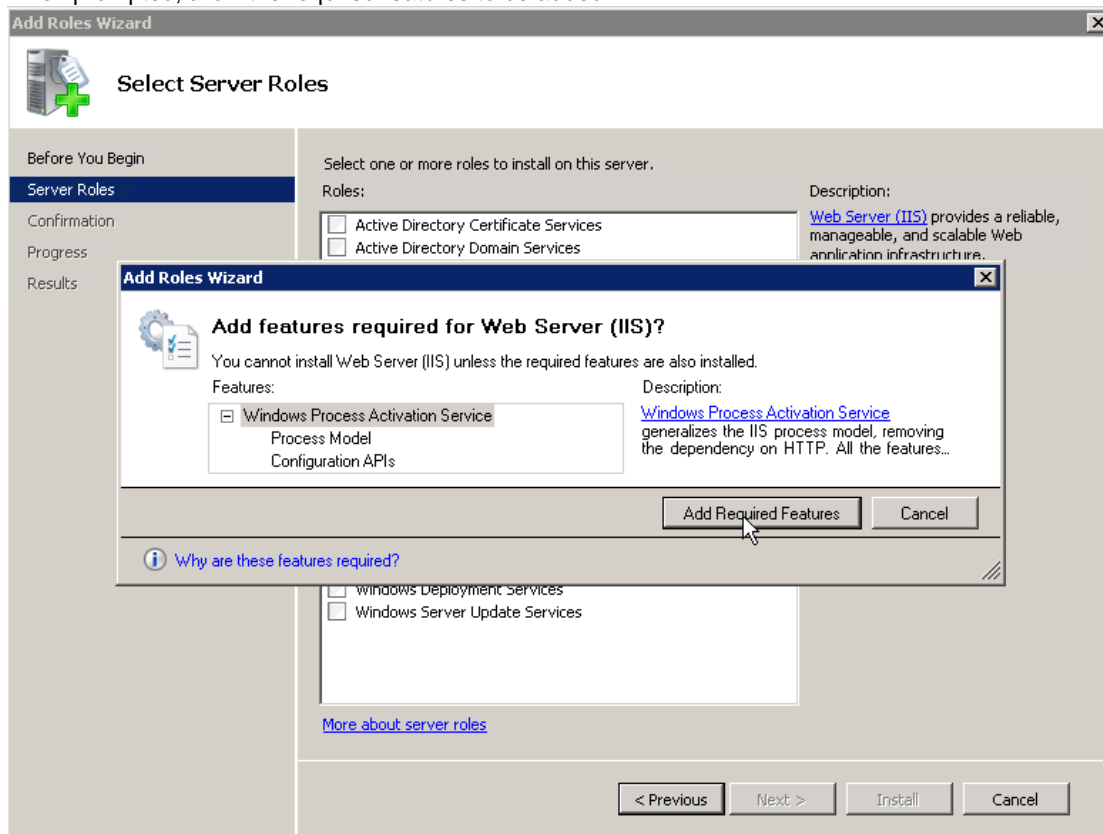
Add a new role to the server.



Add the *Web Server (IIS)* role.



When prompted, allow the required features to be added.



Click 'Next' to initiate the installation.

Add Roles Wizard

Select Server Roles

Before You Begin

Server Roles

Web Server (IIS)

Role Services

Confirmation

Progress

Results

Select one or more roles to install on this server.

Roles:

- ☐ Active Directory Certificate Services
- ☐ Active Directory Domain Services
- ☐ Active Directory Federation Services
- ☐ Active Directory Lightweight Directory Services
- ☐ Active Directory Rights Management Services
- ☐ Application Server
- ☐ DHCP Server
- ☐ DNS Server
- ☐ Fax Server
- ☒ File Services (Installed)
- ☐ Hyper-V
- ☐ Network Policy and Access Services
- ☐ Print Services
- ☐ Terminal Services
- ☐ UDDI Services
- ☒ Web Server (IIS)
- ☐ Windows Deployment Services
- ☐ Windows Server Update Services

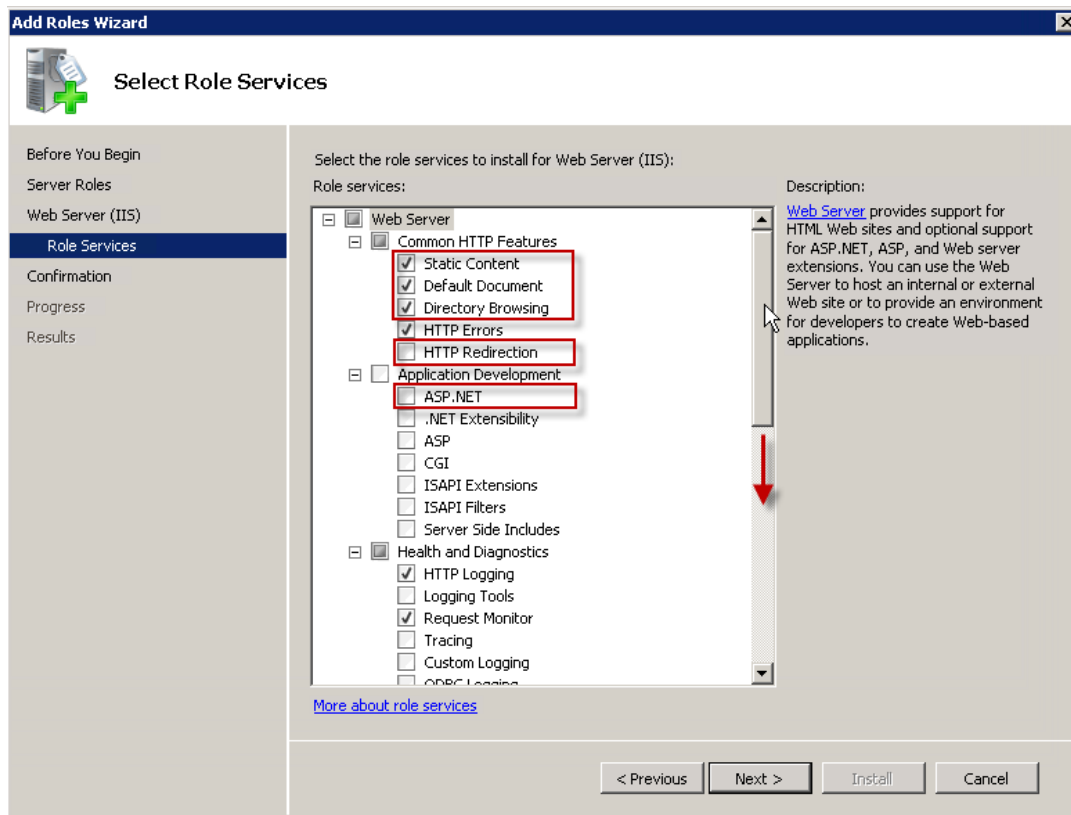
Description:

[Web Server \(IIS\)](#) provides a reliable, manageable, and scalable Web application infrastructure.

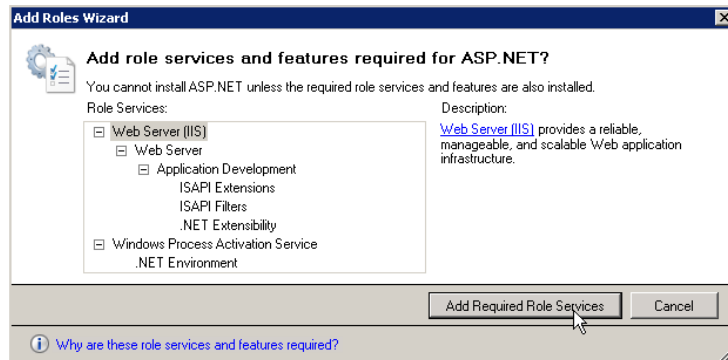
[More about server roles](#)

< Previous Next > Install Cancel

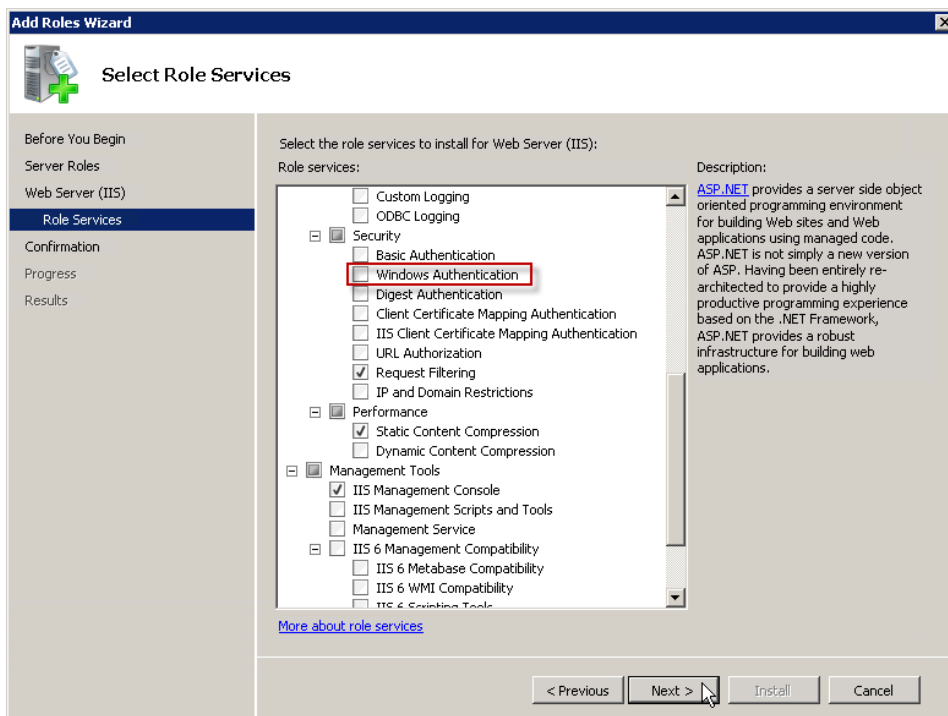
Select the required role services, as specified in the TARGIT Touch Server requirements.



If prompted, allow the required role services and features to be added.



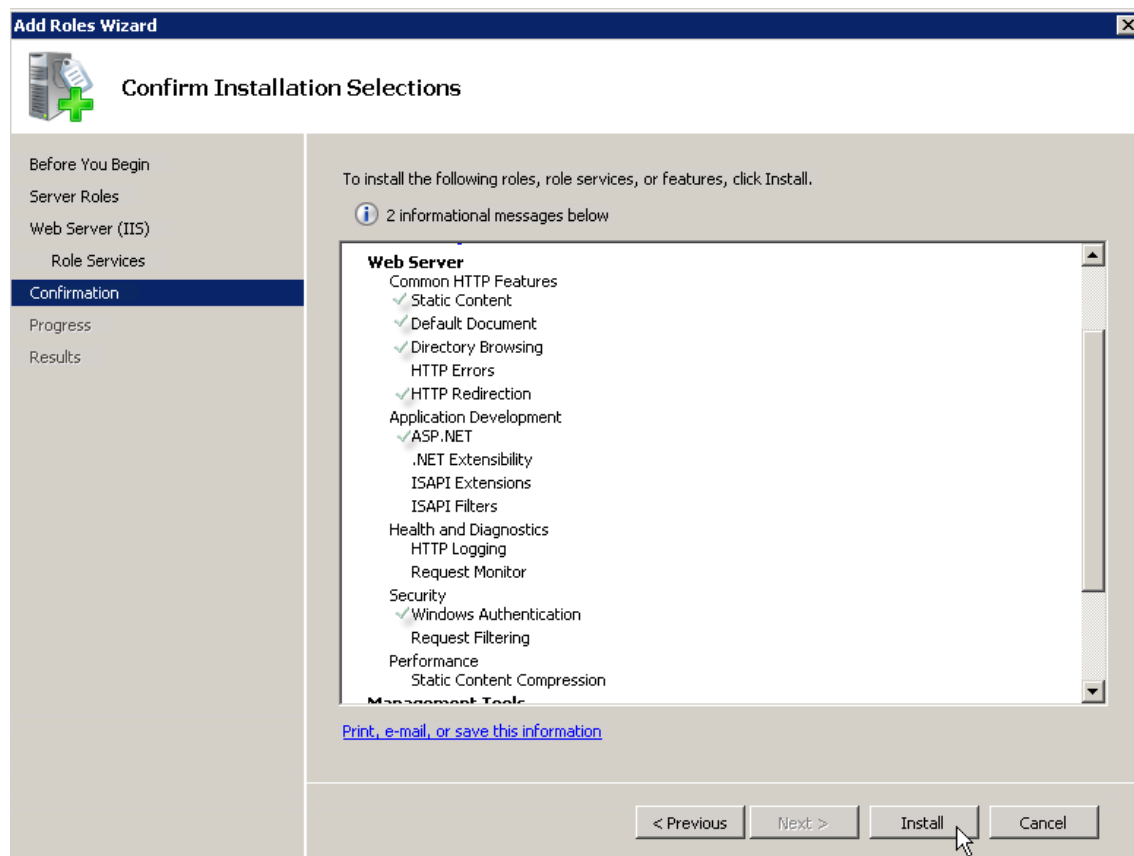
When the desired role services have been checked on the list, click 'Next' to proceed with the installation.



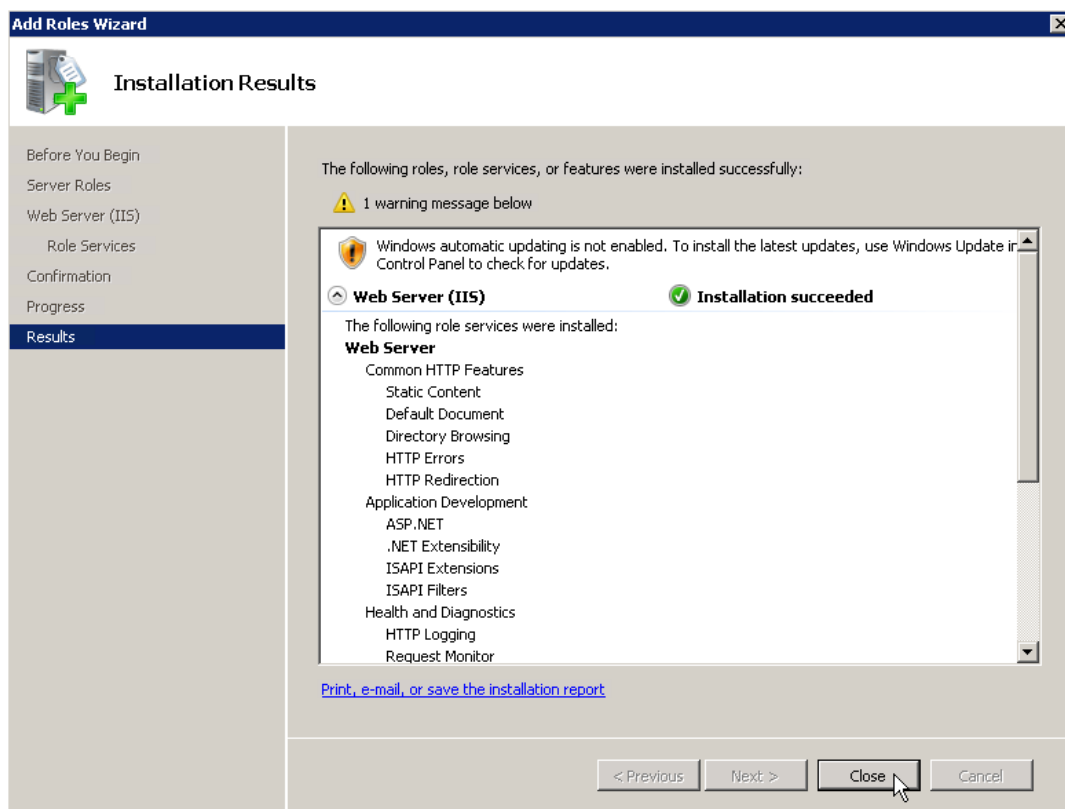
Note: Remember that the following features must be installed in order for TARGIT Touch Server to work:

- Security | Windows Authentication
- Application Development | ASP.Net
- Common HTTP Features | Static Content
- Common HTTP Features | Default Document
- Common HTTP Features | HTTP Redirection
- Common HTTP Features | Directory Browsing

Verify that all the features are shown in the summary and click *'Install'* to install the Web Server role on Windows Server 2008.



When the installation is done, the following screen will be displayed.



Check that everything went as expected, by opening a browser navigating to *http://localhost*

