

SKF @ptitude Observer

User Manual Part No. 32170700-EN
Revision N – January 2019
Observer 11.0

⚠ WARNING! - Read this manual before using the product. Failure to follow the instructions and safety precautions in this manual can result in serious injury, damage to the product, or incorrect readings. Keep this manual in a safe location for future reference.

SKF Group

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For general product information (i.e., product data sheet, accessories catalog, etc.), visit the [Condition Monitoring Products](#) page on SKF.com and select the appropriate product link.

Technical Support Group

Discuss/review issues of specific interest with maintenance and reliability specialists from around the world at the [SKF Knowledge Centre](#).

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1 Requirements

SKF @ptitude Observer can be used in a network with an unlimited number of users. However, there are minimum requirements for computers running SKF @ptitude Monitoring Suite.

SKF @ptitude Monitoring Suite contains the following components:

- @ptitude Observer
- @ptitude Observer database administrator
- @ptitude Observer monitor
- @ptitude Observer on-line device configurator
- @ptitude Observer data pump

To be able to install SKF @ptitude Monitoring Suite, check the hardware and operating system requirements listed below.

 **Before installing the software ensure that the requirements listed below, are fulfilled.**

Hardware Requirements

- One available Ethernet network connection for on-line systems
- A Pentium IV, 2.0 GHz or higher CPU
- A recommended minimum of 2.0 GB RAM
- Mouse, track-ball, digital board or similar
- Graphics chip capable of displaying 16-bit colours with a minimum resolution of 1 366 x 768. For optimal experience when using @ptitude Observer, it is recommended to have a resolution of 1 920 x 1 200 or more.
- A DVD ROM drive for installation
- Free space on a hard disk, 500 MB (client) and 1.2 GB (database server) excluding machine and measurement data. The space necessary for the database depends on the amount of stored data.
- A backup system is recommended

Operating System Requirements

SKF @ptitude Observer supports the following operating systems:

- Microsoft Windows 2003 Server with Service Pack 1 or above
- Microsoft Windows 2008 Server
- Microsoft Windows 2012 Server
- Microsoft Windows 2016 Server
- Microsoft Windows Vista
- Microsoft Windows 7
- Microsoft Windows 8
- Microsoft Windows 10

General Guidelines

In order to have a properly functioning SKF @ptitude Observer, follow the general guidelines on installation and setup listed below.

Installation and Setup Guidelines

1. Insert the **SKF @ptitude Observer DVD**.
2. Install a **database engine** which will be used by @ptitude Observer.

The @ptitude Observer system uses Microsoft SQL Server 2014 as the recommended database engine, but it is also compatible with other versions such as SQL Server 2005, 2008, 2012 and 2016. Included in the SKF @ptitude Observer DVD are a royalty free version of SQL Server called Microsoft SQL Server Express. The royalty free version can be used for databases with sizes up to 10 GB.

 - To install SQL Server Express version, follow the instructions in [SQL Server Express Installation](#).
 - To install a different version of SQL Server other than Express, check the SQL Server documentation for installation instructions.
3. Install SKF @ptitude Monitoring Suite components by following the instructions in @ptitude Observer Suite Installation.

SKF @ptitude Monitoring Suite contains the following components:

 - **@ptitude Observer** is for data management and analysis of measurement data for condition monitoring. @ptitude Observer runs on all clients.
 - **@ptitude Observer database administrator** is the tool for administrating the @ptitude Observer databases.
 - **@ptitude Observer monitor** is the server service which works as the connector between IMx system, database and @ptitude Observer clients. Detailed information can be found in [@ptitude Observer Monitor Service](#).
 - **@ptitude Observer Online device configurator** is a tool which can set the network configuration and identification for the on-line device. It also enables viewing of what the on-line device is measuring right now, clearing measurement data, showing current measurement configuration and synchronizing the time.
 - **@ptitude Observer data pump** enables the export and import of @ptitude Analyst XML files.

4. Install @ptitude Observer database(s).

To be able to run @ptitude Observer, at least one database must be installed.

The database must be compatible to the latest installed @ptitude Observer version.

The installation of a new database or upgrading of an existing database is done through @ptitude Observer Database administrator.

If @ptitude Observer Database administrator component has not been installed, repeat step 3 and make sure to select @ptitude Observer Database administrator at Custom Setup screen.

- Start @ptitude Observer Database administrator by clicking on the shortcut on the start menu located under **Programs \ SKF @ptitude Monitoring Suite X.Y \ @ptitude Observer Database Administrator**.
- The instruction for installing Observer database is found in [Install Observer Database](#) section. In addition, further detailed information is found in [@ptitude Observer Database Administrator Manual](#).

The database settings are stored in a connection file for each database.

5. Set up @ptitude Observer with language and register with the license key.

- Start @ptitude Observer by clicking on the shortcut on the start menu located under **Programs \ SKF @ptitude Monitoring Suite X.Y \ @ptitude Observer**.
- Select a language to use.
- Register with the license key.

It is possible to change the language and license key after the initial settings have been made. For more information, refer to [Edit Observer Settings](#).

6. Create a connection between @ptitude Observer and database(s).

The connection between @ptitude Observer and database(s) is described in detail in Getting Started section of @ptitude Observer User Manual.

7. Set up the configuration of the monitor settings.

To be able to use @ptitude Observer as an on-line system, the communication and database storage are performed by the @ptitude Observer monitor service. The configuration of the monitor settings is described in [@ptitude Observer Monitor Service](#).

If @ptitude Observer monitor component has not been installed, repeat step 3 and make sure to select @ptitude Observer monitor at the Custom Setup screen.

8. Set up @ptitude Observer monitor computer.

If a PC is being used as the @ptitude Observer monitor computer, then [IMx/MasCon Network Settings](#) need to be configured and [Time synchronization](#) activated.

9. Upgrade **@ptitude Observer database(s)**.

If there are any databases which have been used with a previous version of @ptitude Observer, then these need to be upgraded to the latest version in order to use them with the new version of @ptitude Observer. Please note that it is possible to run several different versions of @ptitude Observer software on the same computer. For more information, refer to [Software Upgrade](#).

SQL Server Express Installation

Installation Procedure

1. Insert the SKF @ptitude Observer DVD.
If the installation program does not start, run the file "Setup1.exe" from the DVD.
2. Click **Microsoft SQL Server**.

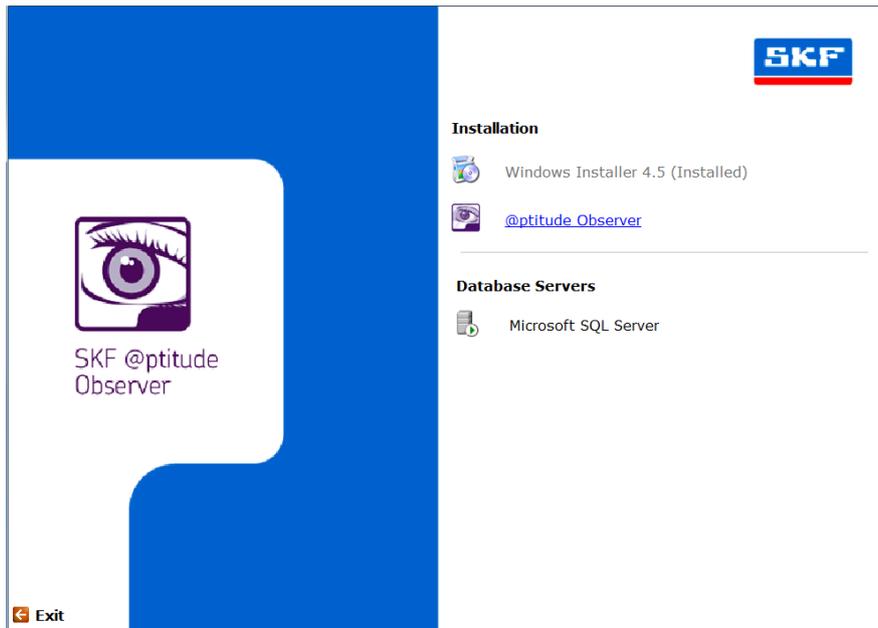


Figure 3 - 1.
Database Server Installation Start.

3. First, check the prerequisites before installing SQL Server Express 2014.

The prerequisites are the system requirements in order to be able to install SQL Server Express 2014. Which versions of Windows Installer, .NET Framework and Windows PowerShell are installed can be confirmed by checking "Control Panel/Add or Remove Hardware".

- Windows Installer 4.5 is required in order to install SQL Server Express 2014. If it is not installed, click the link **Windows Installer 4.5** and follow the installation guides.
- A minimum of .NET Framework 3.5 SP1 is required in order to install SQL Server Express 2014. If an earlier version is installed, click the link **.NET Framework 4** and follow the installation guides.
- Windows PowerShell 1.0 is required for Management studio express which is a free tool from Microsoft to administer SQL Server databases. However, this tool is not required to run @ptitude Observer.

If the prerequisites are met, click the link **SQL Server Express 2014**.

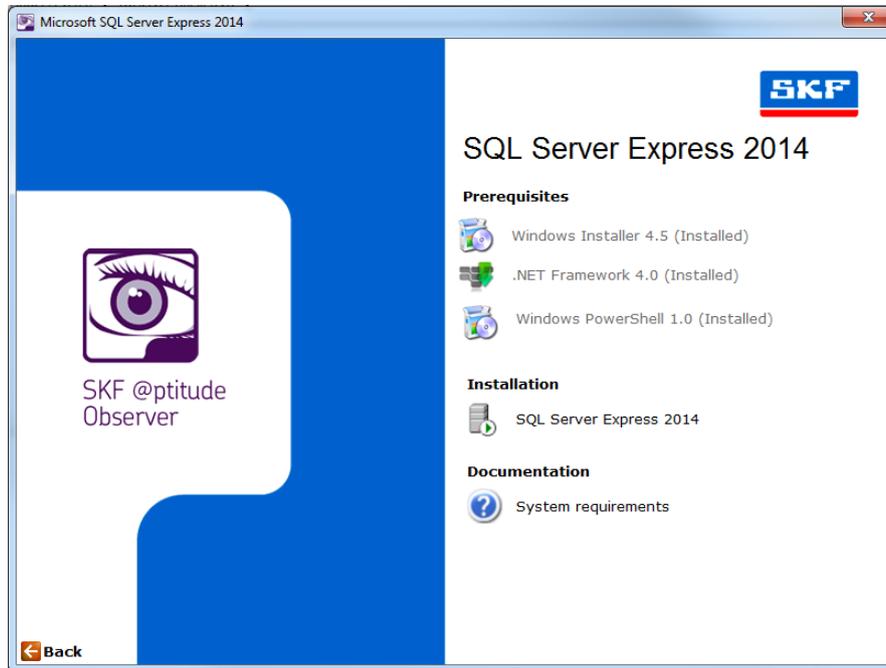


Figure 3 - 2.
SQL Server Express 2014 Installation.

- 4 On the first Product key screen, click **Next** to continue.

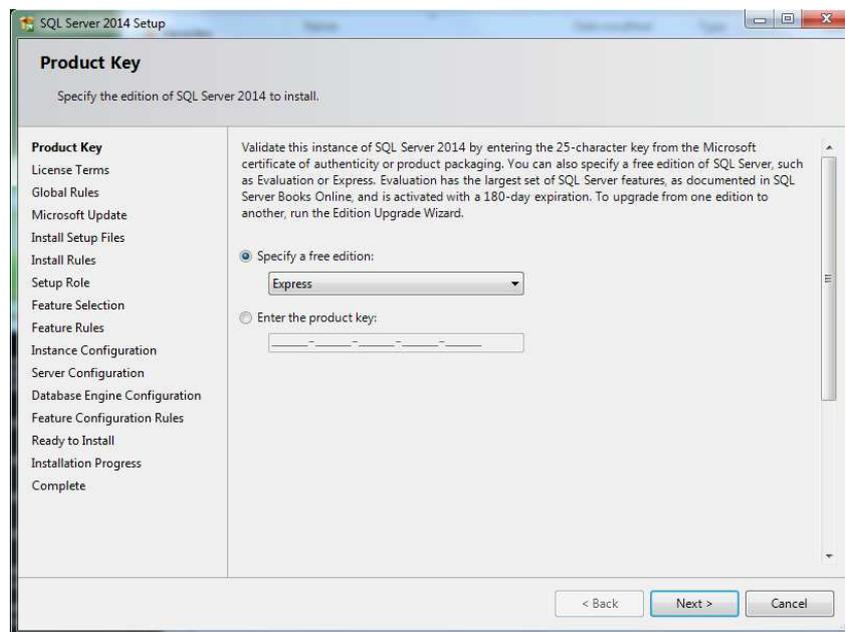


Figure 3 - 3.
SQL Server Express 2014 Installation.

5. On the License Terms screen, make sure to read through the license terms and agree to them. Click **Next** to continue the installation.

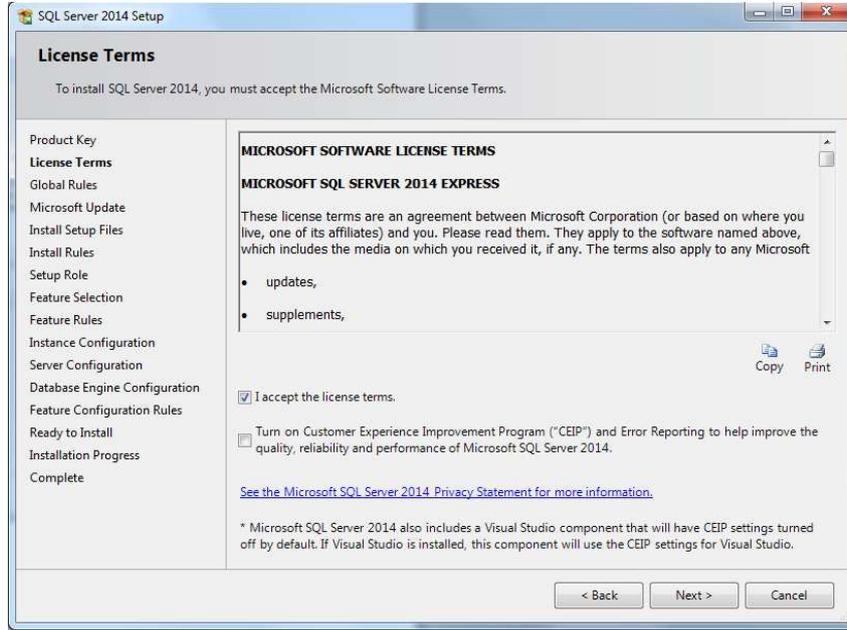


Figure 3 - 4.
SQL 2014 License screen.

6. The SQL installation contains the service pack. Use Microsoft Update for updates. Click **Next** to continue.

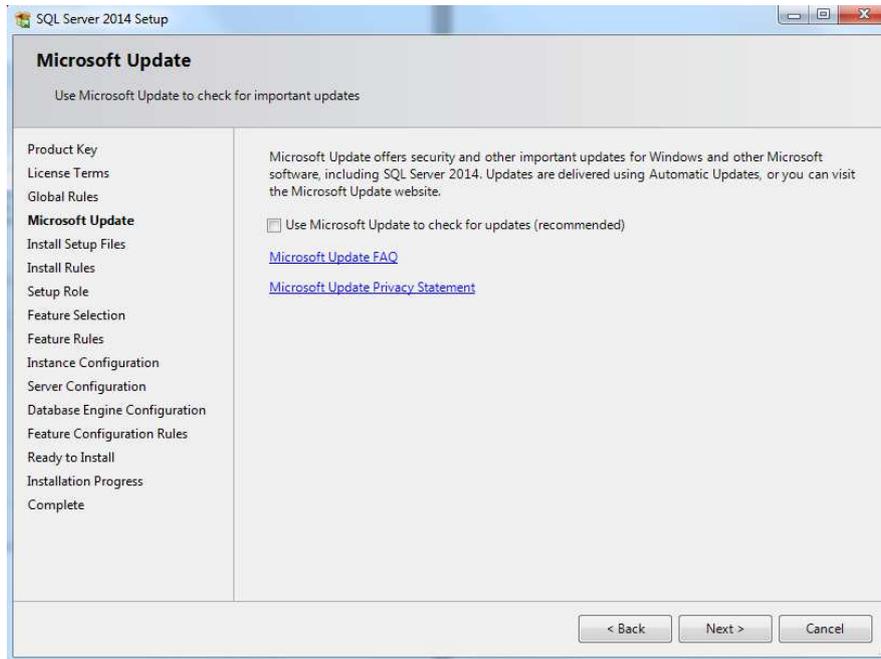


Figure 3 - 5.
SQL Product Updates.

7. The setup will check if the computer is ready for installation. Click **Next** to continue.

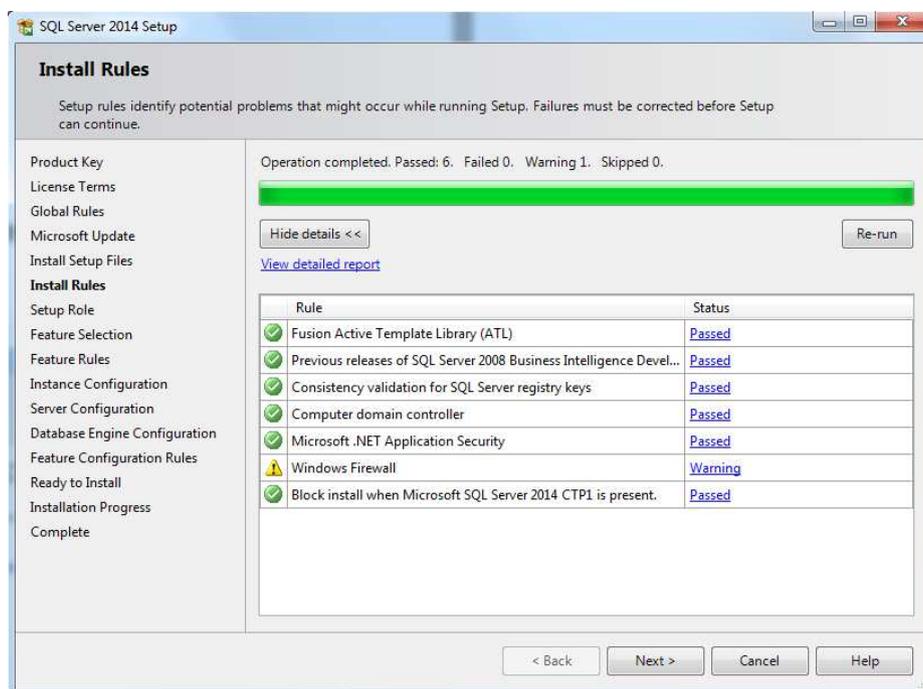


Figure 3 - 6.
SQL check compliancy.

8. Setup SQL roles and then click **Next** to continue.

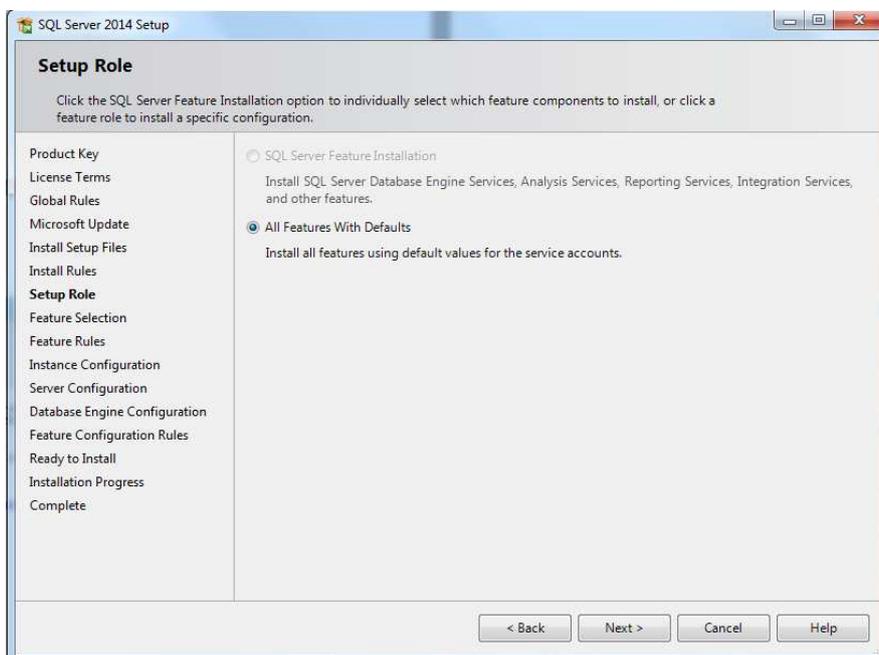


Figure 3 – 7
SQL Roles.

9. When prompted to select which features to install, make sure to install at least the options **Database Engine Services, Management Tools - Basic** and **Management Tools - Complete**. Click **Next**.

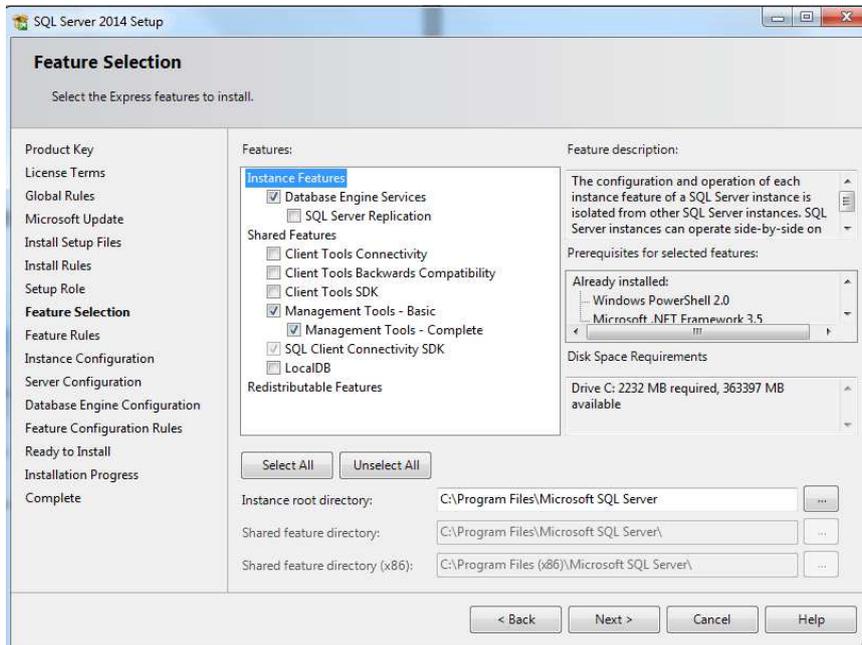


Figure 3 - 8.
SQL Installation Feature Selection.

10. When the Instance Configuration screen is displayed, click **Next** to continue.

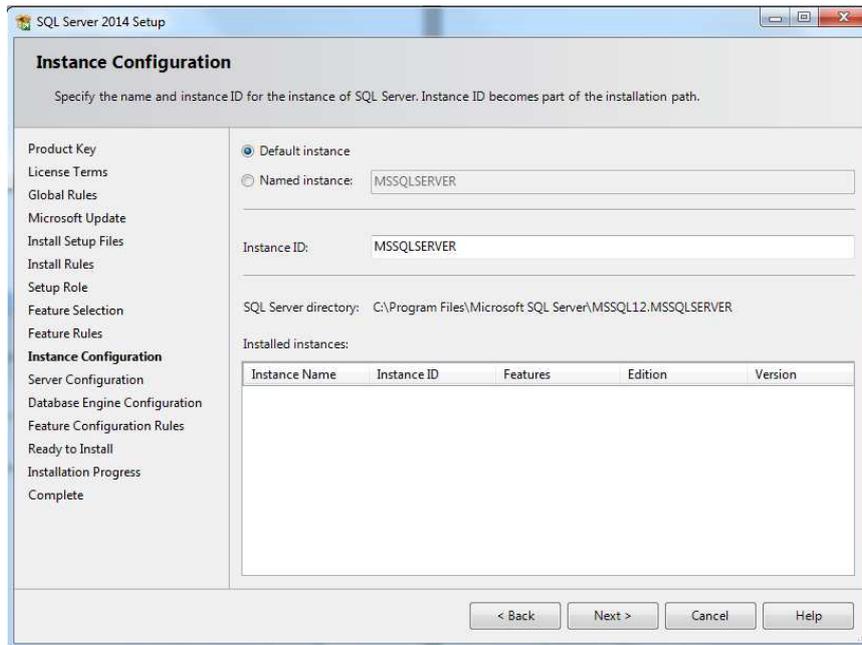


Figure 3 - 9.
SQL Installation Instance Configuration.

11. On the Server Configuration screen, click **Next**.

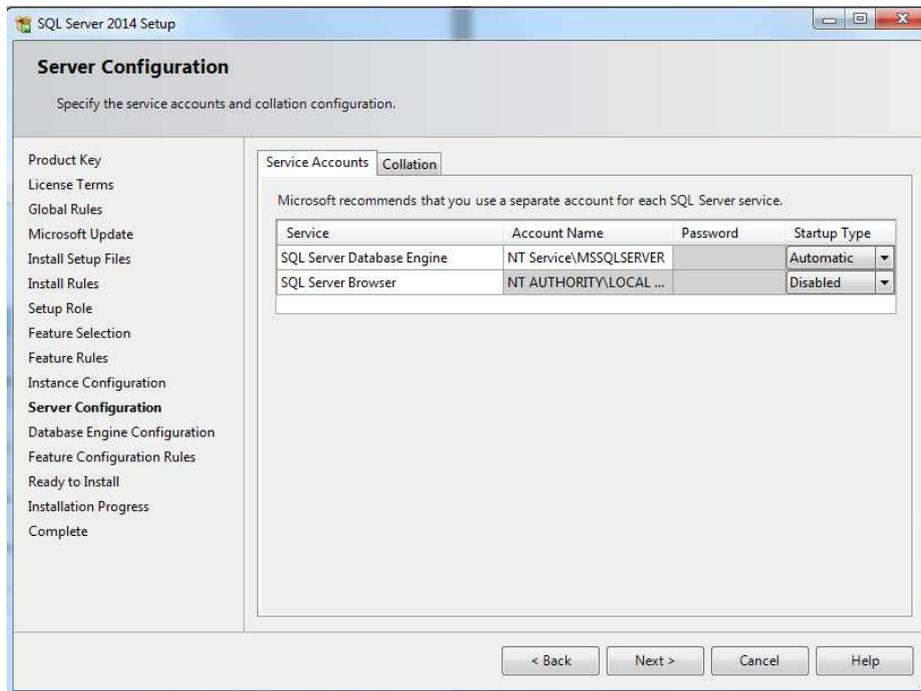


Figure 3 - 10.
SQL Installation Server Configuration.

12. On the Database Engine Configuration screen, select Mixed Mode authentication and choose a System Administrator password. In addition, SQL Server 2014 needs to have a SQL Server administrator specified. If unsure about which account to pick, it is recommended to click the **Add Current User** button.

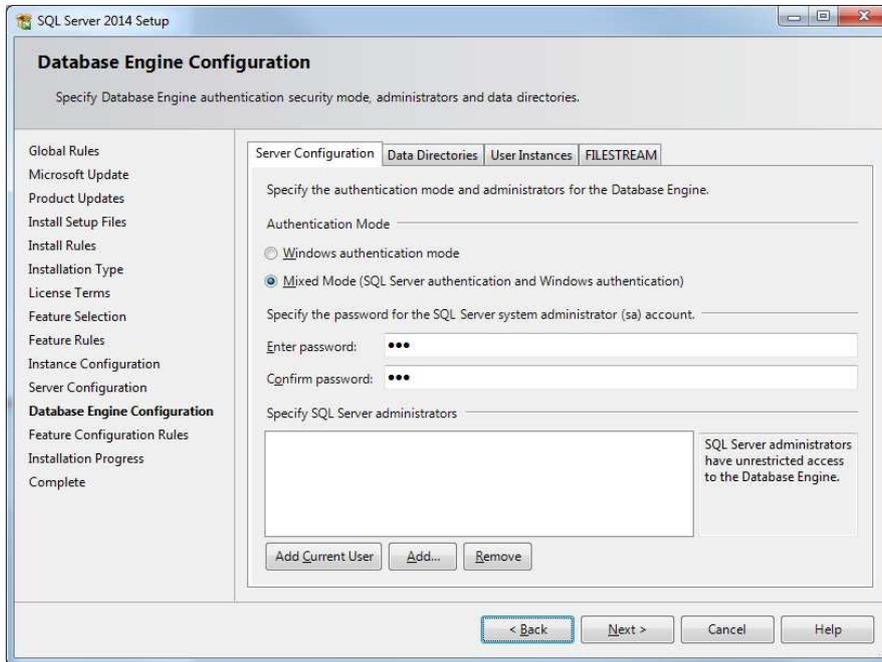


Figure 3 - 11.
SQL Installation Database Engine Configuration.

13. On the Ready to install screen, click **Next**.

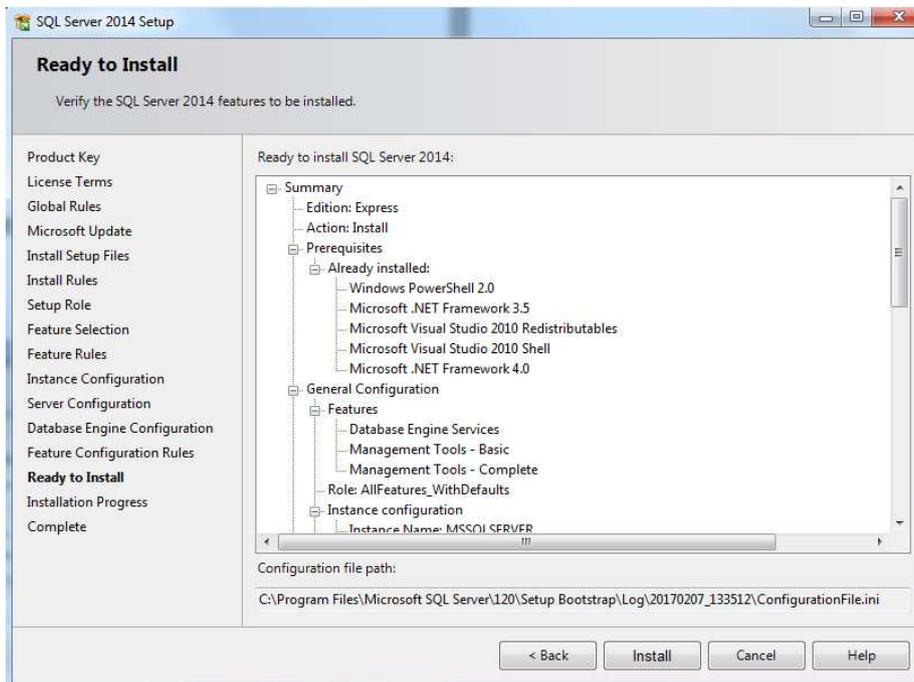


Figure 3 - 12.
SQL Ready to install.

14. SQL Server will now install.

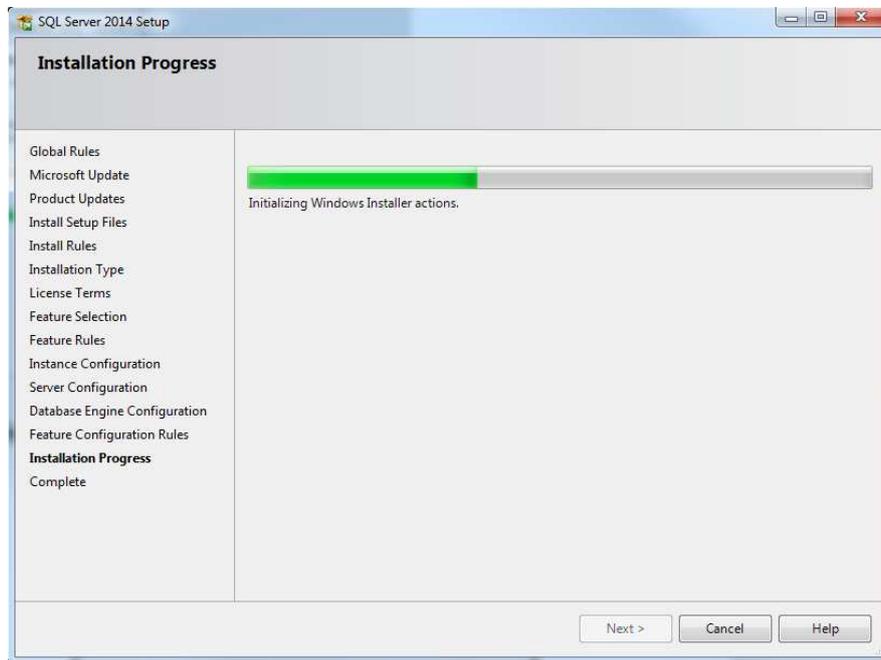


Figure 3-13.
SQL Installation in Progress.

15. After the installation is complete, click **Close**.

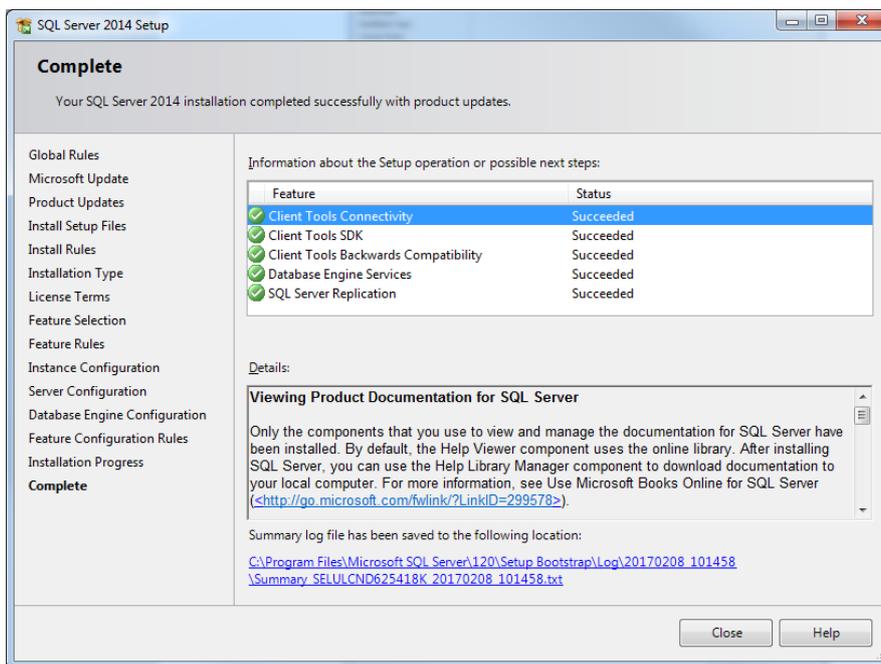


Figure 3-14.
SQL Installation Complete.

@ptitude Observer Suite Installation

Installation Procedure

1. Insert the **SKF @ptitude Observer DVD**.
 - If the installation program does not start, run the file "Setup1.exe" from the DVD.
2. Click **@ptitude Observer**.

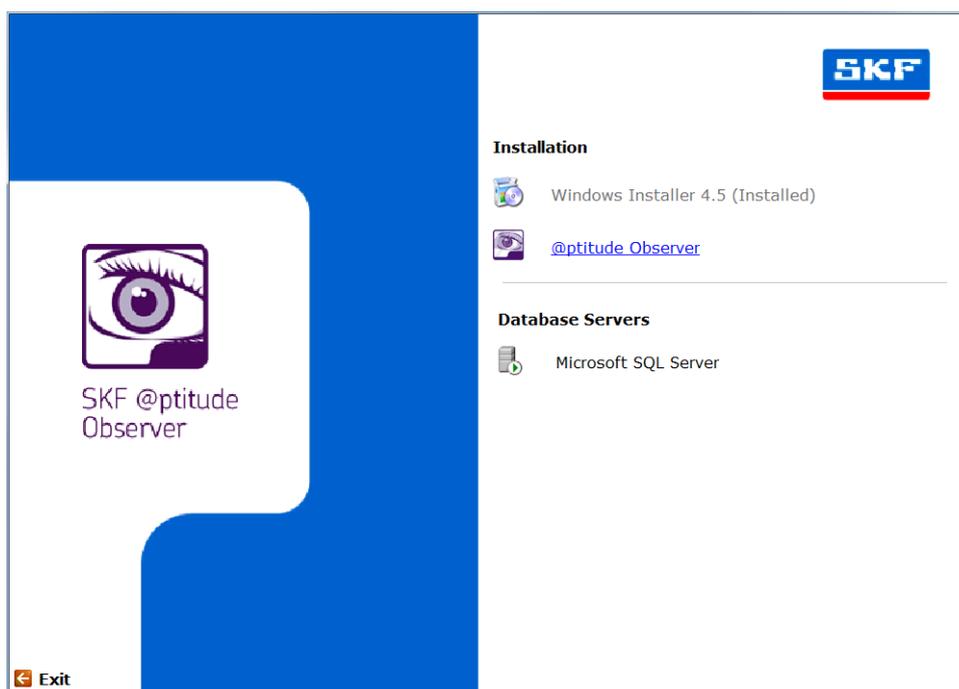


Figure 4 - 1.
@ptitude Observer Installation Start.

3. The InstallShield® Wizard will guide the @ptitude Observer Suite installation. Click **Next** to continue.

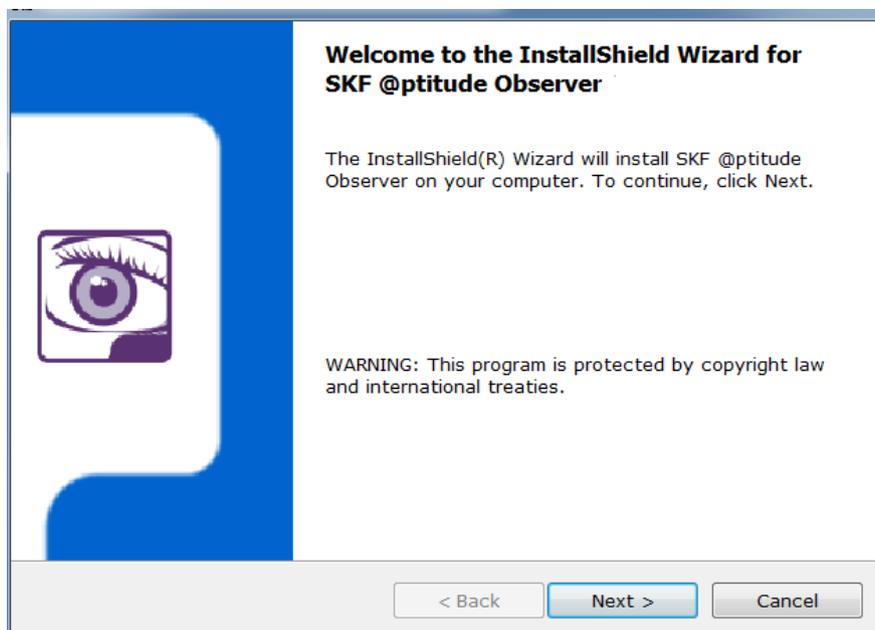


Figure 4 - 2.
InstallShield Wizard for @ptitude Observer Installation.

4. Select "I accept the terms in the license agreement" and then click **Next**.

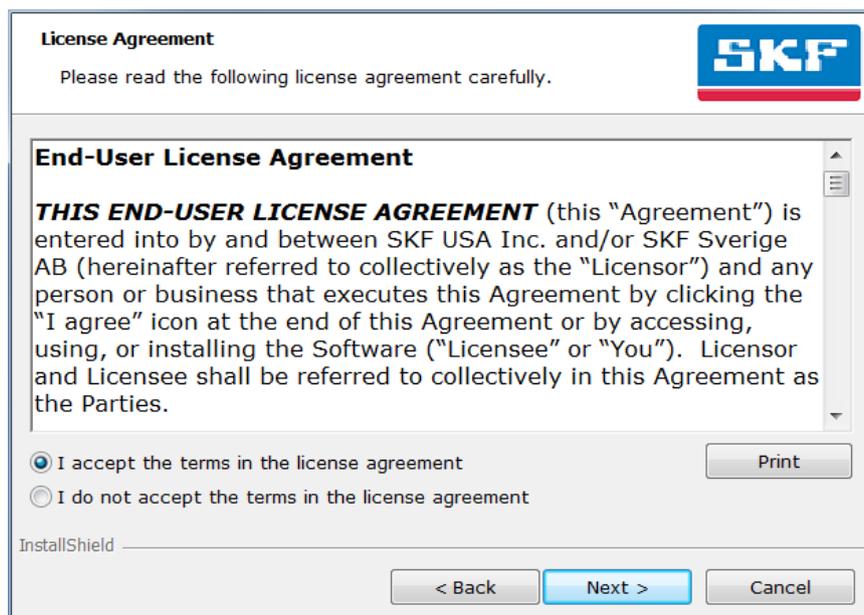


Figure 4 - 3.
@ptitude Observer Installation License Agreement.

5. Check the destination folder. If it was set to the correct folder, click **Next** to continue. Otherwise, click **Change** to install to a different folder.

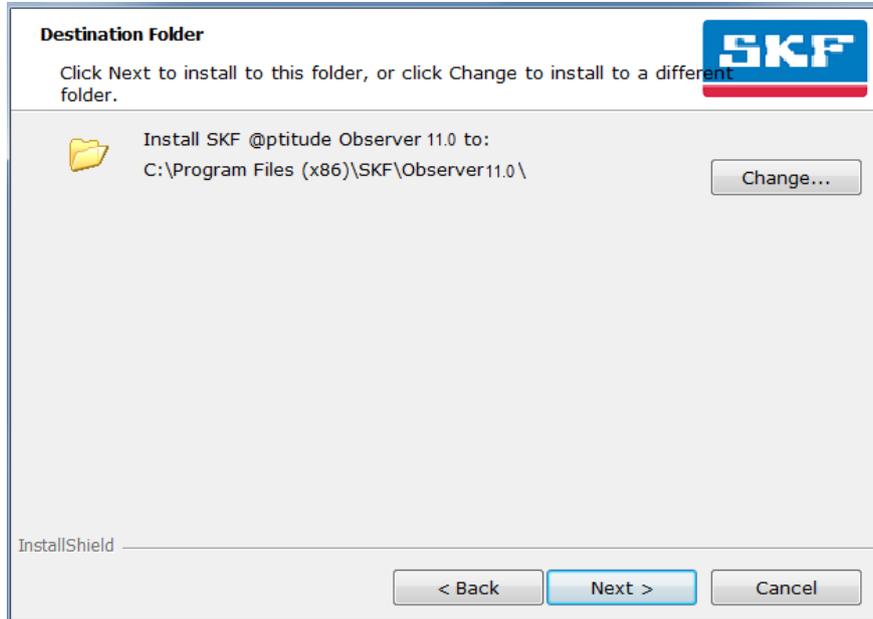


Figure 4 - 4.
@ptitude Observer Installation Destination Folder.

6. Choose a setup type and click **Next** to continue.

Client installation and **Server installation** will install all the necessary components. Go to step 8.

However, **Full / Custom installation** requires choices to be made on which components to install, as shown in the next step.

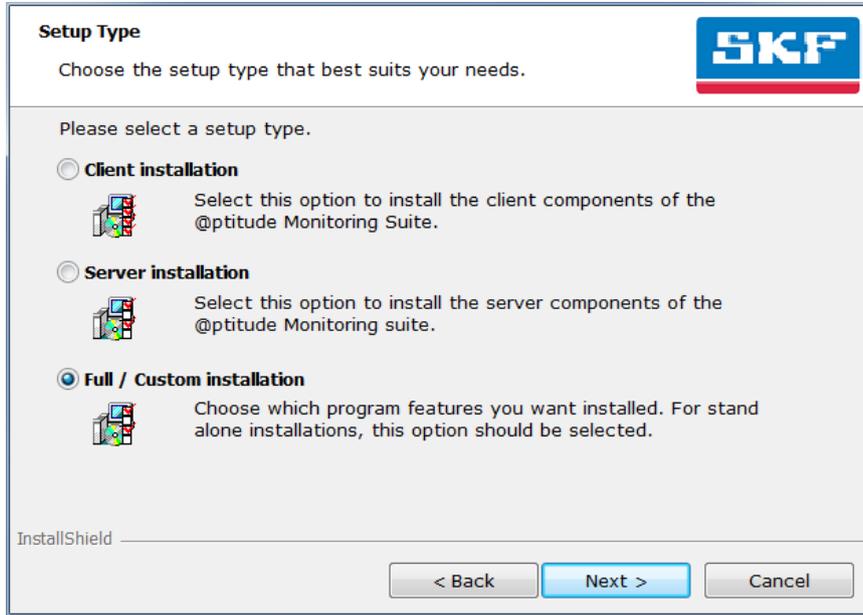


Figure 4 - 5.
@ptitude Observer Installation Setup Type.

7. Select programs to install, then click **Next**. Program(s) to install can be selected by changing the installation option. There are different installation options as shown below.

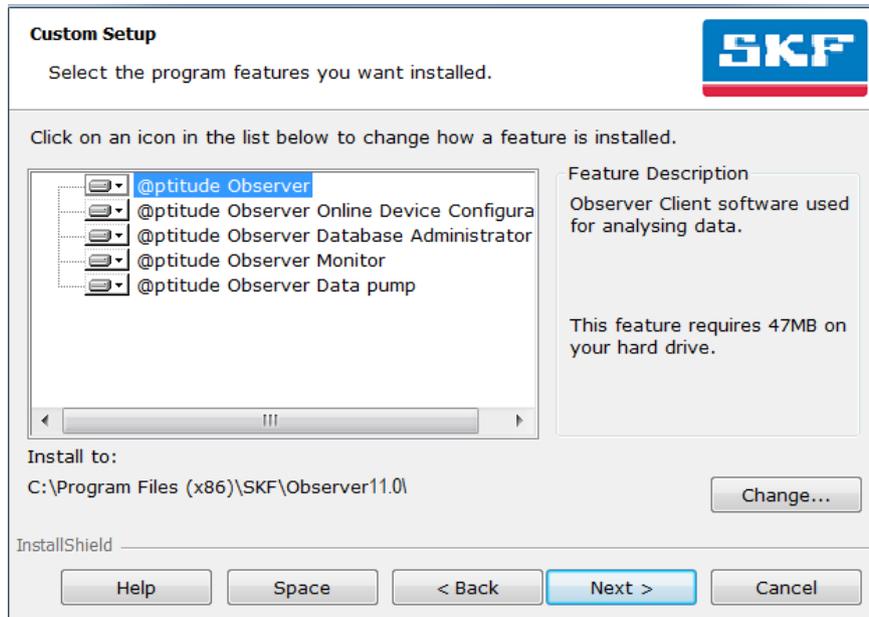


Figure 4 - 6.
Example of @ptitude Observer Installation Custom Setup.

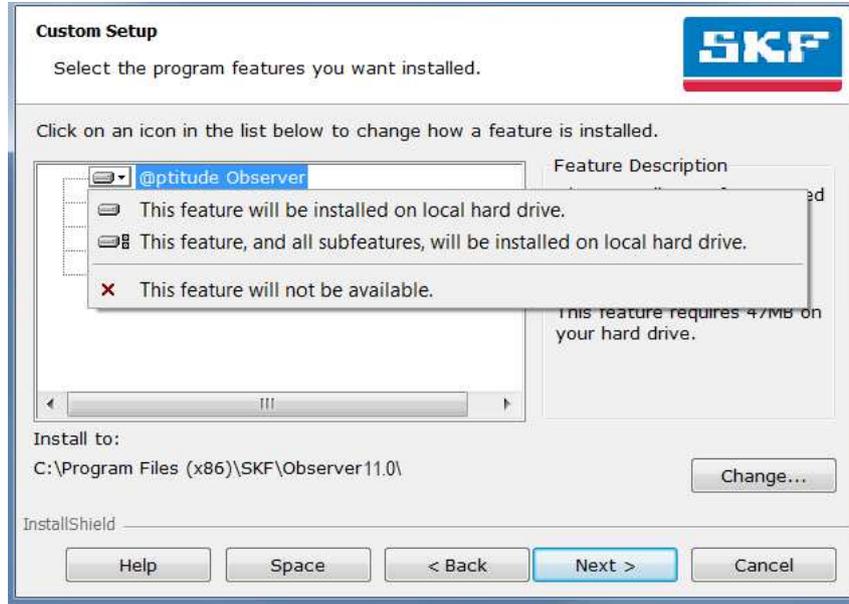


Figure 4 - 7.
@ptitude Observer Installation Custom Setup Options.

8. @ptitude Observer will now install.

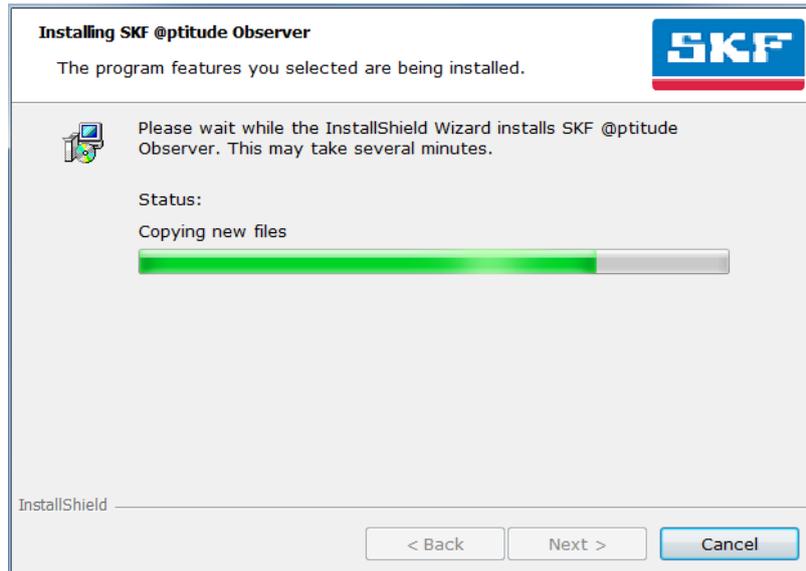


Figure 4 - 8.
@ptitude Observer Installation in Progress.

9. Click **Finish** to complete the installation and exit InstallShield® Wizard.

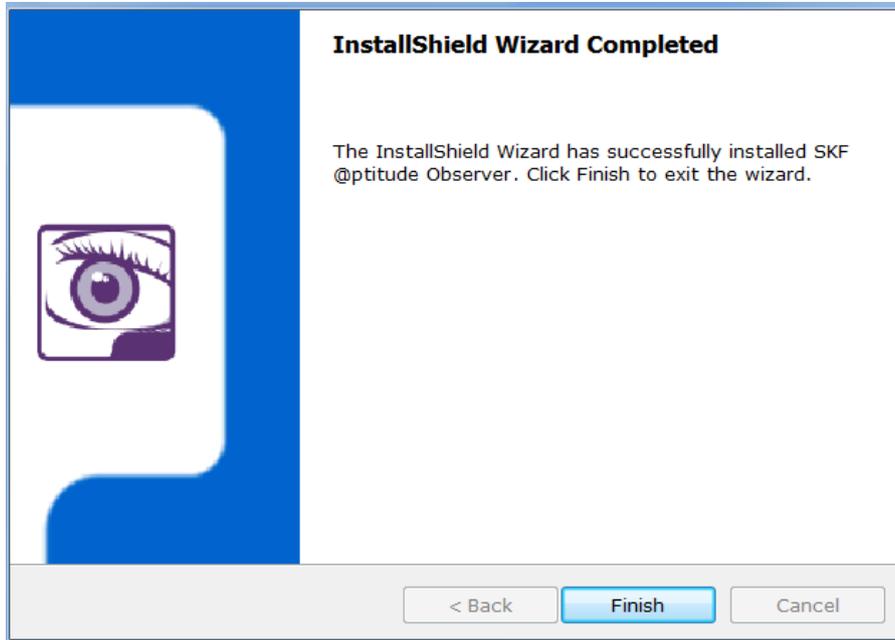


Figure 4 - 9.
@ptitude Observer Installation Finish.

After the InstallShield Wizard has completed, additional third-party components may be installed automatically by the installer. This may take a few minutes.

Install a New Observer Database

1. Start the @ptitude Observer database administrator software by clicking on the shortcut from the start menu.
2. Log in to the database server using the login credentials specified when installing the SQL server.
3. Click on the menu option **Server / Create new database**.

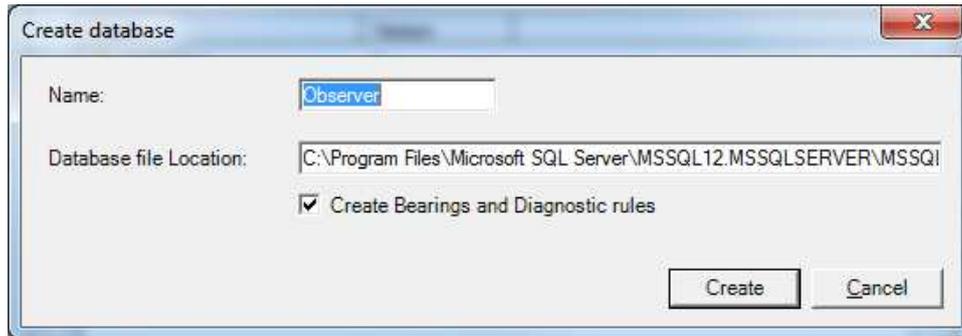


Figure 5 - 2.
Example of Observer Create Database.

4. Select a database name (default is Observer) and select where the database files should be stored (default is SQL server data directory).
5. Click on **Create** button.

Important - The database name cannot be the same as an already existing database.

6. At the end of the Create database procedure, at the prompt, select the measurement units to use for the standard diagnosis in Observer and click the **Update** button.

@ptitude Observer Monitor Service

To be able to use @ptitude Observer as an on-line system, the communication and database storage are performed by the @ptitude Observer monitor service. There can be several @ptitude Observer monitor services installed at the same time.

Installing a Monitor Service

1. To start a @ptitude Observer monitor service, start the @ptitude Observer Monitor Manager software by clicking on the shortcut on the start menu located in **Programs\SKF @ptitude Monitoring Suite X.Y\@ptitude Observer Monitor Service Manager**.

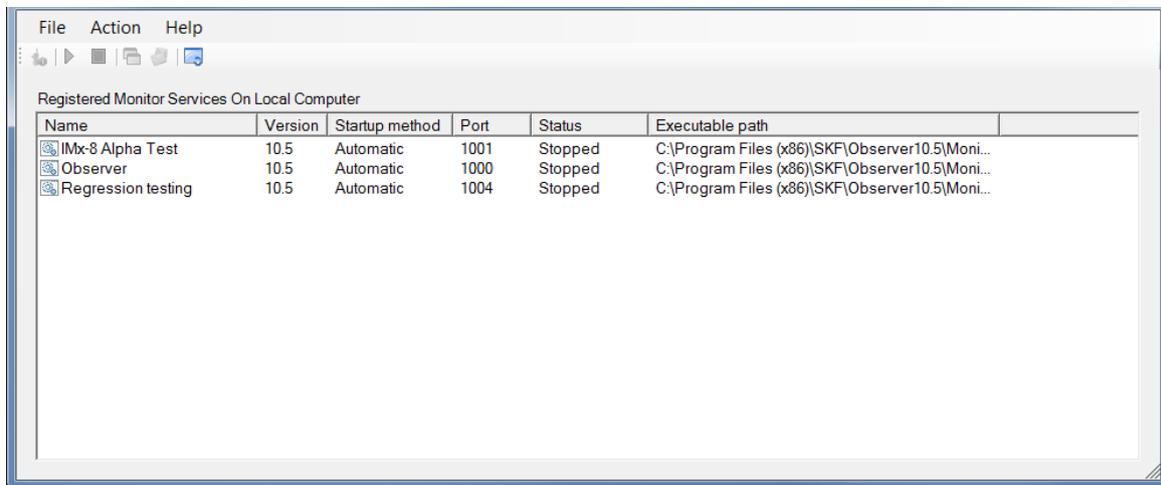


Figure 6 - 1.
Example of @ptitude Observer Monitor (Service) Manager.

Observer Monitor (Service) Manager screen lists all the registered monitor services on the local computer.

Action allows the following interfaces:

- **New** adds new monitor services on the local computer.
- **Properties** can edit the properties of the already registered services through Connection interface.
- **Delete** deletes the selected registered service.
- **Start** starts the selected monitor service.
- **Stop** stops the selected monitor service.
- **Monitor Service Viewer** displays events, connections and status of the selected monitor service.
- **View Log File** views a log file for the selected monitor service.
- **Refresh** updates the list with most current information.

2. To register a new monitor service, click **Action**, then select **New**.

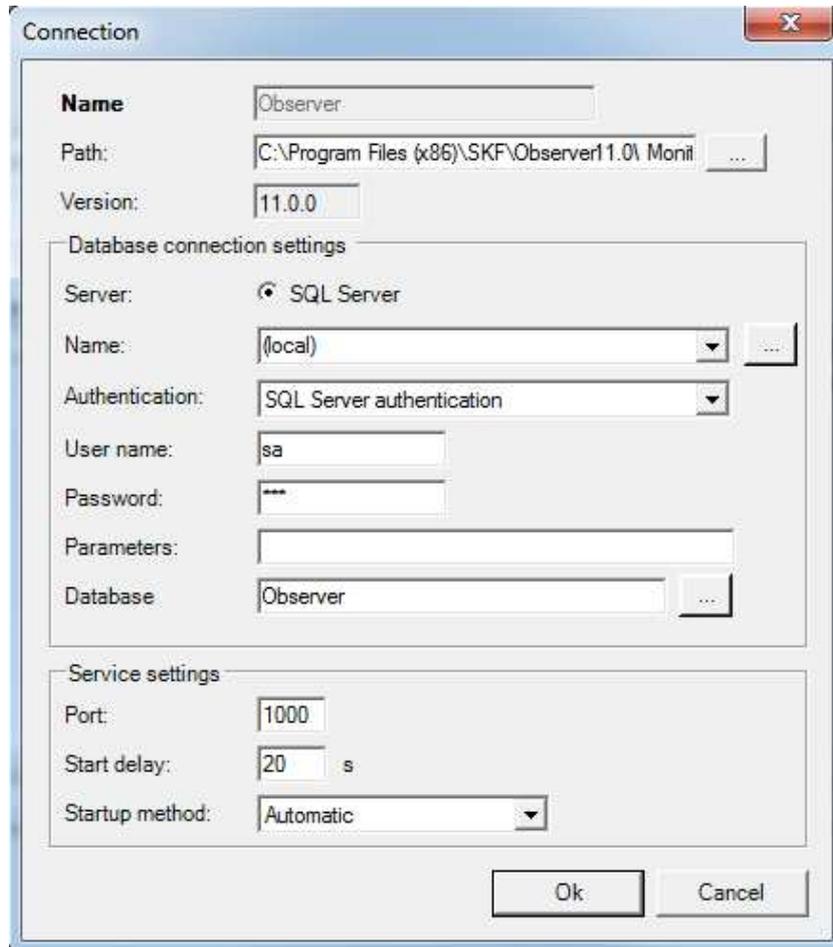


Figure 6 - 2.
Example of @ptitude Observer Monitor Service – Connection.

Name is a unique name which has to be given to the service. It will be used to identify the registered database connection on local computer. Once a new service is registered, the name cannot be changed.

Path defines the location of the executable file to be used as the service. The default path is C:\Program Files (x86)\SKF\Observer X.Y, (based on the software version X.Y).

Version displays the version of @ptitude Observer in use currently.

Database connection settings

Server is the type of database server such as SQL Server. The Monitor Service settings vary depending on the server type.

Name is for selection of a server from the list of databases. (local) means that the database is on the same PC.

Authentication defines whether to use Windows authentication or SQL Server authentication for SQL Server. This Authentication selection corresponds to the selections made when installing SQL Server Express at the [Database Engine Configuration screen](#).

User name is the database user name.

Password is the password for the user.

Parameters allows additional parameters to be entered, for the connection. For example, to force TCP/IP protocol, enter "Network=DBMSSOCN;" in this text box.

Database is the selected database from a list of available databases on the database server.

Service settings

Port is used to assign which port the @ptitude Observer Monitor Service should use to communicate with @ptitude Observer and IMx devices. The default value is 1000.

Start delay is used to give the database server some time (in seconds) to start before @ptitude Observer monitor tries to open the connection. It is recommended to set this field to 20 for the startup method Automatic. Whereas, it is recommended to set this field to 0 for the startup method Manual.

Startup method sets the startup method of the service to either Automatic, Manual or Disabled.

- **Automatic** means that the service starts when the operating system boots up.
- **Manual** means that the service has to be started by the user either through @ptitude Observer Monitor Manager or through the services interface in windows.
- **Disabled** means that the service is completely disabled.

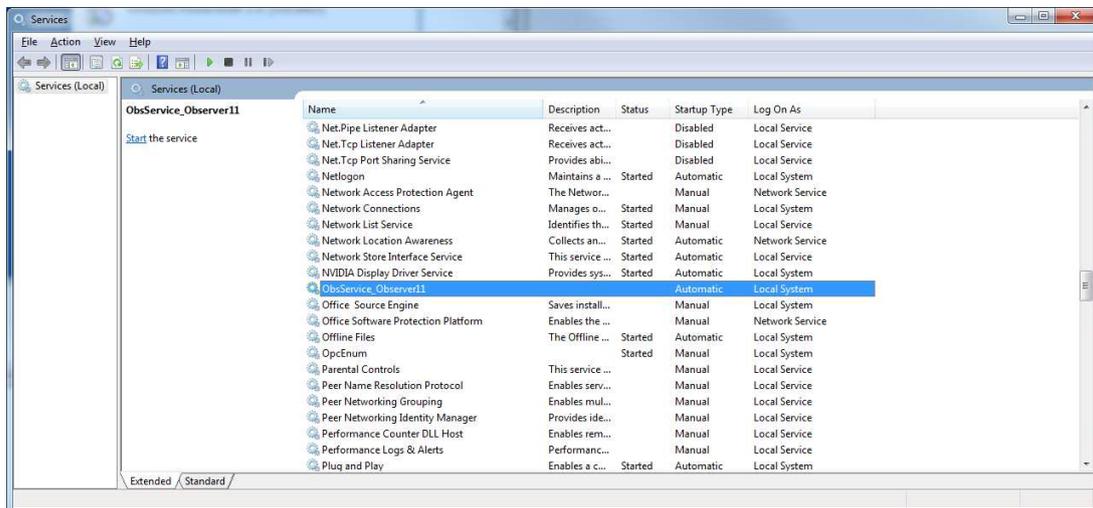


Figure 6 - 3.
Example of Window's Interface Services.

3. A recovery plan, in case of an unrecoverable error, of registered monitor services resides within Windows' interface **Services (Local)** which is located under Administrative Tools in Control Panel.

- @ptitude monitor services start with the text "ObsService_".

Select an @ptitude monitor service, then select **Properties** under Action. Or, right-click on an @ptitude monitor service and select **Properties**. Select **Recovery** tab

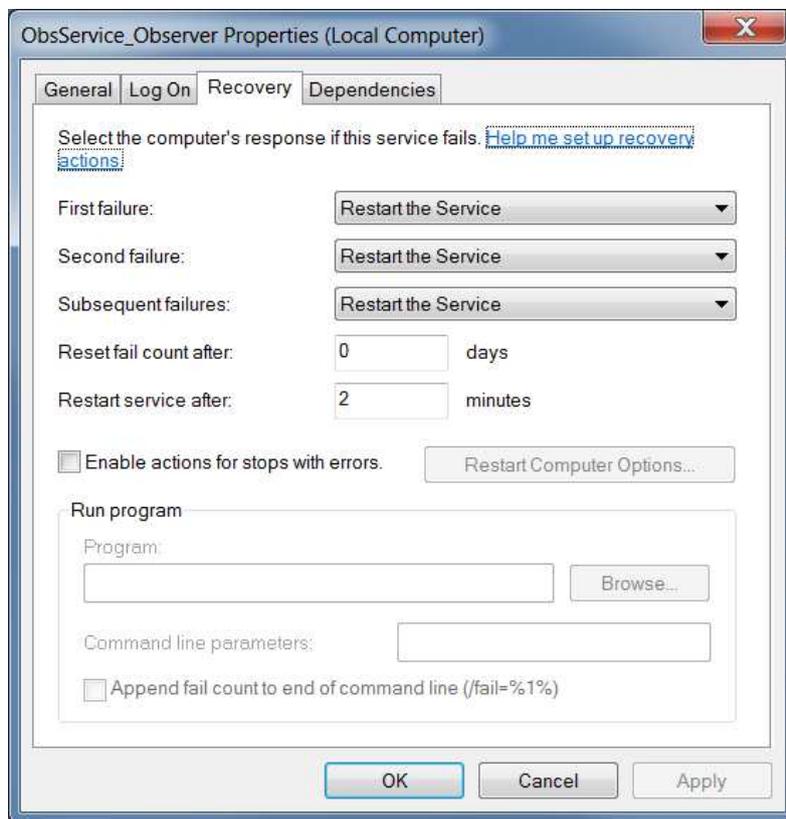


Figure 6 - 4.
Example of Recovery Setting.

4. It is recommended to set the First, Second and Subsequent failures of the Recovery setting to **Restart the Service**.

Edit Observer Settings

Language and License Key

When installing @ptitude Observer, a setting file called @ptitude Observer.ini is installed in C:\Users\[User name]\AppData\Roaming\SKF\Observer X.Y\Observer.ini. This section describes the different settings in that file.

The following is an example of the contents of the @ptitude Observer.ini file:

```
[System]
Language=English
RegKey=X53BB8-91JJ45-XY13GH-PC333L-9XMCV6-PP
```

Language specifies which language to use.

RegKey is the license key entered when installing the product.

The language and license key entries in this file, may be edited.

Application Data Folder

With @ptitude Observer which folder to use as the application data folder can be specified (default is the user's own application data folder which is usually located in C:\Users\[Username]). The application data folder is used to store user specific data for the @ptitude Observer application such as connection files and .ini files.

One of two methods, described below, can be used.

Using the USE_APP_PATH Keyword on the @ptitude Observer Properties Shortcut

Using this USE_APP_PATH keyword will cause the @ptitude Observer system to use the same folder as the executable file which resides in for its application data.

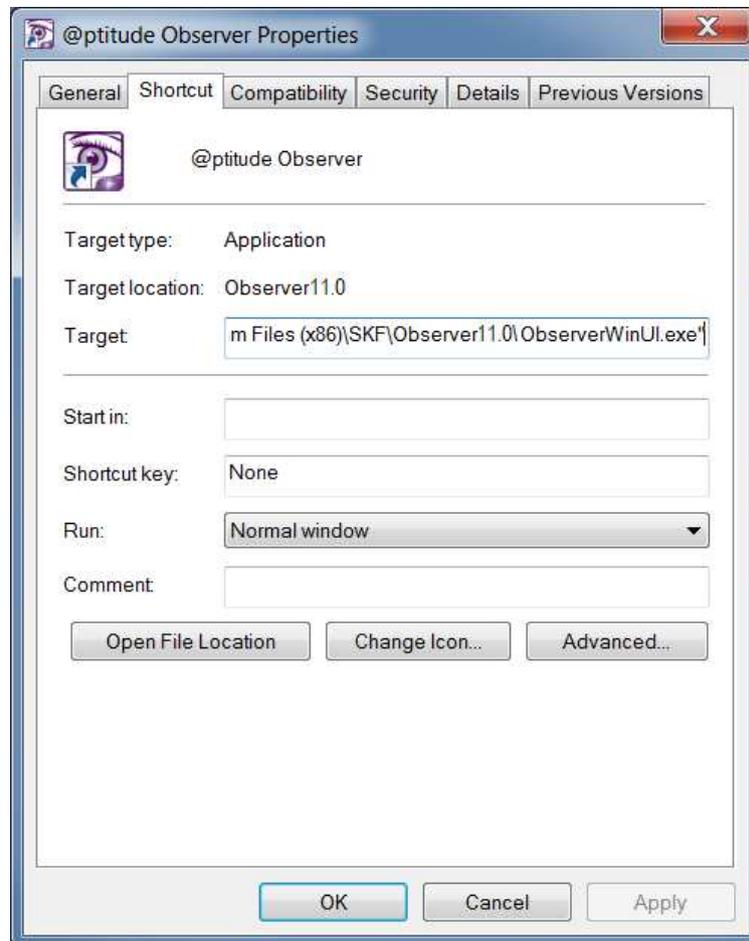


Figure 7 - 1.
Assigning the Executable File as an Application Folder.

Create a new shortcut to the ObserverWinUI.exe file by editing the @ptitude Observer X.Y Properties Shortcut.

Add the text USE_APP_PATH in the target field as shown in the screen shot, above.

Using a Custom Folder on the @ptitude Observer Properties Shortcut

Instead of using the USE_APP_PATH keyword, it is also possible to specify a custom folder as an application data folder, for example "C:\myfolder".

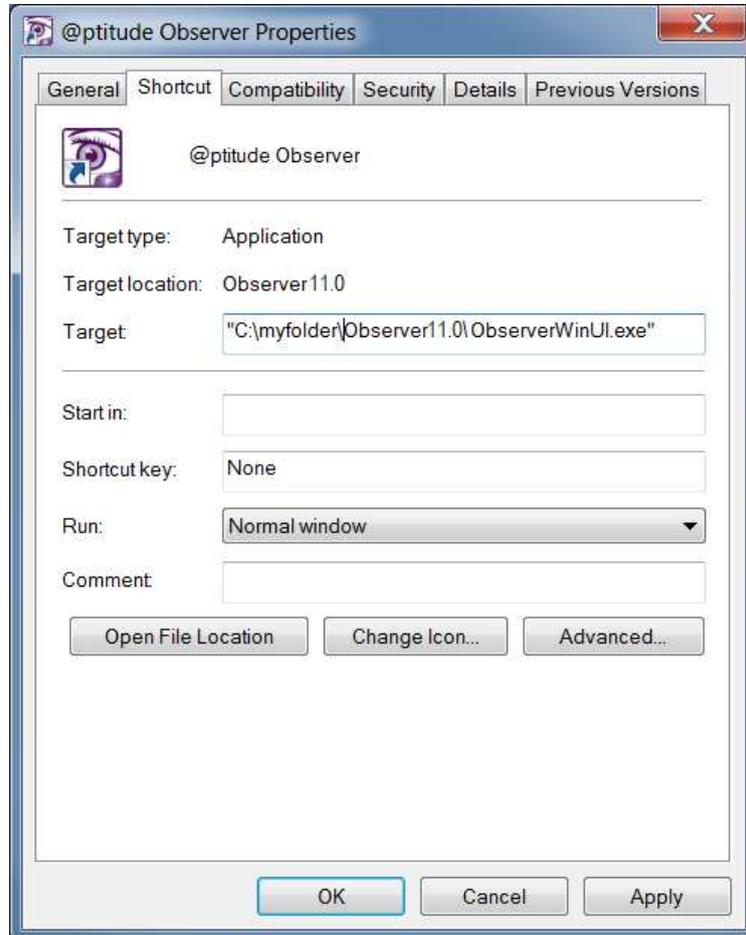


Figure 7 - 2.
Assigning a Custom Folder as an Application Data Folder.

- If it is difficult to locate the Observer.ini file, click on the shortcut "User Application data" folder on Programs \ SKF @ptitude Monitoring Suite X.Y \ @ptitude Observer.

IMx/MasCon Network Settings

This step is needed only if the computer is to be used as the @ptitude Observer Monitor computer.

Network Configuration

IMx/MasCon units use the TCP/IP protocol to communicate with @ptitude Observer Monitor. By default, the network setting for IMx/MasCon uses IP address of 10.0.0.1 and net mask of 255.255.255.0.

To use a different IP address, settings in IMx/MasCon units will need to be configured. The MasCon48 is configured using the digital display on the front panel, and MasCon16 and IMx units are configured by creating and sending a configuration file to the unit via @ptitude Observer On-line device configurator software.

For further information, refer to the corresponding IMx unit's User Manual and the **@ptitude Observer On-line Device Configurator User Manual**.

Time Synchronization

This step is only needed if the PC is being used as the @ptitude Observer monitor computer.

Activating Time Synchronization

IMx, MasCon16 and MasCon48 devices use a built-in function in Windows for time synchronization. The @ptitude Observer monitor computer is used as the reference for time in the IMx/MasCon system. In order to activate time synchronization, please follow the procedure below.

1. Open port 123 in the firewall. This is done a bit differently depending on the operating system and eventually external firewall.
2. Go to services and check that "Windows Time" service start-up method is set to "Automatic" and is started.
3. Double click on the file EnableTimeSync.reg in the Extra\TimeSync folder on the Observer DVD. This will enter information in the registry to enable the time synchronization service on the computer.
4. Stop and start "Windows Time" service to make this change take effect.

10

Software Upgrade

This section of the installation manual describes how to upgrade @ptitude Observer.

Important - It is strongly recommended that a backup of the database is created, before starting the upgrade procedure.

Guidance for System Upgrades and Updates

Before the upgrade is started, a full database backup should be made.

SKF does rigorous testing on new firmware and software. However, it is impossible to test all parameter permutations of a configurable system.

When a customer deploys a new version of SKF software or firmware, it is advised to test the configurations on a small scale under the real world operating conditions. A complete roll-out should only be performed one database at a time, after successful small-scale testing.

The SKF software has some specific tools that can help with the distribution of new firmware over a large fleet. The use of these tools is encouraged for the deployment of updates and upgrades.

Upgrade Procedure

1. Start @ptitude Observer database administrator.
2. Select the menu option **Database**, then **Upgrade selected database**.
3. Select definition file which should be located in the same folder as @ptitude Observer or in the folder '[DVD]:\NewVer\Database administrator\' and has a file extension of .DEF. Click **Ok** to proceed.
4. Start @ptitude Observer.
5. Click the menu item **On-line** then select **IMx/MasCon** units.
6. Click the button **Firmware**.
7. Browse the folder for the firmware of the IMx/MasCon types being used. The files are located in the '[DVD]:\NewVer' folder.

Note that there is no need to uninstall the database manager such as SQL Server, in order to upgrade the system.

Important - After a database conversion, all diagnoses in the database need to be recalculated in the Observer software. Until this is done, all diagnoses will display the value 0. The recalculation can be done at Observer Hierarchy view, by right clicking on a node and selecting Configure\Recalculate diagnoses.

Appendix A

End User License Agreement

THIS END-USER LICENSE AGREEMENT

(this "Agreement") is entered into by and between SKF USA Inc. and/or SKF Condition Monitoring Center AB (hereinafter referred to collectively as the "Licensor") and any person or business that executes this Agreement by clicking the "I agree" icon at the end of this Agreement or by accessing, using, or installing the Software ("Licensee" or "You"). Licensor and Licensee shall be referred to collectively in this Agreement as the Parties.

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CM-F0176 (Revision F, January 2011)