



Installation Guide

For IM Sequencer 7.0

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1 Introduction

This document covers the installation of the Traxion products:

- IM Sequencer
- IM Sequencer Automation

1.1 Purpose

In addition to installation information about the various Traxion products this document provides information about security, licensing, and tips for both general and troubleshooting.

The following table lists the publishing history of this document.

Version	Revision Date	Description
1	February 26, 2018	First publication of this document for IM Sequencer version 7 software

The audience for this document is intended to be the partners and consultants working with IM Sequencer implementations.

2 Before you begin

This section describes the software and hardware requirements, the system architecture, and the location of the IM Sequencer software for download.

2.1 Obtaining the IM Sequencer software

The IM Sequencer software is available for download from the IM Sequencer website <http://www.imsequencer.com>. The software is delivered as an .msi file, with a wizard to help you through the installation process.

For more information about the installation process, contact Traxion through:

- Email : support@imsequencer.com

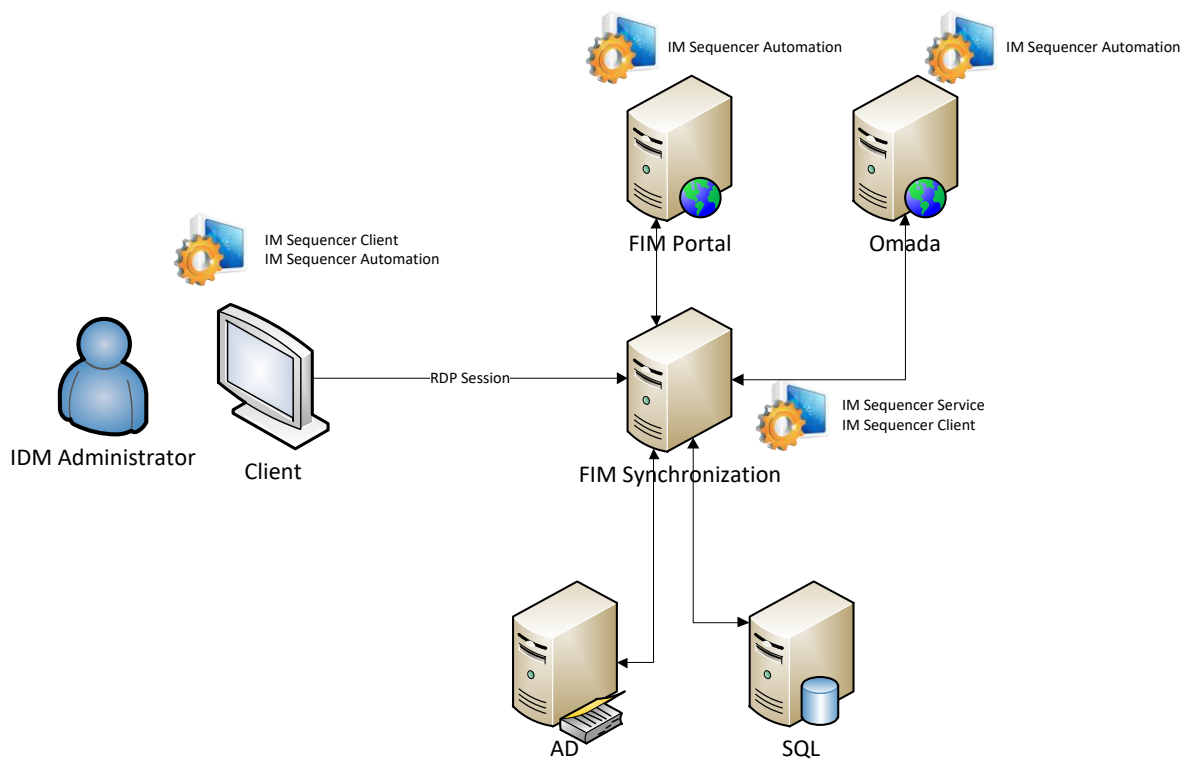
2.2 System Architectures

The IM Sequencer contains 2 main components, 1 component is the IM Sequencer Service which runs as a service on the background that executes tasks on predefined time or events. The 2nd component is the IM Sequencer Client which allows IDM administrators to configure and manually run synchronization profiles

The IM Sequencer service is always installed on the synchronization server, you can use the IM Sequencer client to connect to remote synchronization servers, but this only applies for running synchronization profiles, to configure the scheduled tasks you need to install the client on the same server as where the service is installed.

IM Sequencer Automation is installed on the FIM/MIM Portal, Omada Identity Manager servers or other remote services that need IM Sequencer Automation.

Below is an overview where different components can be located/installed



- The client can run the IM Sequencer Client to connect remotely to the FIM/MIM Synchronization server to start management agents (optional).
- The IM Sequencer Automation can be installed on the client to use PowerShell to remotely connect to the FIM/MIM Synchronization server running the IM Sequencer Service (optional).
- The FIM/MIM Synchronization server runs the IM Sequencer Service and IM Sequencer Client (this is mandatory).
- The Omada Portal does not run anything, but the Omada workflow from the IM Sequencer Automation is installed to remotely connect to the FIM/MIM Synchronization server running the IM Sequencer Service (optional).

2.3 Prerequisites

2.3.1 Security requirements

The IM Sequencer service needs to run under service account. This service accounts needs to have following security rights which some are configured during setup:

Not automatically configured during setup

- Member of the FIMSyncAdmins (for FIM 2010 and MIM 2016) or MIISAdmins (For MIIS or ILM) to execute management agent runprofiles
- Create messages in eventlog for logging important messages

Automatically configured during setup

- 'Logon as a service' to start the windows service
- Read & write access to the installation directory to write configuration, reporting and logging

Every windows account that uses the IM sequencer client needs to be member to the FIMSyncAdmins (for FIM 2010 or MIM 2016) or MIISAdmins (For MIIS or ILM) to execute management agent runprofiles.

2.3.2 Software requirements

The IM Sequencer software runs in a Microsoft Server environment. Each component can run on a Windows Server, Windows 2003, Windows 2008, Windows 2012 or Windows 2016. The client can run on Windows XP, Windows Vista, Windows 7 or Windows 10

IM Sequencer requires at least **.NET 4** or higher to be installed on the server running any IM Sequencer component.

The IM Sequencer software is designed to work with:

- MIIS 2003 + SP1& SP2 (Microsoft Identity Integration Server)
- ILM 2007 + FP1 (Identity Lifecycle Manager)
- FIM 2010 + R2 (Forefront Identity Manager)
- MIM 2016 + SP1 (Microsoft Identity Manager)

The IM Sequencer Automation software is designed to work with:

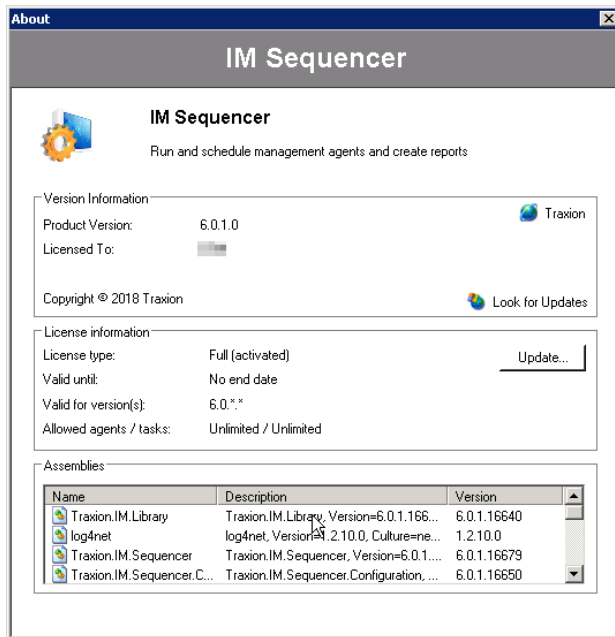
- FIM workflow
- Omada workflow (code methods)
- PowerShell
- Web services

2.3.3 Hardware requirements

There are no special hardware requirements

2.4 Upgrading from Previous releases

Before you do a upgrade make sure your license allows you to upgrade, to see your current license restrictions start the IM Sequencer Client go to “Help” → “About”, the following screen is shown:



The **valid for version(s)** indicates if your current license is suitable to use for the new version. If you think this information is incorrect contact our sales department at sales@imsequencer.com to obtain a license for IM Sequencer 7.

2.4.1 Upgrading from 5.x/6.x to 7

1. Use the IM Sequencer installation wizard to install the IM Sequencer
2. The installation will detect the current installed components and finds the current installed directory, verify if these settings are correct and proceed with the upgrade

Note: version 7 is 64 bit, so please reconsider to move the installation from the default /program files (x86) to /program files if the default directory is used during installation

3. If the IM Sequencer service is installed the current username and domain are prefilled, you will need to provide the correct password for the service account, and this password will be verified.
4. When the upgrade has finished you can start the IM Sequencer Client

Note: The upgrade will replace some configuration files but all reports, logging and run profiles will not be removed during the upgrade.

3 Installing IM sequencer

This section covers the installation of IM Sequencer.

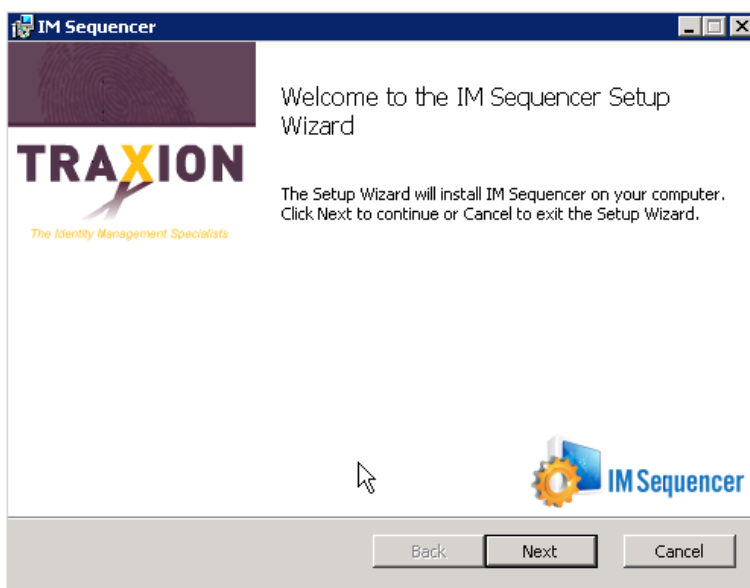
Note If you are upgrading from a previous version, see *Upgrading from Previous Releases*.

3.1 Running the IM Sequencer installation wizard

Note: To install and configure, you need to have Microsoft .Net Framework 4 installed before proceeding.

The installation procedure is handled by an installation wizard.

1. Run the file IM Sequencer Setup.msi. If you receive a security warning asking whether you want to execute the file, click **Run** to continue. This launches the installation wizard. Click **Next**.



2. Select "I accept the terms in the license agreement" and then click **next**.

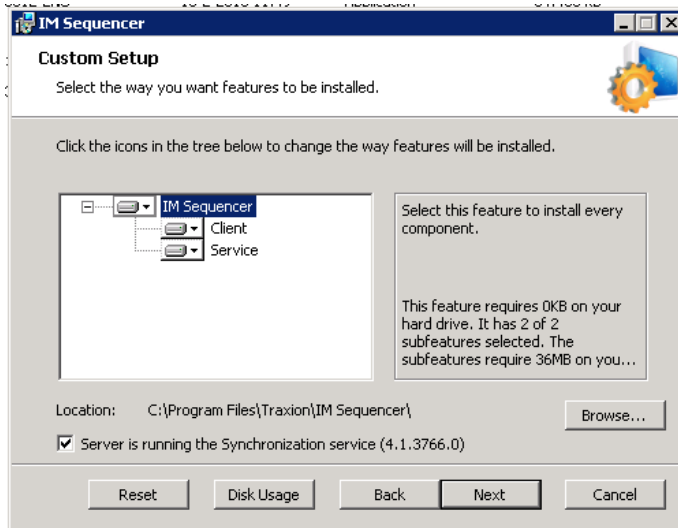


3. The wizard lets you decide which features you want to install, deselect the Client or Service feature if you don't want to install the specified feature.

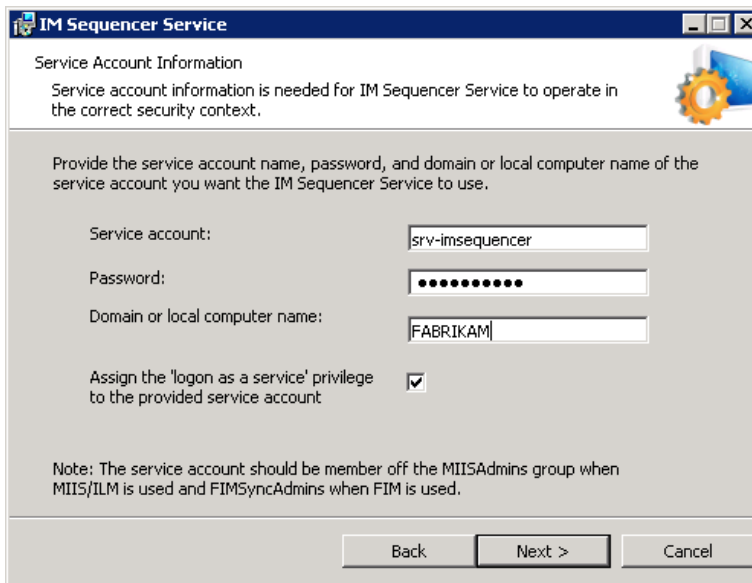
You can change the folder for your installation by clicking on **browse**. If you want the application to run in the program files directory server you can leave this default.

Select **next** to continue

Note: The installation will check if FIM 2010 or MIM 2016 is installed, if the checkbox is not automatically checked and FIM 2010 or MIM is installed check the checkbox manually, this will make sure the IM Sequencer is correctly configured for using FIM 2010 or MIM 2016

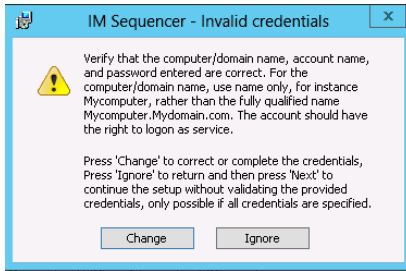


4. When the “Service” feature is selected an additional dialog is displayed, specify the username and password to be used by the IM Sequencer Service. Press **next** to continue.



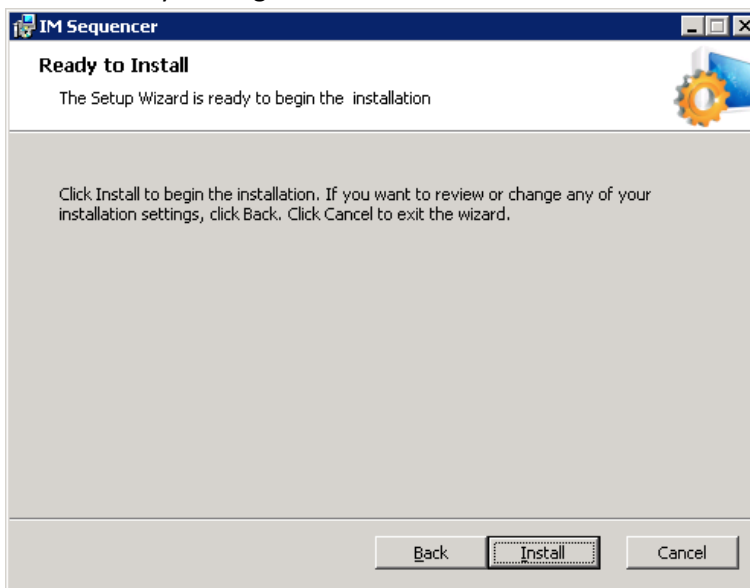
Note: The checkbox “assign the ‘logon as a privilege’ ...” is checked at default, the installer will assign the privilege is the privilege is not already assigned, this privileged is necessary to start the service using the specified account.

5. If the credentials are incorrect the following screen is displayed:

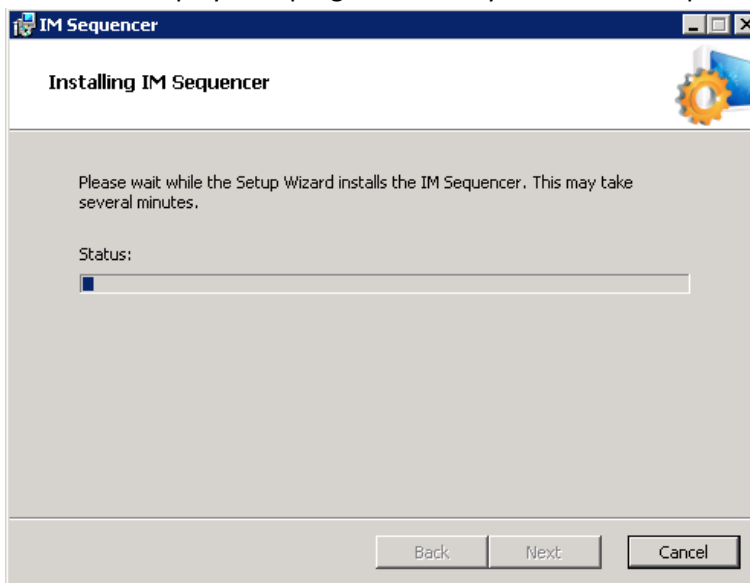


Due to system policies it can be that the credentials verification fails, if the password is correct press 'Ignore' to install the service with the provided username & password

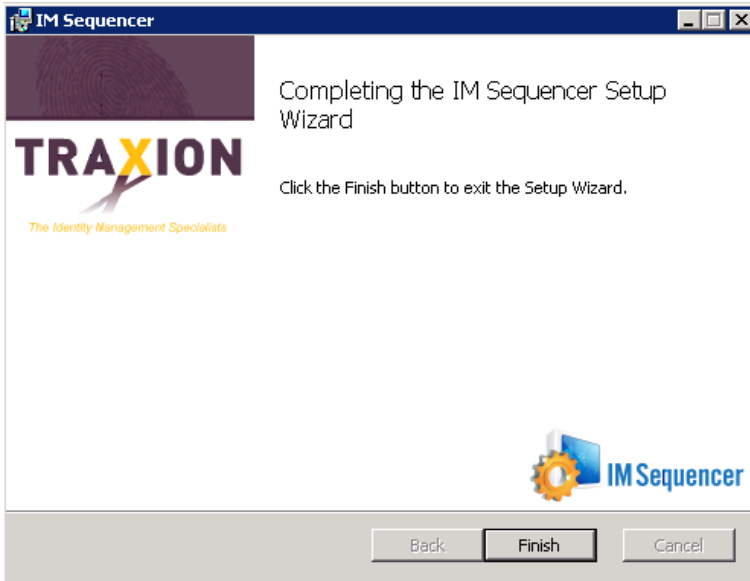
6. The actual installation begins. Click **Back** button to make changes, or proceed with the installation by clicking the **Install** button.



7. The wizard displays the progress bar for your installation process.



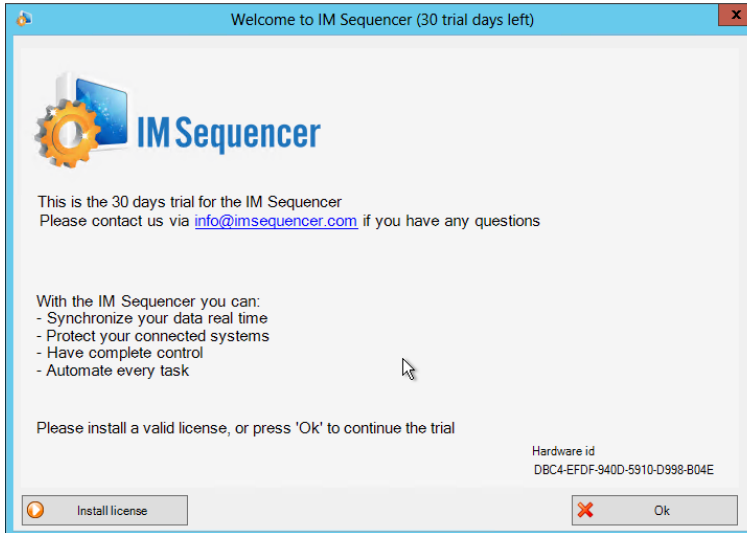
- When the wizard completed the installation, click Finish button.



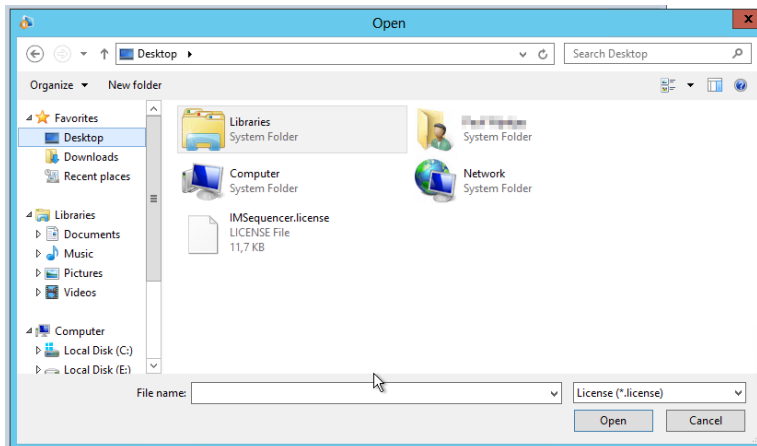
3.2 Running the IM Sequencer for the first time

1. Start **IM Sequencer Client**.
2. A dialog will be shown, you can click '**OK**' to start your 30 trial license.

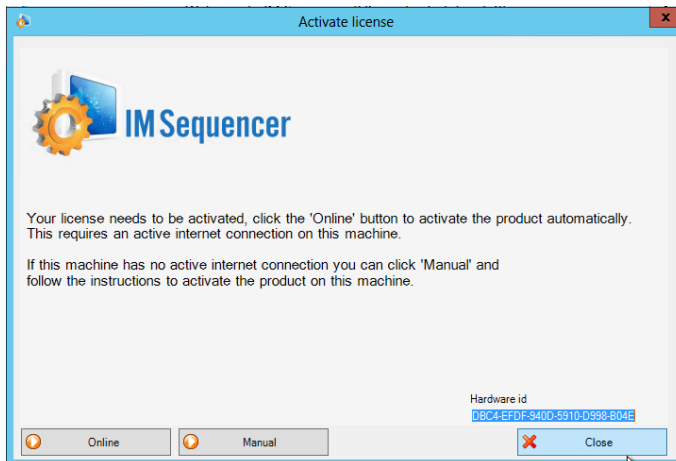
If you already have a license click '**Install license**'



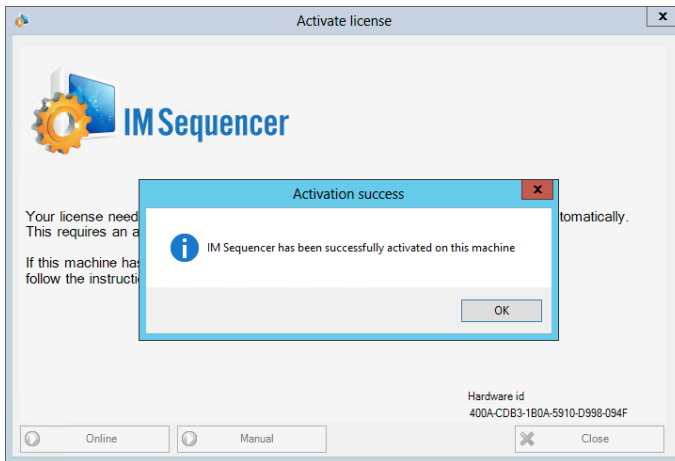
3. Navigate to, and select the, license file (e.g. IMSequencer.license). Click **Open**.



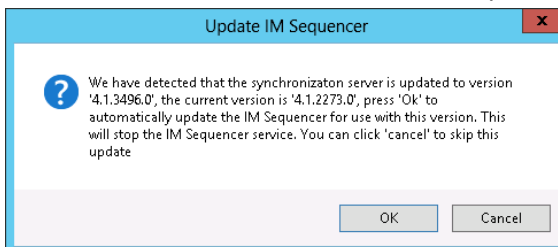
4. Click **Online** to activate the license automatically (this requires an internet connection).



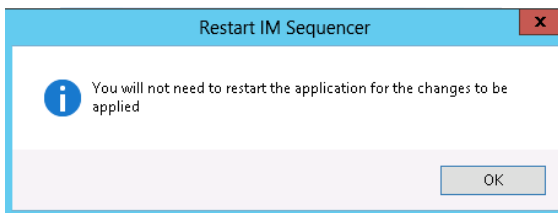
5. When the activation succeeded successfully, the following is displayed. Click **OK**.



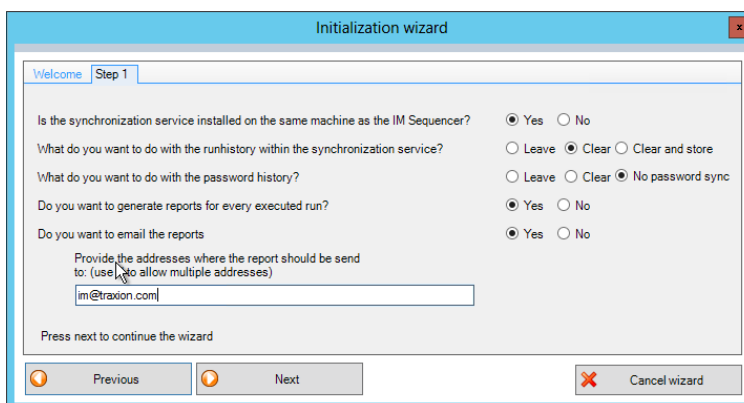
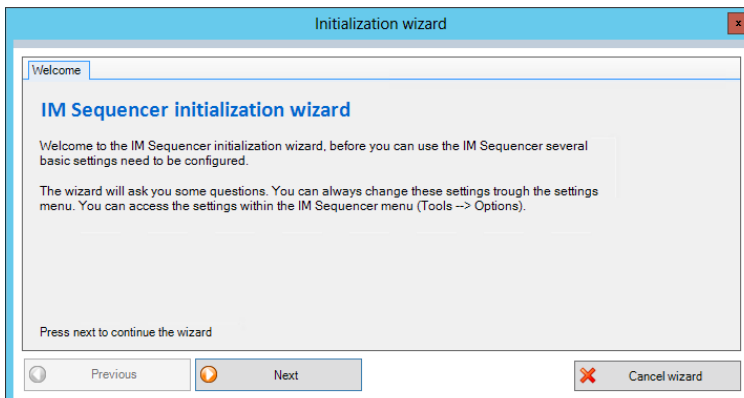
- The client detects the currently running FIM/MIM version and requests to update the needed FIM/MIM assemblies if necessary. Click **OK**.



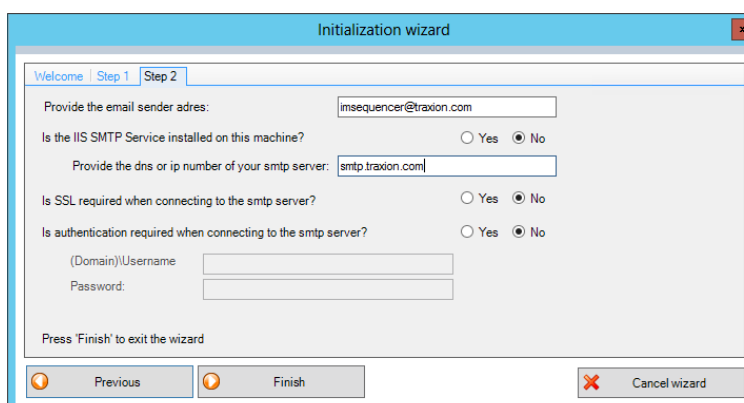
- A restart is request to apply the changes made in the previous step. Click **OK**.



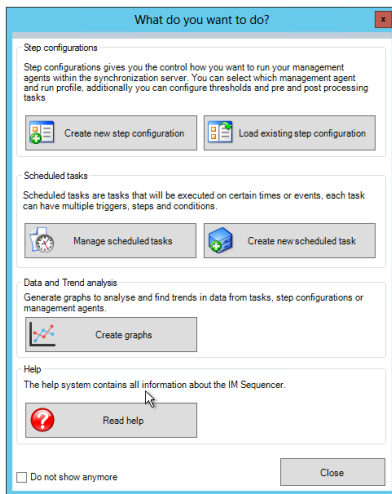
8. When the application is launched the installation wizard is started, this wizard will help you to get started. Press **Next** to continue.
9. Select the options you desire to configure the application and press **next** to continue.



10. When you have configured email addresses you will be asked to enter email server settings, this is needed for the IM Sequencer to email reports. Press **Finish** to finish the wizard.



11. After you have finished the initialization dialog the Quick start dialog is shown, this dialog contains option that brings you directly to the desired option.



Note: You can check the checkbox below when you don't want to see this dialog anymore when you start the application.

12. You can read the local help file, this help file contains a 'getting started' section that will guide you to setting up the IM Sequencer, there is also a wizard available for creating scheduled tasks.

4 Installing IM Sequencer Automation

This section covers the installation of IM Sequencer Automation.

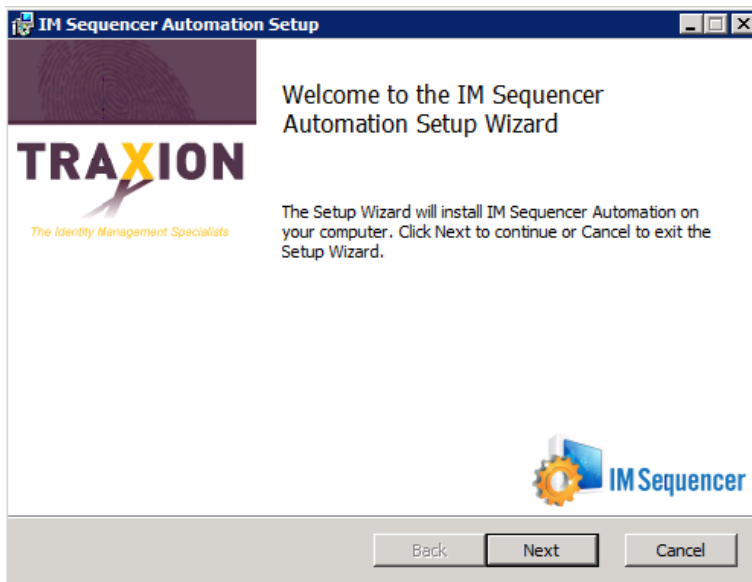
Note: The FIM workflow component has been removed from the latest release, if you have any questions contact Traxion Services

4.1 Running the IM Sequencer Automation installation wizard

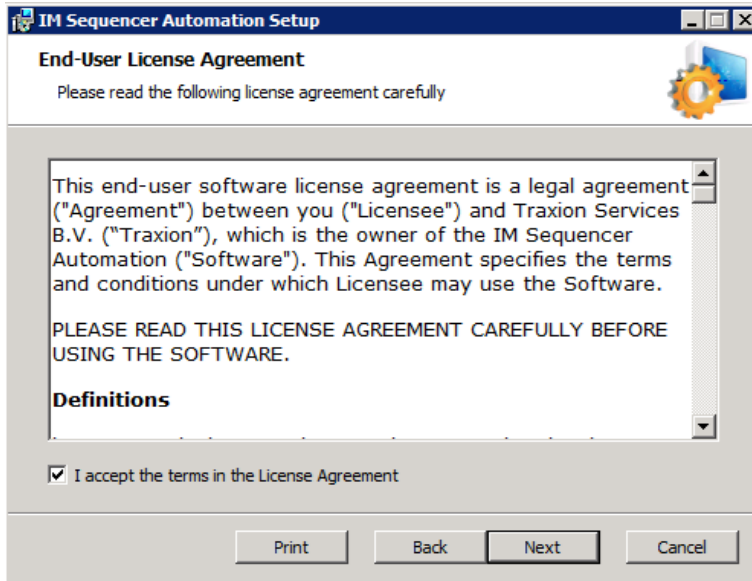
Note: In order to install and configure, you need to have Microsoft .Net Framework 3.5 installed before proceeding.

The installation procedure is handled by an installation wizard.

1. Run the file IM Sequencer Automation Setup.msi. If you receive a security warning asking whether you want to execute the file, click **Run** to continue. This launches the installation wizard. Click **Next**.



2. Select "I accept the terms in the license agreement" and then click **next**.

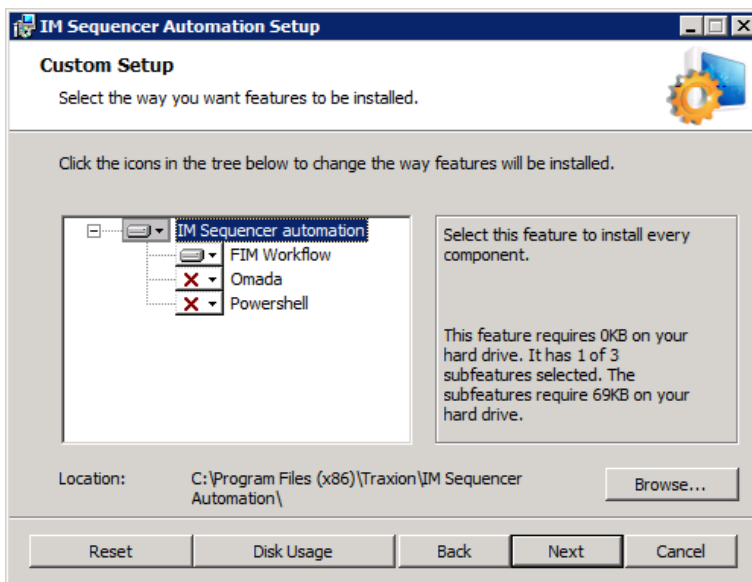


3. The wizard lets you decide which features you want to install, deselect the FIM Workflow, Omada or PowerShell feature if you don't want to install the specified feature.

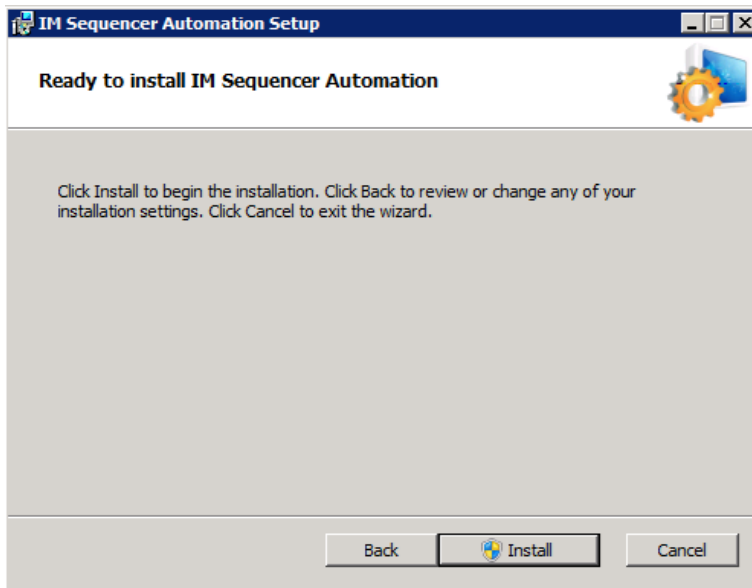
You can change the folder for your installation by clicking on **browse**. If you want the application to run in the program files directory server you can leave this default.

The Omada installation directory can be changed when you click on the Omada feature, here you can provide the location for the `..\omadaEnterprise\bin` directory

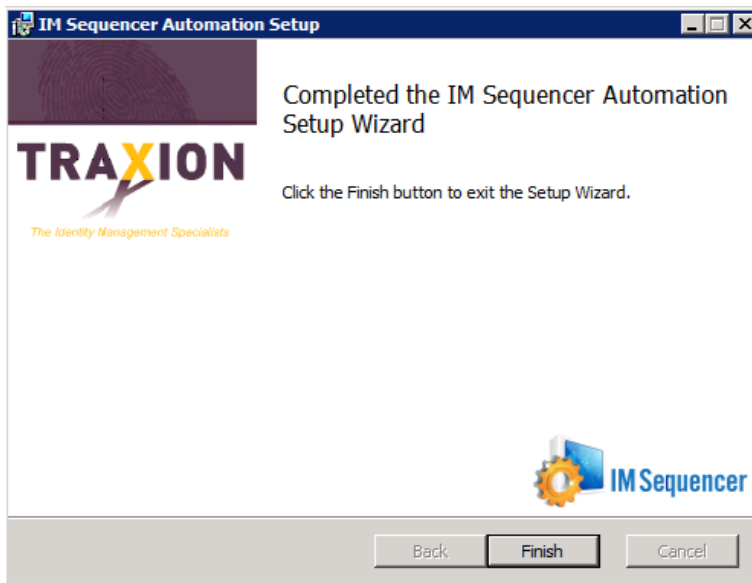
Select **next** to continue



4. The actual installation begins. Click **Back** button to make changes, or proceed with the installation by clicking the **Install** button.



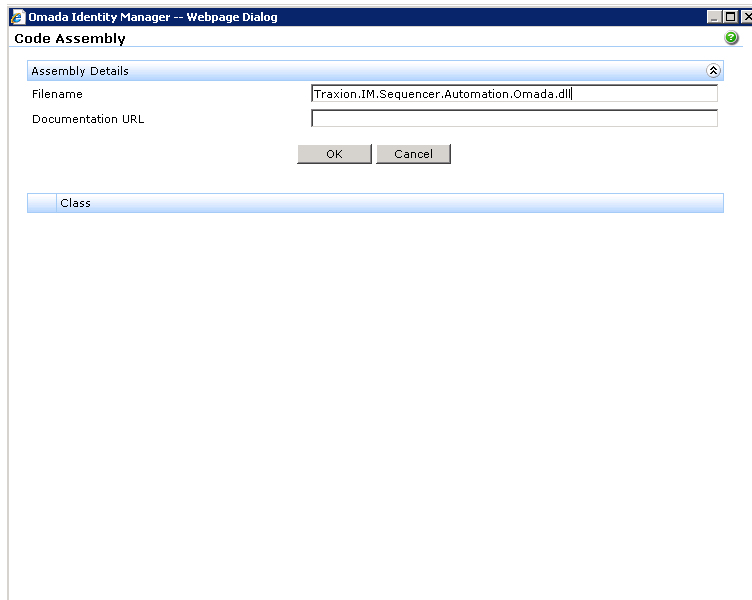
5. When the wizard completed the installation, click Finish button.



4.2 Configuring IM Sequencer Omada workflow

When you have installed the IM Sequencer Automation and want to use the Omada workflow component, additional configuration steps are necessary.

1. Login to Omada enterprise and go to “Setup” → “Master Data” → “Code Assemblies” and press **New** and set the value to `Traxion.IM.Sequencer.Automation.Omada.dll` then press **Ok**



2. The assembly will be added to the list
3. Go to the SQL server where the Omada database is hosted and execute the script **AddOmadaCustomerSettings.sql** that is located in the installation directory (C:\Program Files (x86)\Traxion\IM Sequencer Automation\Omada support)

This will add the customer settings to the Omada database

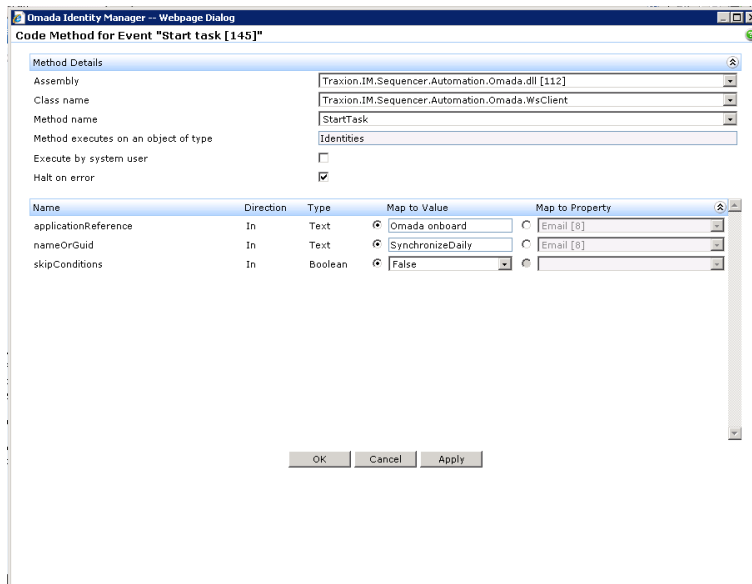
```

use OmadaEnt
INSERT INTO dbo.tblCustomerSetting ([Key],Name,Description,Type,ValueStr) VALUES ('IMSequencerWS','IM Sequencer WS', 'Location to the IM Sequencer webservice',0,'http://localhost:8000/IMSequencer/SchedulerEngine')
INSERT INTO dbo.tblCustomerSetting ([Key],Name,Description,Type,ValueStr) VALUES ('IMSequencerWSDefRef','IM Sequencer WS default app reference', 'Default application reference can be used for tracking',0,'')
INSERT INTO dbo.tblCustomerSetting ([Key],Name,Description,Type,ValueBool) VALUES ('IMSequencerWSSecure','IM Sequencer WS security enabled', 'Use secure connection',0,1)
INSERT INTO dbo.tblCustomerSetting ([Key],Name,Description,Type,ValueBool) VALUES ('IMSequencerWSLog','IM Sequencer WS enable logging', 'Enable logging',0,0)
INSERT INTO dbo.tblCustomerSetting ([Key],Name,Description,Type,ValueBool) VALUES ('IMSequencerWSConfig','IM Sequencer WS use .net conf file', 'Use .net configuration file (web.config)',0,0)
INSERT INTO dbo.tblCustomerSetting ([Key],Name,Description,Type,ValueBool) VALUES ('IMSequencerWSEnabled','IM Sequencer WS Enabled', 'Enable or disable the webservice call',0,1)
    
```

IMSequencerWS:	this is where the IM Sequencer service is located (on what server)
IMSequencerWSDefRef	Optional reference this can be used for reporting purposes, you will see this value on the report.
IMSequencerWSSecure	Use a secure connection (user is validated)
IMSequencerWSLog	Information is logged to the console
IMSequencerWSConfig	Search for the configuration in the web.config
IMSequencerWSEnabled	Webservice is enabled, if set to false the methods will return false (but the webservice is not called)

4.3 Using IM Sequencer Omada workflow

1. After the settings are created you can call the desired action by selecting the correct method when you create a code method.



4.4 Using IM Sequencer PowerShell

When you have installed the IM Sequencer Automation and want to use the PowerShell you can use the predefined scripts. The scripts are located in:

C:\Program Files (x86)\Traxion\IM Sequencer Automation\PowerShell support

You can also create your own scripts, the following settings are imported:

```
[Traxion.IM.Sequencer.Automation.SchedulerEngineWsClient]::EnableLogging = 1;
```

Log message to console

```
[Traxion.IM.Sequencer.Automation.SchedulerEngineWsClient]::UseConfigurationFile= 1;
```

Use default .Net configuration file (powershell.config)

```
#Load library from local directory
#$loadLib = [Reflection.Assembly]::LoadFrom("Traxion.IM.Sequencer.Automation.dll")
#Load library from GAC
$loadLib = [Reflection.Assembly]::LoadWithPartialName("Traxion.IM.Sequencer.Automation")

#Enable logging, messages will be send to the console
[Traxion.IM.Sequencer.Automation.SchedulerEngineWsClient]::EnableLogging = 1;

#Open secure connection
$SchedulerEngine = new-object Traxion.IM.Sequencer.Automation.SchedulerEngineWsClient http://localhost:8000/IMSequencer/SchedulerEngineService, 1;

foreach ($task in $SchedulerEngine.TaskNames)
{
    if ($SchedulerEngine.IsTaskRunning($task))
    {
        Write-Host "Task : '$task' is running"
    }
    else
    {
        Write-Host "Task : '$task' is not running"
    }
}
```

At default the assembly is located in the GAC, therefore you only need to provide the library you want to load. When creating a new instance you specify the url which to connect to and optionally define if you want a secure connection (default = true)

With PowerShell you can do the following things:

- Start a task (with or without a condition)
- Stop a task
- Stop all tasks
- Disable a task
- Enable a task
- Disable entire engine (only until next restart)
- Enable engine (if disabled previously)
- Get all task names
- Check if task is running
- Count the number of tasks (running or not)

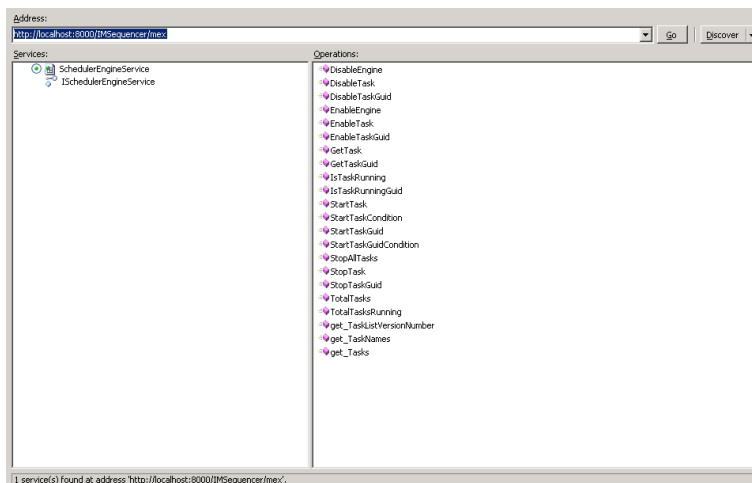
4.5 Using IM Sequencer WCF services

You can connect to the IM Sequencer WCF service using the default url:

<http://localhost:8000/IMSequencer/SchedulerEngineService>

Where local host can be replaced with the actual server name where the IM Sequencer service is running.

The following operations are currently supported



5 Appendix A: Logging

The IM Sequencer application is divided in two separate components, one component is called the client the other is the service. The service manages the scheduled tasks, the client actually runs the step configurations.

Logging information can be found at default in "<Installation Directory>\Traxion\IM Sequencer\logs"
This is a good place to start troubleshooting when particular behavior is not expected

5.1 IM Sequencer Client

The logging for the IM Sequencer Client is defined in the file "IM Sequencer Client.exe.config" This file can be found in the IM Sequencer installation directory

The IM Sequencer logs at default only INFO messages, to change this locate the tags INFO and change them to TRACE as shown below:

```
<!-- Print only messages of level defined in the package Traxion.IM.Sequencer.Client -->
<logger name="Traxion.IM.Sequencer.Client">
  <level value="TRACE" />
</logger>
<!-- Print only messages of level defined in the package Traxion.IM.Sequencer -->
<logger name="Traxion.IM.Sequencer">
  <level value="TRACE" />
</logger>
<!-- Print only messages of level defined in the package Traxion.IM.Library -->
<logger name="Traxion.IM.Library">
  <level value="TRACE" />
</logger>
<!-- Print only messages of level defined in the package Traxion.IM.WMI -->
<logger name="Traxion.IM.WMI">
  <level value="DEBUG" />
</logger>
<!-- Print only messages of level defined in the package Traxion.IM.Scheduler -->
<logger name="Traxion.IM.Scheduler">
  <level value="TRACE" />
</logger>
</log4net>
```

The client does not need to be restarted.

5.2 IM Sequencer Service

The logging for the IM Sequencer Service is defined in the file "IM Sequencer Service.exe.config" This file can be found in the IM Sequencer installation directory

The IM Sequencer logs at default only INFO messages, to change this locate the tags INFO and change them to TRACE as shown below:

```
<!-- Print only messages of level defined in the package Traxion.IM.Library -->
<logger name="Traxion.IM.Library">
  <level value="TRACE" />
</logger>

<!-- Print only messages of level defined in the package Traxion.IM.Scheduler -->
<logger name="Traxion.IM.Scheduler">
  <level value="TRACE" />
</logger>
</log4net>
```

The service does not need to be restarted.