

SKF @ptitude Observer

User Manual Part No. 32170700-EN
Revision O – September 2019
Observer 12.0



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.

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Requirements


The SKF @ptitude Observer software installation includes the following components:

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

There are various installation scenarios to be considered:

- **Network configuration – Network Client:** a computer running only the SKF @ptitude Observer client software.
- **Network configuration – Server:** a computer running the Monitor service and hosting the Microsoft SQL Server database.
- **Stand-alone configuration:** a single computer running the SKF @ptitude Observer client software, the Monitor service and hosting the SQL Server database.
- **Custom:** any system combination not covered by the above.

Before attempting an installation check the hardware and software requirements listed below.

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

Hardware Requirements

Processor: For stand-alone and network client installations a minimum of Pentium IV, 1 GHz with 2.4 GHz or better, preferred. For a network server, this increases to 2 GHz minimum and 3.2 GHz or better, being preferred.

Note that the above recommendations are for a “dedicated PC”, running other applications simultaneously may degrade performance.

RAM: For stand-alone and network server configurations a minimum of 2 GB, with more recommended.

For a network client, 2 GB is recommended with a minimum of 1 GB.

HDD free space: For stand-alone and network server configurations a minimum of 1.2 GB is required for the software only, note that additional storage space is required for data.

For each network client 1 GB or more is recommended, 0.5 GB minimum.

Other requirements: Stand-alone and network clients require a display with a minimum resolution of 1366 x 768 with 1920 x 1200 or larger recommended. Note that SKF @ptitude

Observer is designed for a default Windows font size (smaller:100%). Using a larger font size may result in display anomalies in some interfaces/forms.

An effective backup system and procedure is highly recommended.

Software Requirements

SKF @ptitude Observer client software and the Monitor service support all Windows versions from Windows 7 including server operating systems and with each @ptitude Observer release the aim is to support any newly introduced versions.

In all cases 64-bit operating systems are supported and it is always recommended to install the latest available service packs.

Note that an admin level account will be required to install the software and to run the Monitor Service Manager tool.

For stand-alone and network server installations, Microsoft SQL server 2008, 2012, 2014, 2016 or 2017 is required. Microsoft SQL server software has its own operating system requirements, depending on the version.

General Guidelines

If upgrading an existing @ptitude Observer installation and there are any databases from a previous version of @ptitude Observer that are to be used with the new version of @ptitude Observer, then these will need to be upgraded before use.

Note that it is possible to retain and run several different versions of @ptitude Observer software on the same computer, but each will require databases that are consistent with that software version. In addition, each database will have an individual monitor service.

For more information on all these aspects refer to [Software Upgrade](#).

Note that references to 'X.Y' in this user manual relate to the software version X.Y.

If installing a completely new instance of SKF @ptitude Observer, follow the general guidelines on installation and setup that follow below.

Installation and Setup Guidelines

1. Install the **database engine** that will be used by @ptitude Observer.

The @ptitude Observer system uses Microsoft SQL Server as the recommended database engine. As detailed above, @ptitude Observer is compatible with a wide range of SQL server versions and the royalty free version of SQL server 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.

2. Install SKF @ptitude Observer components by following the instructions in the installer and referring also to the [@ptitude Observer Installation](#) section.

It 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 @ptitude Observer databases.
- **@ptitude Observer monitor** is the service which works as the connector between the 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.

3. Create @ptitude Observer database(s).

To be able to run @ptitude Observer, at least one database must be available that is compatible with the latest installed @ptitude Observer version.

The creation of a new database or upgrading of an existing database is accomplished with @ptitude Observer Database administrator.

If @ptitude Observer Database administrator component has not been installed, repeat step 2 and make sure to select @ptitude Observer Database administrator at the Custom Setup screen.

- Start @ptitude Observer Database administrator by clicking on the shortcut on the start menu located under **All Programs\SKF @ptitude Monitoring Suite X.Y\Database Administrator** or for Windows 10 **SKF @ptitude Monitoring Suite X.Y\Database Administrator** in the alphanumeric list of installed programs.
- A description of the use interface for the Database administrator is included in the [Prepare an Observer Database](#) section. In addition, further detailed information is contained in the **SKF @ptitude Observer Database Administrator** user manual, part number 32170600.

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

4. 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\Observer** or for Windows 10 **SKF @ptitude Monitoring Suite X.Y\Observer** in the alphanumeric list of installed programs.
- 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](#).

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

The connection between @ptitude Observer and the Observer database(s) is described in detail in the Manage Databases section of the **SKF @ptitude Observer** user manual, part number 32170900.

6. Configuration of monitor settings.

To be able to use @ptitude Observer as an on-line system, the communication and database storage are performed by an 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 2 and make sure to select @ptitude Observer monitor at the Custom Setup screen.

7. Set up @ptitude Observer monitor computer and on-line devices.

For the @ptitude Observer monitor computer and on-line devices to communicate, then [IMx/MasCon Network Settings](#) need to be configured and [Time synchronization](#) activated.

SQL Server Express Installation

Installation Procedure

1. An SQL Express server installer is available as a download from Microsoft. The following screenshots and installation steps are based on a 2014, W7 install but will be similar for other versions and operating systems.

If asked, the user will need to give permission for the installer to make the necessary changes associated with the software install.

2. On starting the installer, it will ask to confirm a location that can be used for the extracted files, used during the installation. The “Installation Center” screen will then display:



Figure 3 - 1
The “Installation Center” screen

For this illustration, a new stand-alone installation is being performed.

3. On the License Terms screen the left pane gives an overview of the various steps of the installation process whilst on the right are the terms of the license. Make sure to read through the license terms and agree to them. Then click **Next** to continue with the installation.

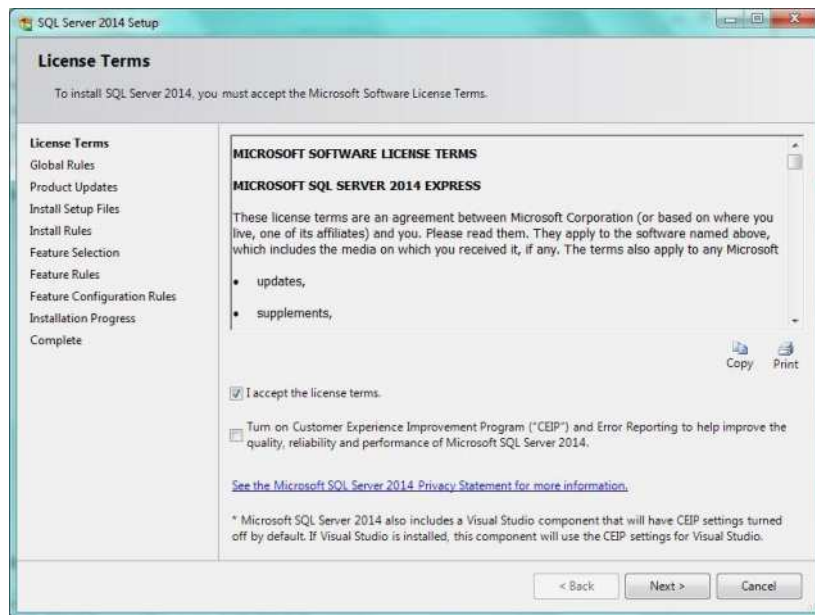


Figure 3 - 2
SQL 2014 License screen

4. If no associated updates are required and other checks complete OK, the next screen the install will stop at is the "Feature Selection" screen.

When prompted to select which features to install, make sure to install at least the options **Database Engine Services**. Click **Next**.

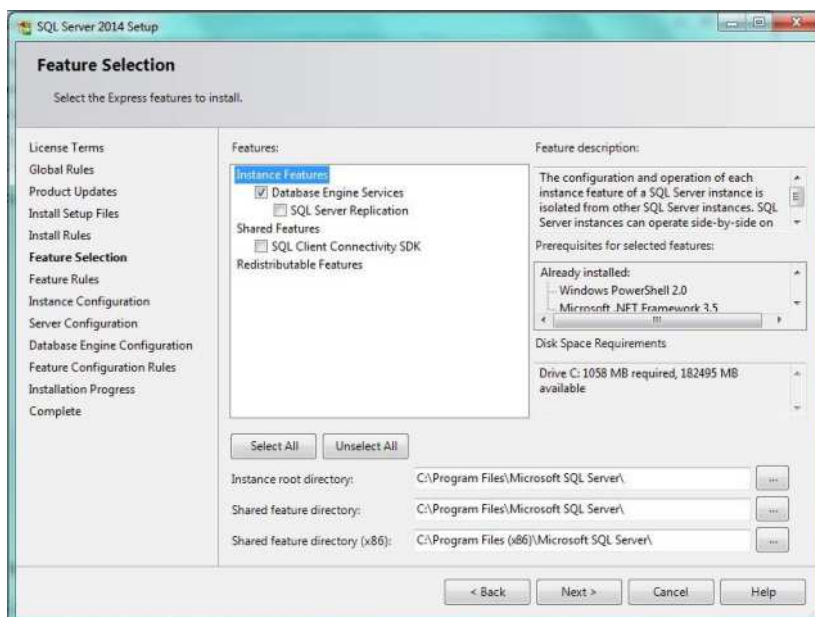


Figure 3 - 3
SQL Installation Feature Selection

5. When the Instance Configuration screen is displayed, note the default naming and click **Next** to continue.

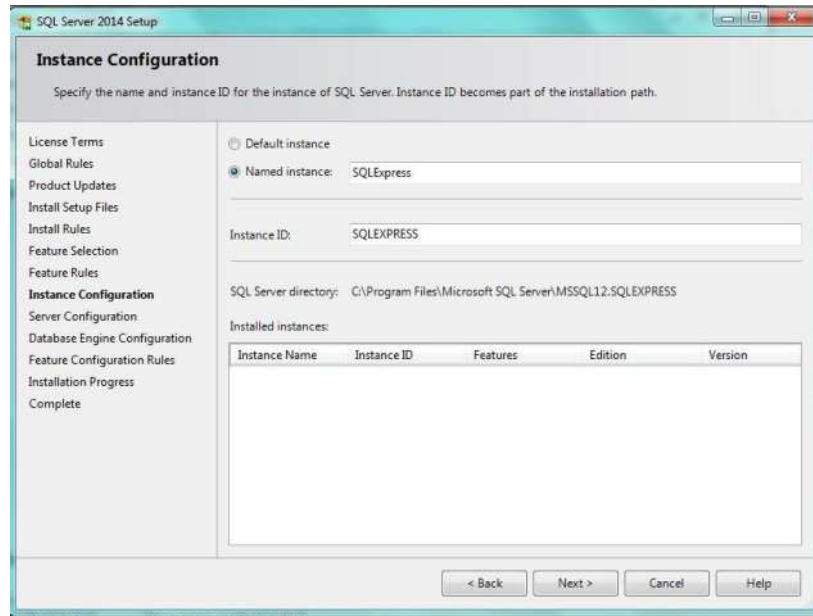


Figure 3 - 4
SQL Installation Instance Configuration

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

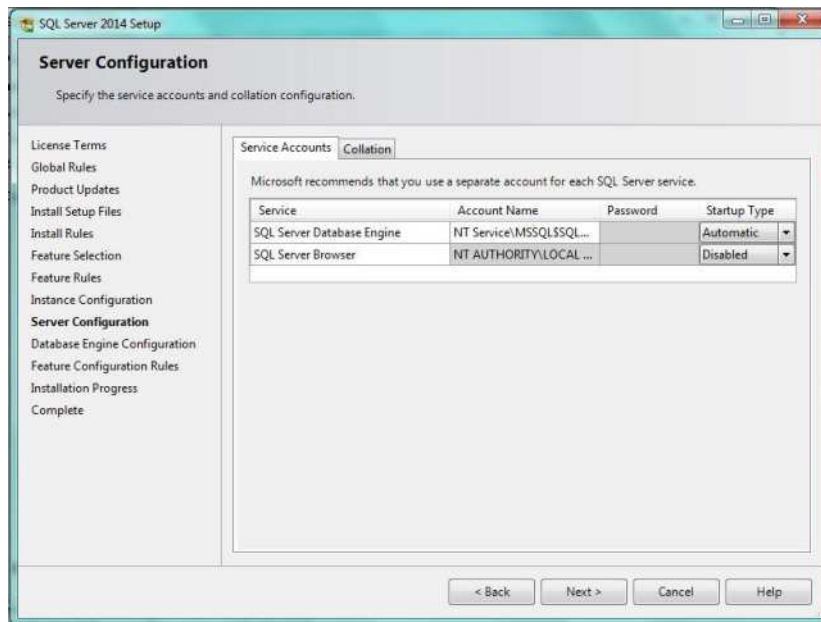


Figure 3 - 5
SQL Installation Server Configuration

7. **Important:** on the Database Engine Configuration screen, select **Mixed Mode authentication** and choose a System Administrator password. Note that later SQL versions require strong, longer passwords than that shown below.

In addition, SQL Server needs to have a SQL Server administrator specified. If unsure about which account to pick and the current user is not already visible, it is recommended to click the **Add Current User** button.

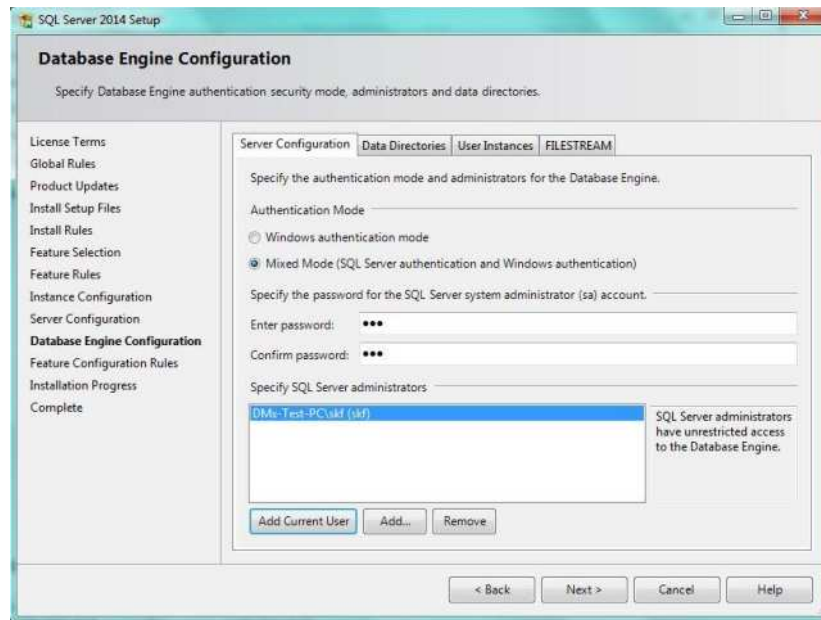


Figure 3 - 6
SQL Installation Database Engine Configuration

8. On clicking **Next**, the install will begin and a progress bar shown:

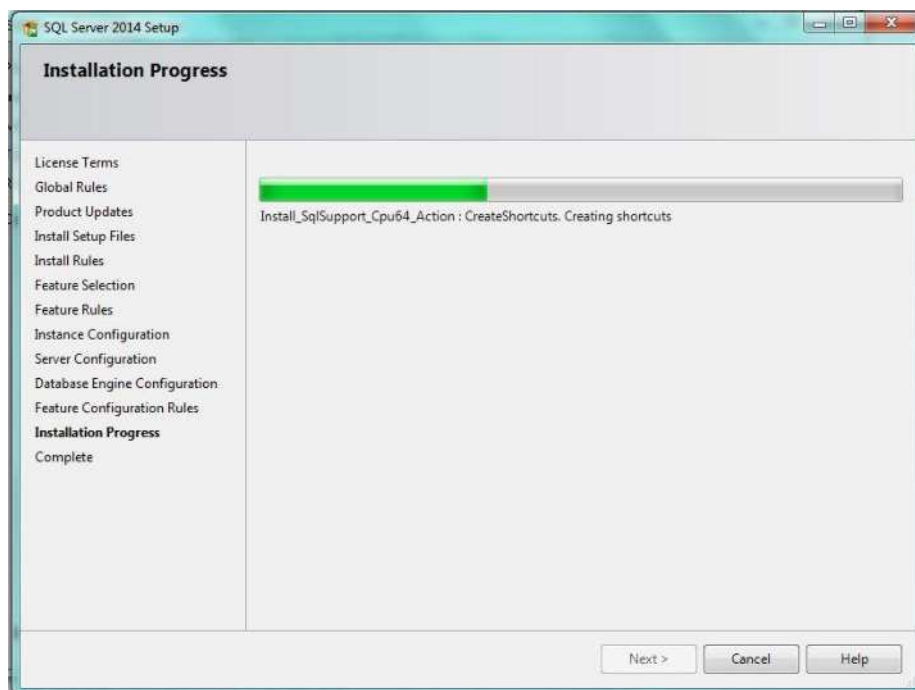


Figure 3 - 7
SQL installing

9 After the installation is complete, click **Close** and if still open, the 'Installation Center' screen can also be closed.

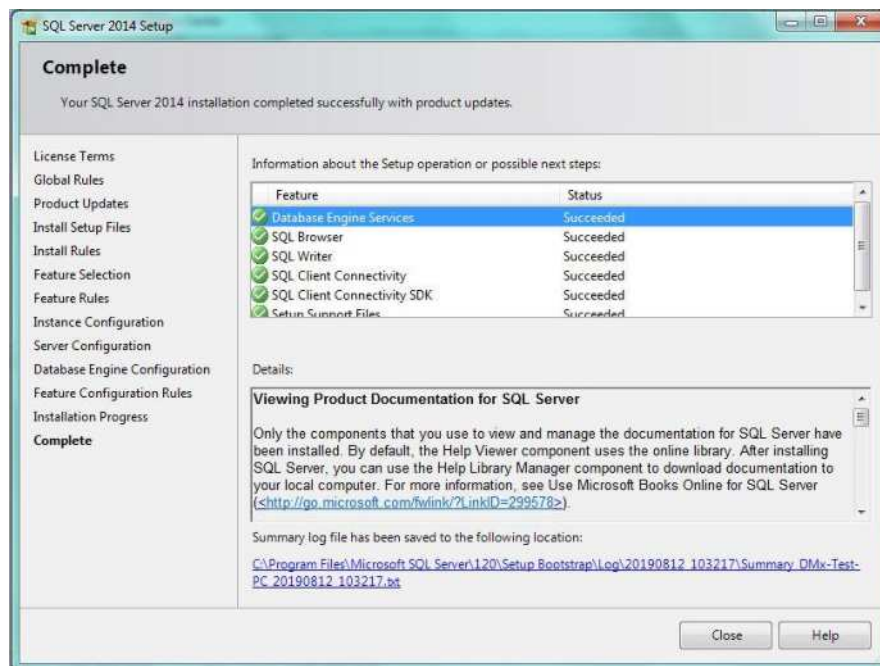


Figure 3 - 8
SQL Installation complete

@ptitude Observer Installation

Installation Procedure

1. Run the SKF @ptitude Observer install file. If asked, the user will need to give permission for the installer to make the necessary changes associated with the software install.
2. The installer will first check if any third-party packages are required to support the software, if asked, click install to continue:

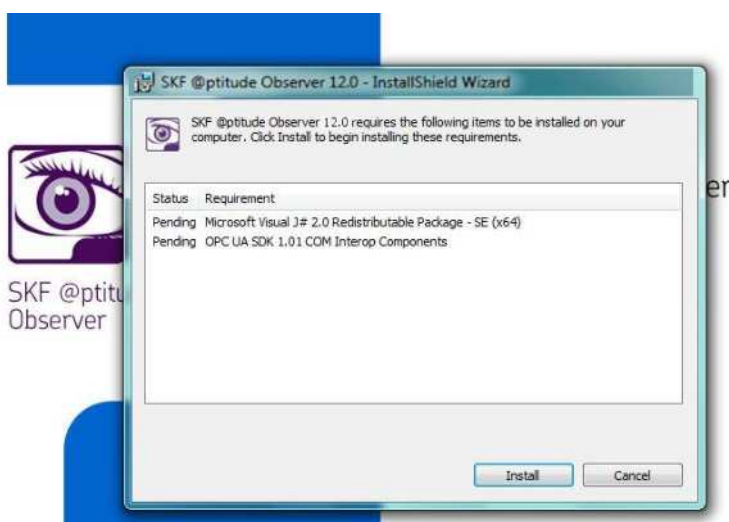


Figure 4 - 1
@ptitude Observer Installation Start

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



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

4. Read the EULA and to proceed, select "I accept the terms in the license agreement" and then click **Next**.

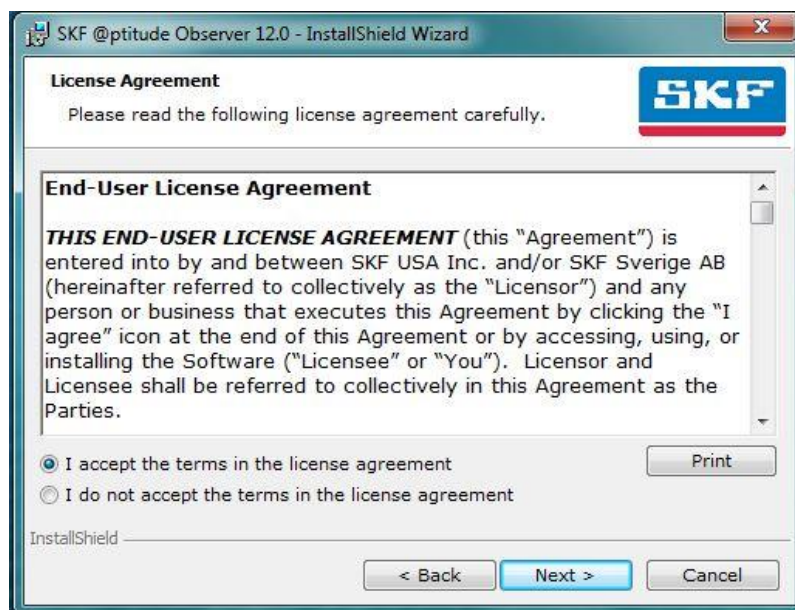


Figure 4 - 3
@ptitude Observer Installation License Agreement

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.

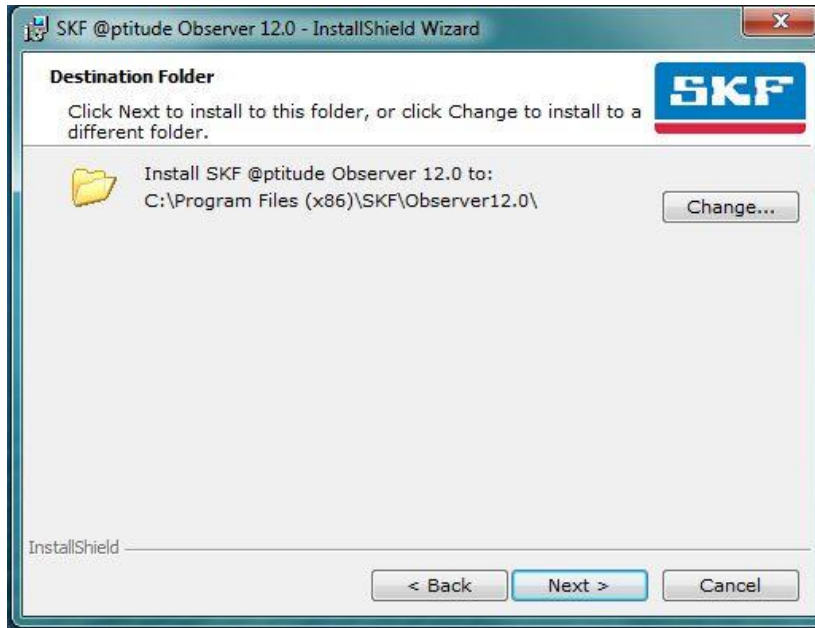


Figure 4 - 4
@ptitude Observer Installation Destination Folder

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

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

Full / Custom installation enables choices to be made on which features to install, as shown in the next step. This, **Full**, option should be used when a complete @ptitude Observer system is being installed on a computer, a so-called stand-alone installation.

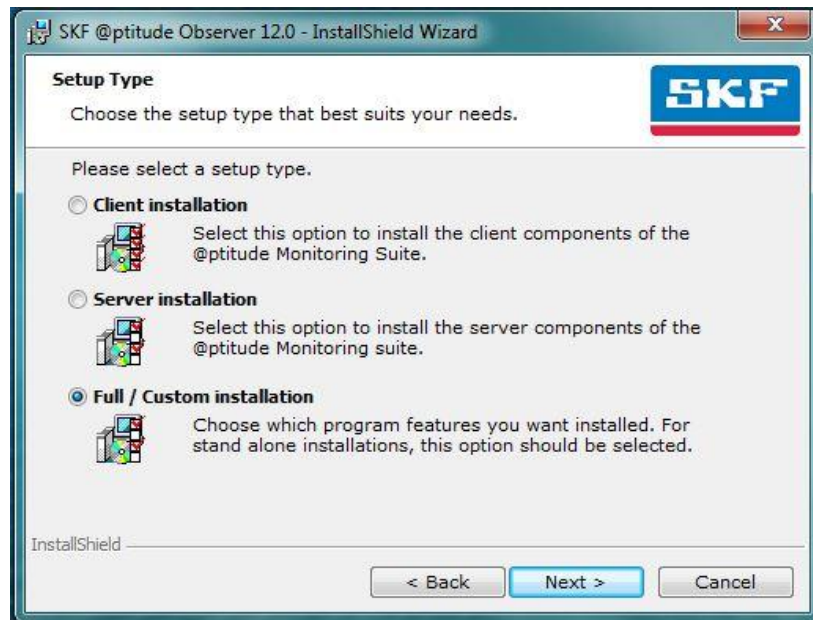


Figure 4 - 5
@ptitude Observer Installation Setup Type

7. Select features to install, typically all of them for a **Full** installation, then click **Next**.

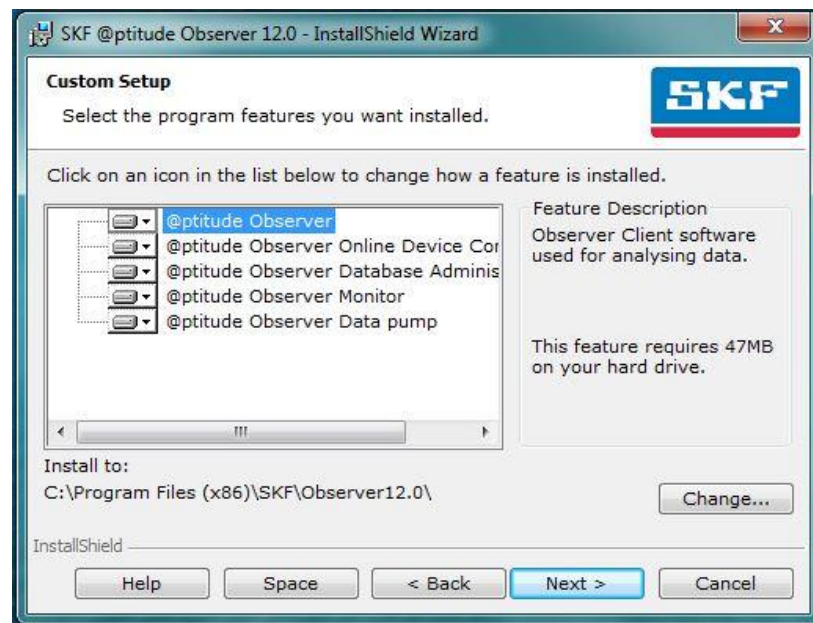


Figure 4 - 6
Example of @ptitude Observer Installation Custom Setup

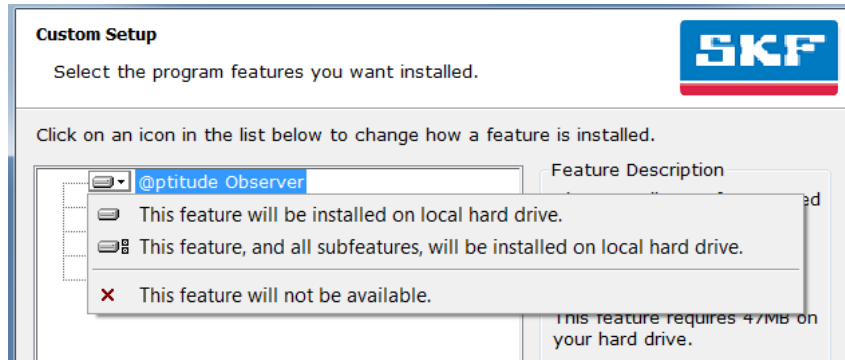


Figure 4 - 7
@ptitude Observer Installation Custom Setup Options

8. After a further confirmation screen, @ptitude Observer will now install.

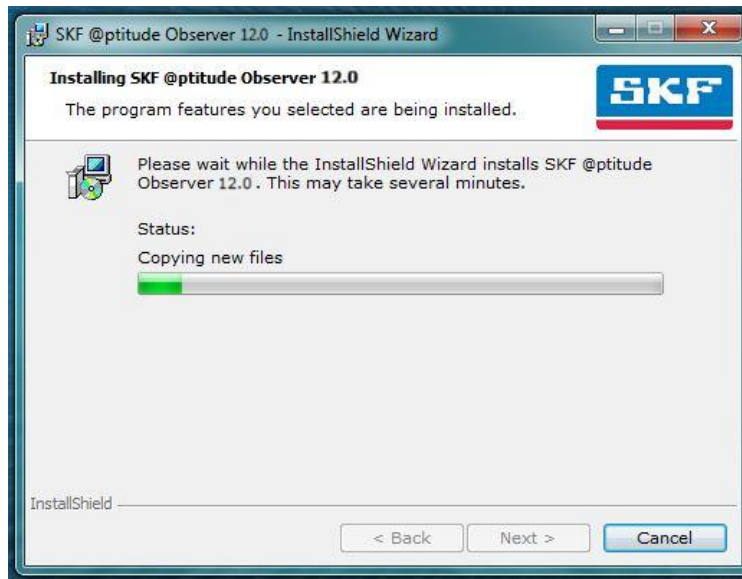


Figure 4 - 8
@ptitude Observer Installation in Progress

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

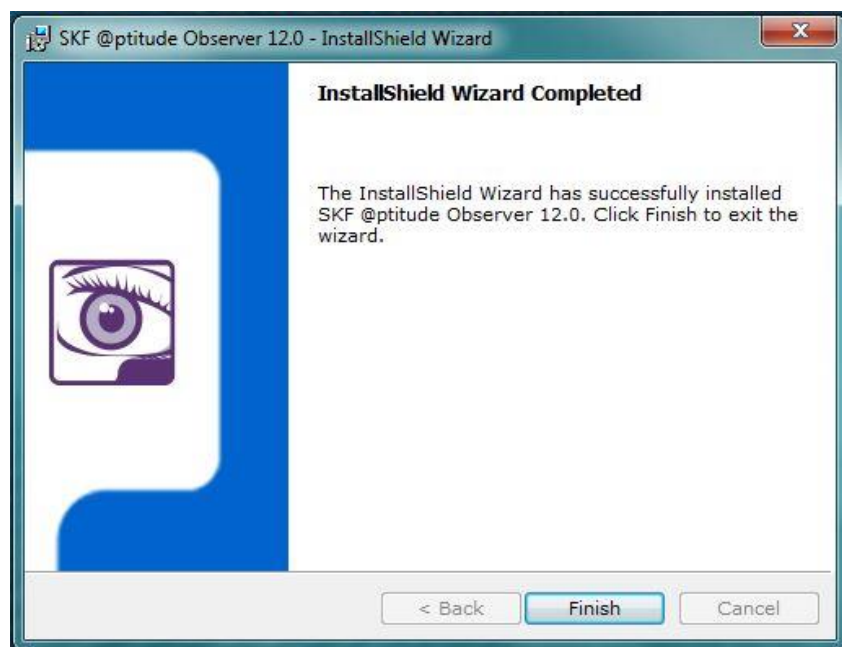


Figure 4 - 9
@ptitude Observer Installation Finish

Prepare an Observer Database

After the @ptitude Observer software has been installed, it is necessary to connect it to an Observer database. Ensure that relevant SQL services are started, before proceeding.

If an Observer database already exists, the database needs to be [upgraded to the @ptitude Observer version](#) now installed.

If an Observer database does not exist, it is necessary to [create a new Observer database](#).

*Note - For more information about @ptitude Observer database administrator, refer to the **SKF @ptitude Observer Database Administrator** user manual, part number 32170600.*

Upgrade an Existing Observer Database

1. Start the @ptitude Observer database administrator software by clicking on the shortcut on the start menu or program list. If asked, at first use, set the program language.
2. Logon to the database server using the credentials specified when installing the SQL server. It is recommended to fully name the database according to the form: 'ComputerName\SQLSeverInstance'.



Figure 5 - 1
Logon

3. In the database list, select the database to be upgraded and click the menu option **Database / Upgrade selected databases**. Note that databases can only be updated one at a time.

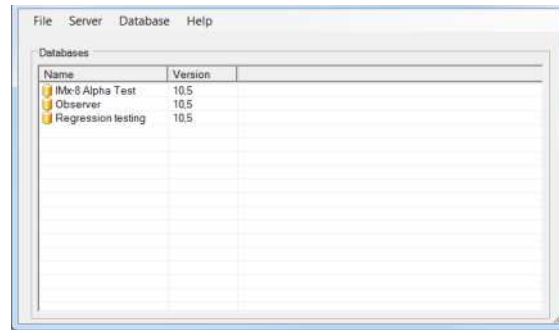



Figure 5 - 2
Example of Observer Databases

4. The database definition file, extension .DEF, that contains the information on upgrading the database is located in the @ptitude Observer installation directory. Use the ellipsis button to select it and click OK. When completed, the user will first receive a message asking if indexes are to be rebuilt (recommended), then the bearing database is updated and finally a message stating that the upgrade has been finished. Otherwise, the user will receive an error message.
5. After the procedure is finished, the selected database is upgraded and if no further databases are to be upgraded then the @ptitude Observer database administrator software can be closed.

 **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 a zero value. The recalculation can be done at Observer Hierarchy view, by right clicking on a node and selecting Configure\Recalculate diagnosis.**

Create a New Observer Database

1. Start the @ptitude Observer database administrator software by clicking on the shortcut from the start menu. If asked, at first use, set the program language.
2. Log in to the database server using the login credentials specified when installing the SQL server. It is recommended to fully name the SQL database according to the form: 'ComputerName\SQLSeverInstance', refer Figure 5 - 1.
3. Click on the menu option **Server / Create new database**.



Figure 5 - 3.
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).

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

5. Click on the **Create** button.
6. At the end of the Create database procedure, at the prompt, select the measurement units to use for the Diagnosis and the Protean Diagnosis rules in @ptitude Observer and click the **Update** button.

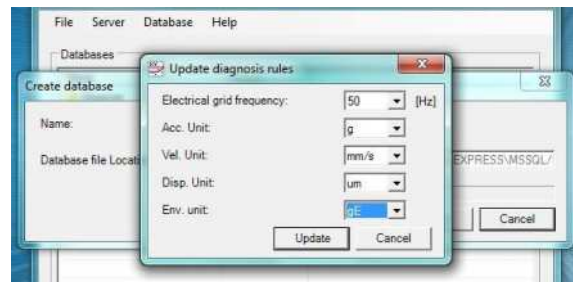


Figure 5 - 4
Example of Update diagnosis rules, dialog

Note that if the choices are not yet decided upon, clicking **Cancel** at this point will still create the new database and the Update diagnosis rules dialog can be launched again by selecting the database and choosing **Database / Update diagnosis**. This latter option is a general feature that allows settings for an existing database to be changed.

As the creation process ends, a message confirms that a default administrator account with the credentials admin/admin has been automatically created for the new database.

@ptitude Observer Monitor Service

To be able to use @ptitude Observer as an on-line system, the communication and database storage are performed by an Observer monitor service. There can be several Observer monitor services operational at the same time, supporting different databases, but each will need to be allocated a different port.

Adding a Monitor Service

1. To add or manage an Observer monitor service, start the @ptitude Observer Monitor Manager software by clicking on the shortcut on the start menu under **All Programs\SKF @ptitude Monitoring Suite X.Y\Monitor Service Manager** or for Windows 10 **SKF @ptitude Monitoring Suite X.Y\Monitor Service Manager** in the alphanumeric list of installed programs. If asked, the user will need to give permission for the software to make the necessary changes.

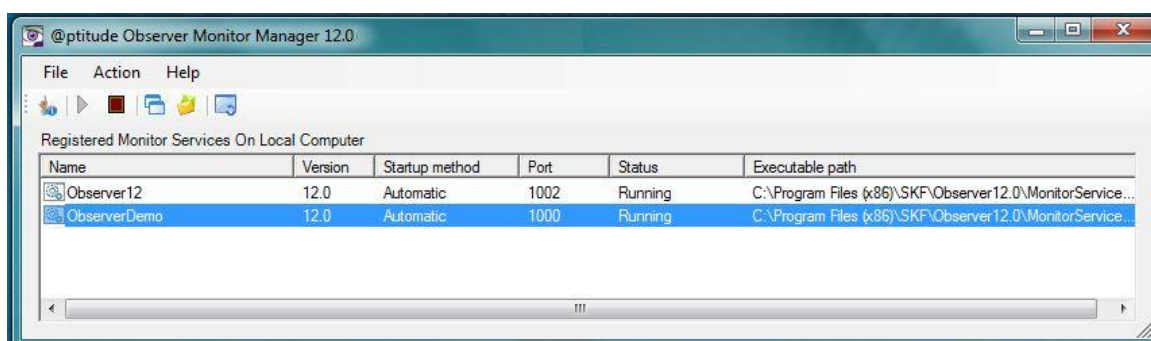


Figure 6 - 1

Example of @ptitude Observer Monitor (Service) Manager

Observer Monitor (Service) Manager screen lists all the registered monitor services on the local computer. If this is a new install, no services will be listed.

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**.

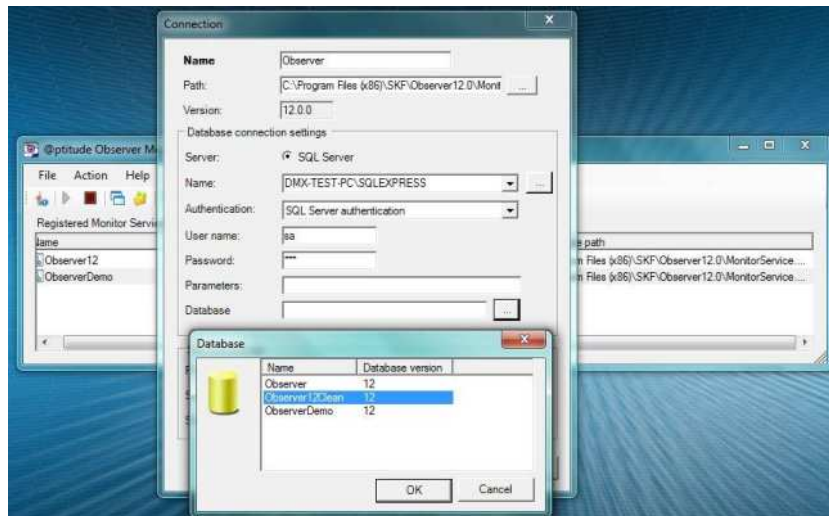


Figure 6 - 2
Example of @ptitude Observer Monitor Service – Connection

Name is a unique name which has to be given to the service used to identify the registered database connection. 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.

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

Database connection settings

Server is the type of database server: SQL Server.

Name is for specifying the location of the SQL database, a full path comprised of 'ComputerName\SQLSeverInstance', is recommended.

Authentication defines whether to use *Windows authentication* or *SQL Server authentication* for SQL Server. Select *SQL Server authentication* and then enter the user name and password.

User name is the database user name.

Password is the password for that 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. As shown in Figure 6 – 2 above, clicking the ellipsis button will cause the software

to connect and retrieve a list of the available databases. A selection can then be made. The Observer software version and the version of the selected database must match.

Service settings

Port is used to assign which port the Observer monitor service should use to communicate with @ptitude Observer and IMx devices. The default value is 1000, but other ports can be allocated if 1000 is already in use.

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 start-up method *Automatic*. Whereas, it is recommended to set this field to 0 for the start-up method *Manual*.

Startup method sets the start-up method of the service to either Automatic, Manual or Disabled. Automatic is the usual setting for an @ptitude Observer system.

- **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.

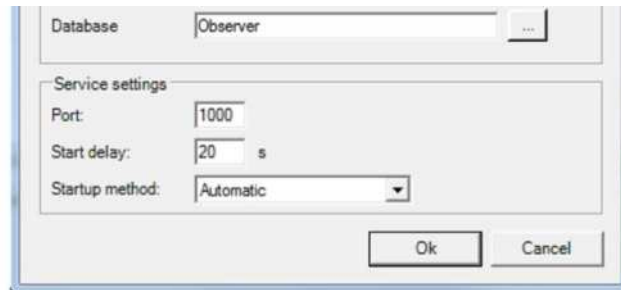


Figure 6 - 3
Example of Service settings

After completing the configuration, press **OK** to create the service, it should now appear on the list of 'Registered Monitor Services'.

3. A recovery plan, in case of an unrecoverable error, for registered monitor services resides within Windows' interface **Services (Local)** which is located under Administrative Tools in Control Panel.
 - Observer monitor services start with the text "ObsService_".

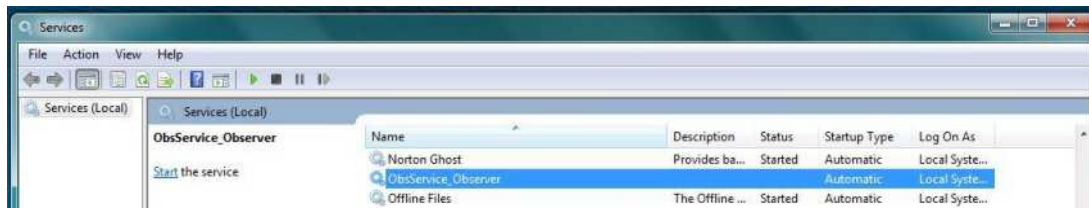


Figure 6 - 4
Example of Window's Interface Services

Select an Observer monitor service, then select **Properties** under Action, or, right-click on an Observer monitor service and select **Properties**. Select **Recovery** tab

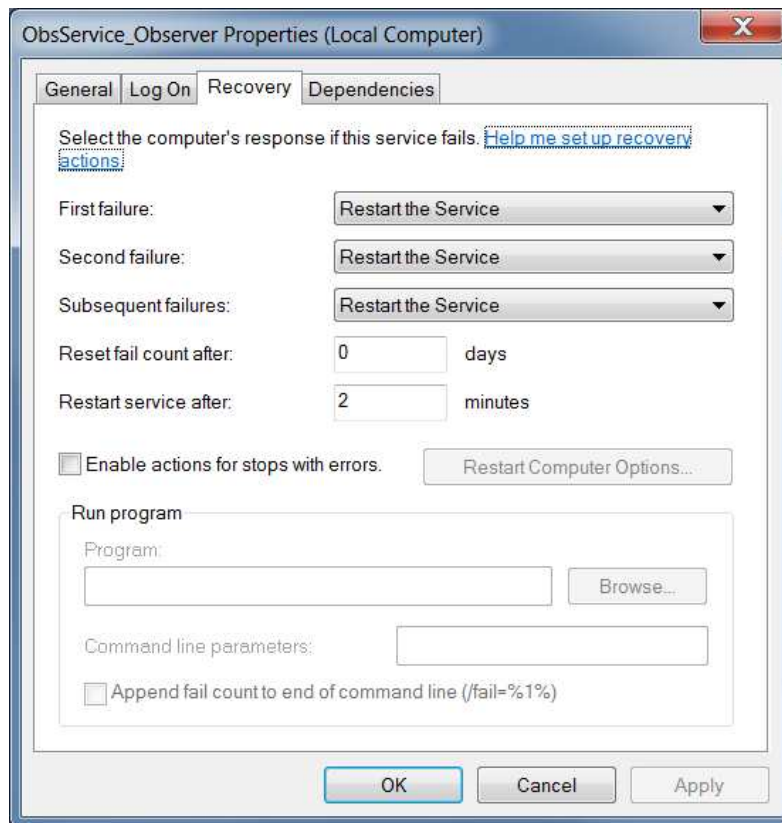


Figure 6 - 5
Example of Recovery Setting

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

Edit Observer Settings

Language and License Key

When installing @ptitude Observer, a setting file called @ptitude Observer.ini is created in the user application data folder, which by default is located at:

C:\Users\[User name]\AppData\Roaming\SKF\Observer X.Y\@ptitude Observer.ini.

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

```
[System]
```

```
Language=English
```

```
RegKey=X58BB8-92JJ85-XY73GH-PC493L-9YMCV6-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, although both aspects can be managed within the @ptitude Observer software. If changes are made these take effect the next time the @ptitude Observer software is started.

Application Data Folder

The application data folder is used to store user specific data for the @ptitude Observer application such as connection files and .ini files. Which folder to use as the application data folder can be specified, the default is the user's own application data folder as mentioned above.

One of two command line 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 that the executable file resides in, for its application data.

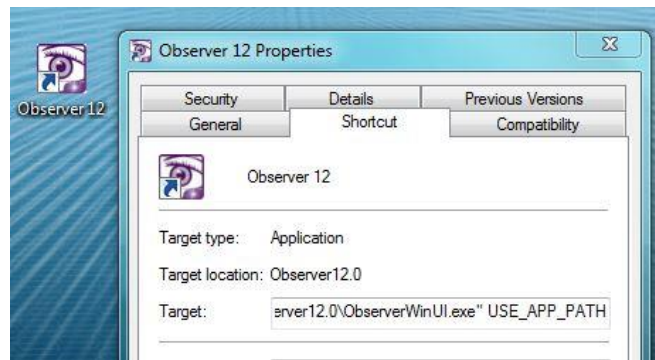


Figure 7 - 1
USE_APP_PATH example

Create a new shortcut to the ObserverWinUI.exe file and then edit its properties.
Add the text USE_APP_PATH in the target field as shown in the screen shot, above.

Specify a Custom Folder via the properties of the @ptitude Observer 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". The specified folder must already exist.

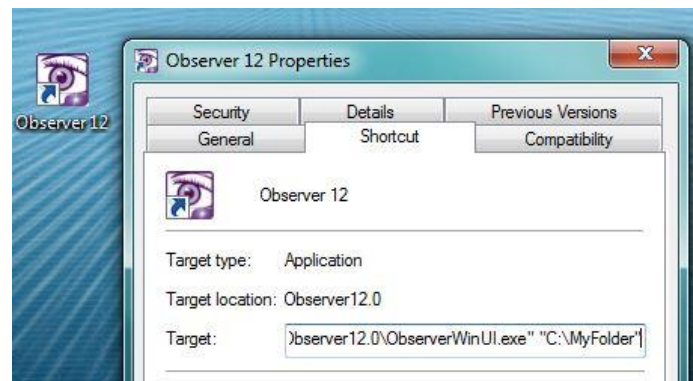


Figure 7 - 2
Assigning a Custom Folder as an Application Data Folder

- There is a shortcut "**Application data**" located on the start menu under **All Programs\SKF @ptitude Monitoring Suite X.Y** or for Windows 10 **SKF @ptitude Monitoring Suite X.Y** in the alphanumeric list of installed programs. Note that this shortcut opens a file explorer window at C:\ProgramData\SKF\Observer X.Y. This is the location where log and similar files are stored, not the 'ini' and connection files referred to above.

IMx/MasCon Network Settings

For communications to be established between IMx/MasCon devices and @ptitude Observer monitor the on-line devices require some initial configuration of their network settings.

For further information, refer to the corresponding IMx device/model user manual and the **SKF @ptitude Observer On-line Device Configurator** user manual, part number 32170800.

9

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, follow the procedure below.

1. Open port 123 in the firewall. The procedure for this will depend on the operating system and/or firewall software in use.
2. Go to services and check that "Windows Time" service start-up method is set to "Automatic" and that it has started.
3. Double click on the file EnableTimeSync.reg in the Extra\TimeSync folder. 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

Important notes:

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 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.

General software update procedure:

Note that there is no need to uninstall the database manager such as SQL Server, in order to upgrade the system. The process for upgrading the SKF software will be generally as follows:

- Use the services interface in windows to stop all related services such as “ObsService_” plus any that are SQL related.
- If not retaining the earlier @ptitude Observer version or if required to by the install, uninstall the current @ptitude Observer instance.
- Install the new @ptitude Observer software.
- Restart any stopped services or reboot the computer.
- Use @ptitude Observer database administrator to [upgrade](#) any existing databases to the latest structures and/or [create](#) new, empty databases for use with this software version.
- Start @ptitude Observer and check via the lower status bar that it has connected correctly to the database and to the monitor service.
- Add firmware (pkg files) as required for the DADs being used in the system.

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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