Installation and Configuration Guide

AutroSafe OPC Server

AUTRONICA

P-116-ASAFE-OPC-INST/DGB, Rev. A, 2010-01-20

CE

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1. Introduction

1.1 About this document

This document describes how to install and configure the AutroSafe OPC Server. Information in this document is intended for system administrators (people who are in charge of installation and configuration of the product).

1.2 Product overview

The AutroSafe OPC Server is providing a standard OPC interface for the AutroSafe Interactive Fire Detection System. OPC (OLE for Process Control) is a software standard used by Windows based applications to access data from process control systems. The basic principle of OPC is that OPC client applications communicate with an OPC server via a standardized, open and therefore vendor independent interface.

Below you can find a schematic picture of an AutroSafe Interactive Fire Detection System including usage of an AutroSafe OPC Server for access and control of the safety system:

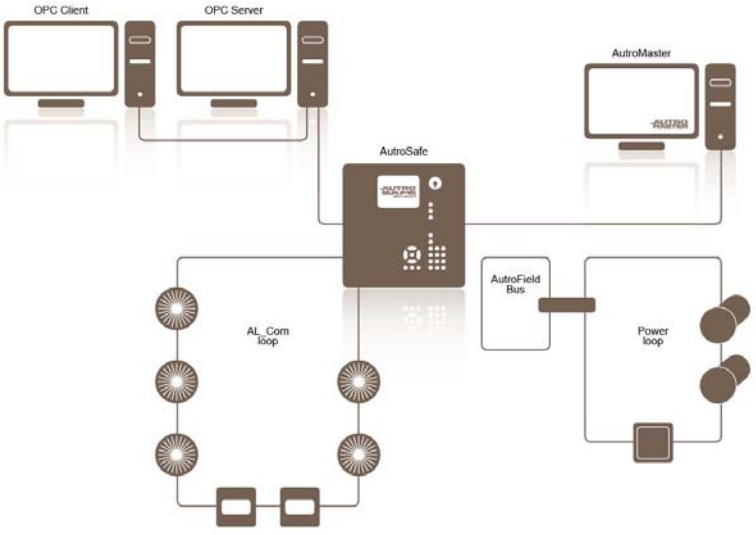


Figure 1 AutroSafe OPC Server Overview

The AutroSafe OPC Server provides a standard and vendor independent interface for supervision, access and control of detectors (Smoke- Gas- Heat- and Flame detectors) and other field units connected to an AutroSafe Interactive Fire Detection System.

1.2.1 Product scope

The AutroSafe OPC Server software enables data exchange between Windows applications and units connected to an AutroSafe Interactive Fire Detection System. The OPC Server can be used by any OPC client application with support for the Data Access Custom Interface standard. The OPC interface can be used to integrate process control systems from vendors like ABB, Honeywell and Siemens. It can also be used by simple OPC Clients such as Matrikon OPC Explorer.

1.2.2 Functionality overview

The AutroSafe OPC Server is connected to the AutroSafe safety network via an AutroSafe Panel i.e. the Top Operation Zone of all information in the system. The communication between the OPC Server and the fire and detection system is handled via the AutroCom interface available through the AutroSafe Panel.

During startup of the OPC Server the specified configuration file is compared and matched towards the actual configuration running in the AutroSafe Panel. Without a match of configurations, the OPC Server will not start and report an OPC Failed status.

After a successful startup of the AutroSafe OPC server the OPC browse interface provides a system structure that reflects the AutroSafe system. Via the browse interface both read, read/write and write OPC items will be accessible. Some of the items are static while others are dynamic and present the status of the AutroSafe system. All OPC items are accessible from a third party OPC client.

The static read OPC items are properties of an object instance that do not change during runtime. Examples of static object attributes are Name, Description and Type.

The dynamic read OPC items are used for supervising the status of the system and the attached units in the AutroSafe system. Examples of dynamic object attributes are Smoke, Temperature, Fault, Alarm and Disabled.

The writable OPC items are used for controlling the AutroSafe system. Examples of writable items are Reset, Disable and SetTime.

For more information about the AutroSafe OPC Server functionality, see Operating Guide.

1.2.3 Product release history

The table below shows the Release history of the AutroSafe OPC Server product:

Product/Option	Ordering No	Actual Revision	Release date
AutroSafe OPC Server		1.0-0	2009-06-15

Table 1 Product release history

1.3 Prerequisites and requirements

The following recommendations apply for the AutroSafe OPC Server:

AutroSafe Panel – Compatibility: Version 3.7.1 or later

Hardware requirements:

Description	Minimum	Recommendation
CPU Frequency	1 GHz	2 GHz
RAM	2 GB	3 GB
It is a requirement that the selected personal computer must be designed to withstand climatic, mechanical and electrical effects in the intended environment.		

Table 2 Prerequisites and requirements

Software requirements:

Required software for installing the AutroSafe OPC Server
Windows XP SP3 or Windows 2003 server SP1
.Net Framework 3.5

Table 3 Software requirements

1.4 Related documentation

Document	Identity/Version
AutroSafe Operating Guide	P-116-ASAFE-OPC-OPER/FGB
AutroCom 3.1 Protocol Specification	Revision 3.11

Table 4 Related documentation

1.5 Terminology

Term	Description
COM	Component Object Model, a specification that defines how individual software components can interact and share data under Windows. Developed by Microsoft.

DCOM	Distributed COM. Extends COM to networks
GB	Giga Byte
GHz	Giga Hertz
OLE	Object Linking and Embedding. A technology, based on COM, developed by Microsoft
OPC	OLE for Process Control
PC	An abbreviation for both personal computer and process controller

Table 5 Terminology

2. Considerations

2.1 Introduction

This section highlights some important considerations which will be of importance before you configure and use the AutroSafe OPC Server.

2.2 License handling

The AutroSafe OPC Server has a license model that is divided into three different license levels:

- Level 1 - Includes read access to all status information for detectors, output and alarm devices. This level of license will also make it possible to send (write) Silence, Reset and SetTime commands to the AutroSafe system. Within this level you can also Disable/Enable detectors.
- Level 2 – Includes all functionality in level1. Added functionality to level 2 is the possibility to Activate/Deactivate and Enable/Disable outputs and alarm devices via OPC write commands.
- Level 3 – Includes all functionality in level 1 and 2. This level also provide additional information for points, for example AMEAS, Temp, Smoke, Alarm limits and Engineering values.

2.2.1 License handling functionality

The license level determines which Read/Write access an opcitem has. The expected license behavior regarding opcitem functionality can be seen below:

- Writing to a write access opcitem without a valid license will result in an error response. There will also be a log generated in the log file.
- If an opcitem has both Read/Write access rights, the Write access right will be disabled if the applied license level is to low.
- If the opcitem only has Read access rights no information will be displayed in the opcitem.

Please see the Operating Guide for more information about the different objects and the license level for each opcitem.

2.3 Log information

The startup and runtime information generated by the AutroSafe OPC Server is available in Windows Event Viewer and in application log files specifically created for the AutroSafe OPC Server.

2.3.1 Event Viewer

All application information of importance for an operator or administrator of the AutroSafe OPC Server is available in the Windows Event Viewer. Startup information as well as runtime exceptions can be confirmed respective investigated in the event viewer log. For more information about the Event Viewer information, see Maintenance.

2.3.2 Log files

The log files connected to the AutroSafe OPC Server are separated into two different category types:

- Operator log – Including startup information and specific error application messages generated during runtime operation. The information in the operator log is very similar to the information in the Windows Event Viewer.
- General log – Including errors or information not handled by the Operator log.

The location of the log files is decided during the configuration phase of the OPC server. A recommendation is that the “log path” is specified to a disk that can handle large files. For more information about the log file information see, Maintenance.

2.4 Time synchronization

The time synchronization feature in the AutroSafe OPC Server is configurable; either the time synchronization functionality is enabled or disabled.

If the time synchronization is enabled, the AutroSafe system time will be synchronized with the computer time of the PC running the OPC Server. The time is set via a SetTime request, ones each day or/and each time the OPC Server starts.

There is no specific functionality implemented for verification or comparison of time synchronization mismatch during runtime.

3. Installation

3.1 Installation overview

This section will guide you through the installation procedures of the AutroSafe OPC Server product and other required software. To be able to carry out the installation and configuration procedures described in this manual you need to have Windows Administrator privileges.

The installation procedures below require that the preconditions in chapter Prerequisites and requirements are fulfilled. We recommend that you go through the following installation steps:

1. Make a full backup (for safety reasons) of your computer disk(s).
2. Set up the communication between the AutroSafe system and the PC that shall run your AutroSafe OPC Server.
3. See to that the AutroSafe Configuration file is available.
4. Install the AutroSafe OPC Server software according to chapter Software installation.
5. Make another full backup (for safety reasons) of your computer disk(s).

3.2 Software installation

This section will guide you through the installation steps needed to install the AutroSafe OPC Server:

1. Log on the computer as a user with windows administration privileges.

2. Insert the AutroSafe OPC Server installation CD. The first dialog will automatically appear. Click Next and follow the instructions.

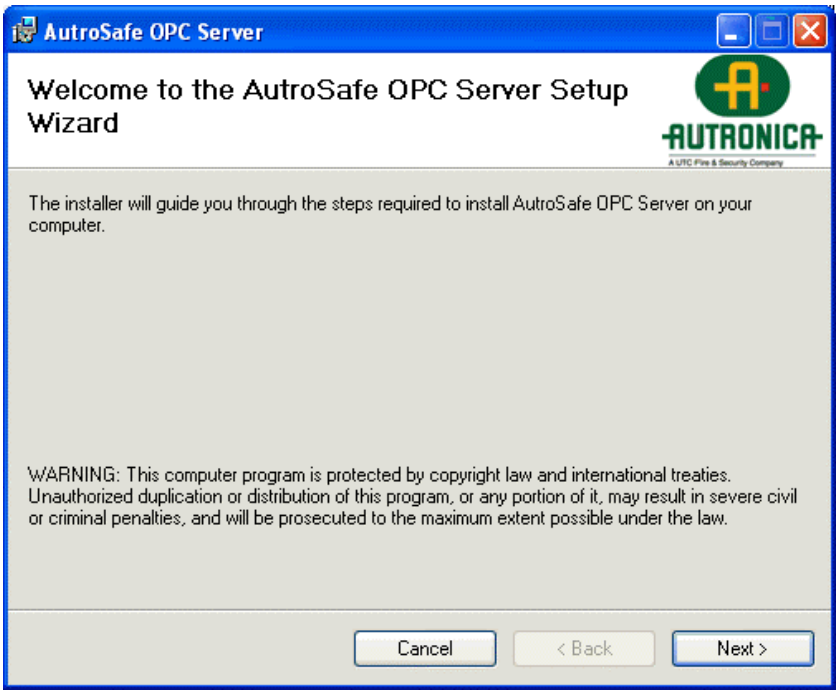


Figure 2 Installation dialog

3. Select installation folder by browsing or typing in the folder path. Choose the “Everyone” option button and click next.

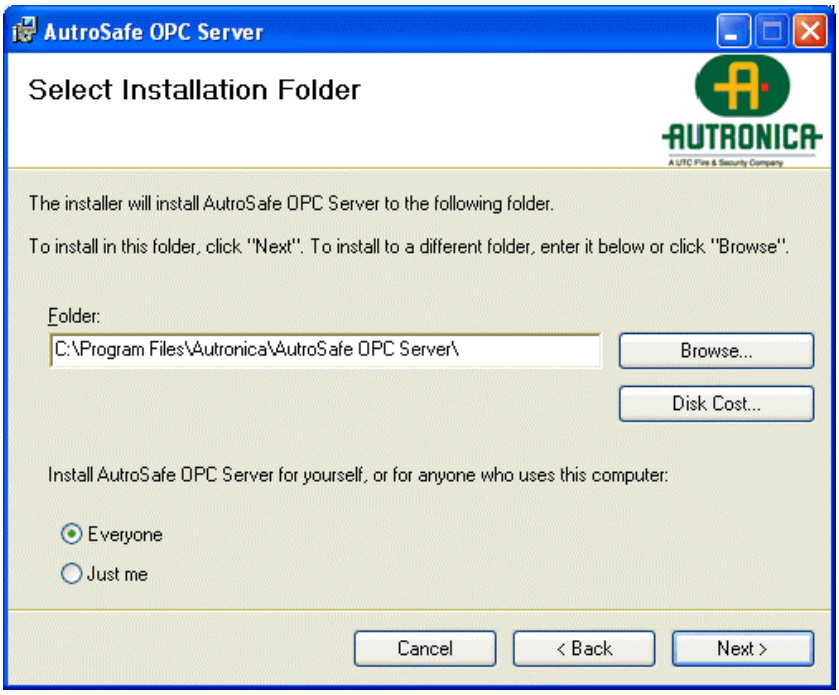


Figure 3 Select installation folder

4. Confirm installation by clicking Next again and installation will start.

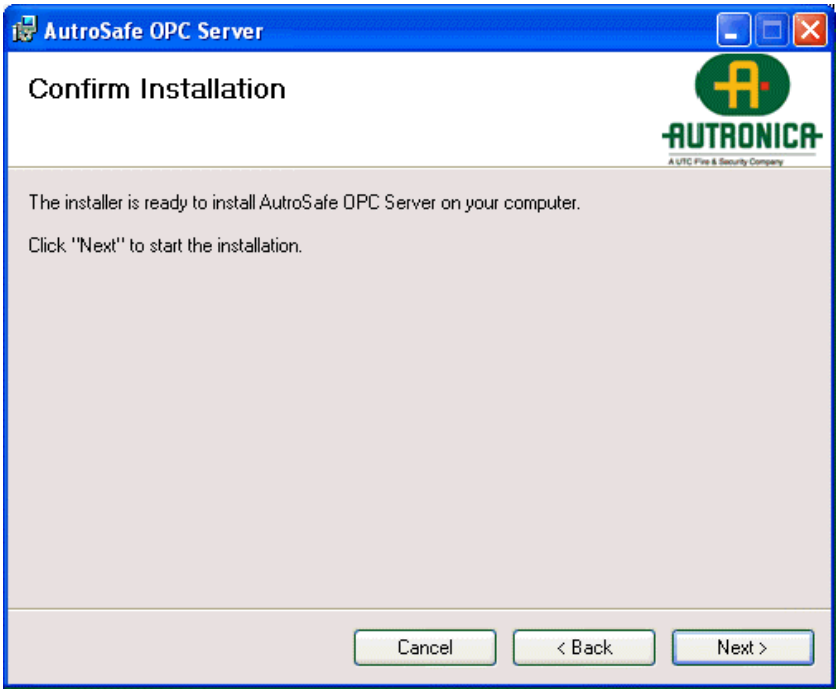


Figure 4 Confirm dialog

5. Click Close button after installation is complete.

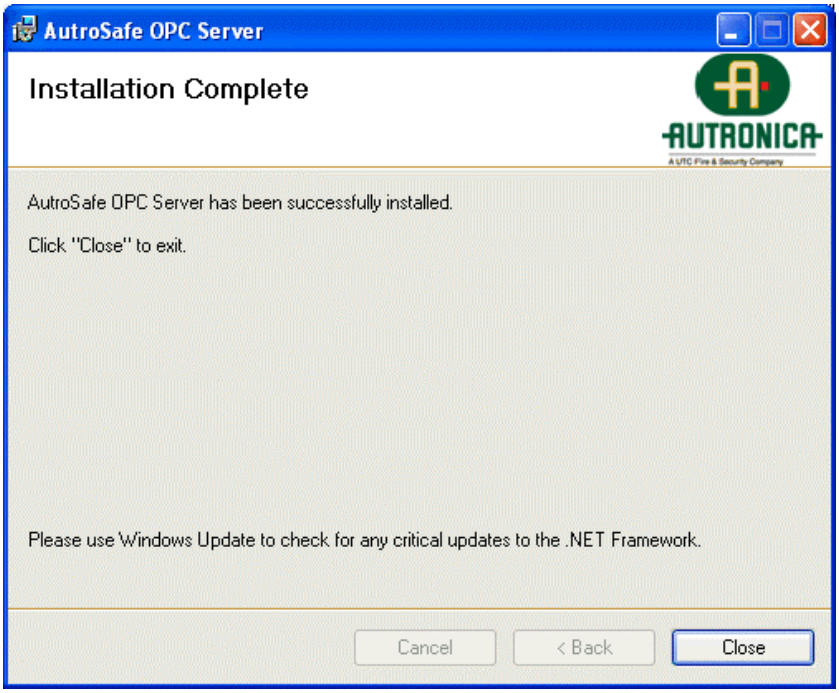
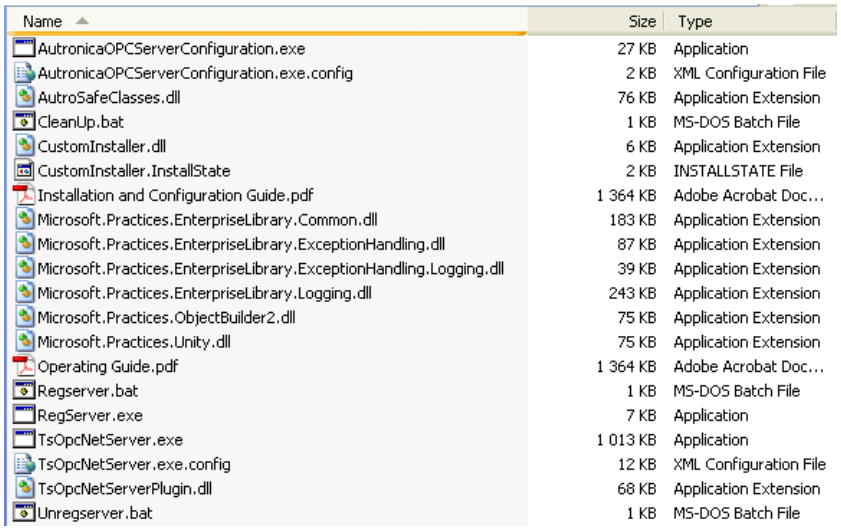


Figure 5 Installation complete dialog

3.3 Verify installation

You can verify the installation of the AutroSafe OPC Server by opening the file explorer and browse to the installation path folder. Verify that you can find the files below.



Name	Size	Type
AutronicaOPCServerConfiguration.exe	27 KB	Application
AutronicaOPCServerConfiguration.exe.config	2 KB	XML Configuration File
AutroSafeClasses.dll	76 KB	Application Extension
CleanUp.bat	1 KB	MS-DOS Batch File
CustomInstaller.dll	6 KB	Application Extension
CustomInstaller.InstallState	2 KB	INSTALLSTATE File
Installation and Configuration Guide.pdf	1 364 KB	Adobe Acrobat Doc...
Microsoft.Practices.EnterpriseLibrary.Common.dll	183 KB	Application Extension
Microsoft.Practices.EnterpriseLibrary.ExceptionHandling.dll	87 KB	Application Extension
Microsoft.Practices.EnterpriseLibrary.ExceptionHandling.Logging.dll	39 KB	Application Extension
Microsoft.Practices.EnterpriseLibrary.Logging.dll	243 KB	Application Extension
Microsoft.Practices.ObjectBuilder2.dll	75 KB	Application Extension
Microsoft.Practices.Unity.dll	75 KB	Application Extension
Operating Guide.pdf	1 364 KB	Adobe Acrobat Doc...
Regserver.bat	1 KB	MS-DOS Batch File
RegServer.exe	7 KB	Application
TsOpcNetServer.exe	1 013 KB	Application
TsOpcNetServer.exe.config	12 KB	XML Configuration File
TsOpcNetServerPlugin.dll	68 KB	Application Extension
Unregserver.bat	1 KB	MS-DOS Batch File

Figure 6 Installation verification

You can also open the Add/Remove programs and verify that the AutroSafe OPC Server is represented as an installed application on your computer.

3.4 Remove installation

The removal procedure described below will completely remove the AutroSafe OPC Server from the PC.

Note! To be able to perform a removal, you need to have administrator privileges.

Removal procedure:

1. Stop the AutroSafe OPC Server by identifying it in services right click and choose stop.

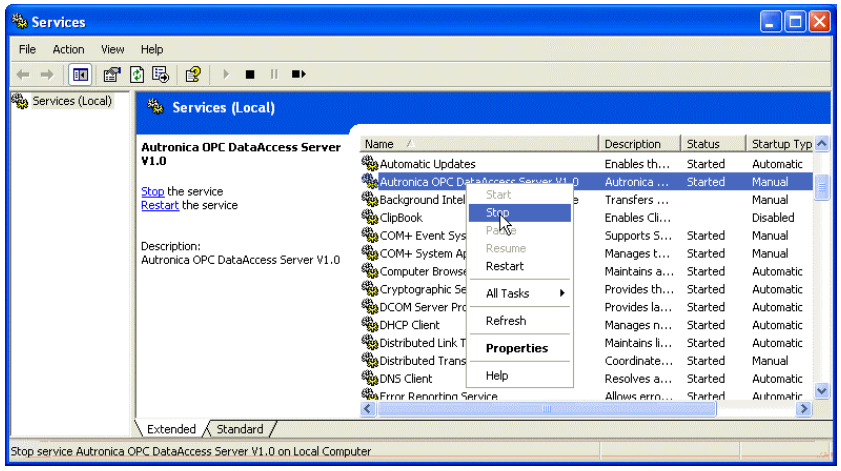


Figure 7 Stop AutroSafe OPC Server

2. Open the Add/Remove programs and locate AutroSafe OPC Server. Choose Remove.

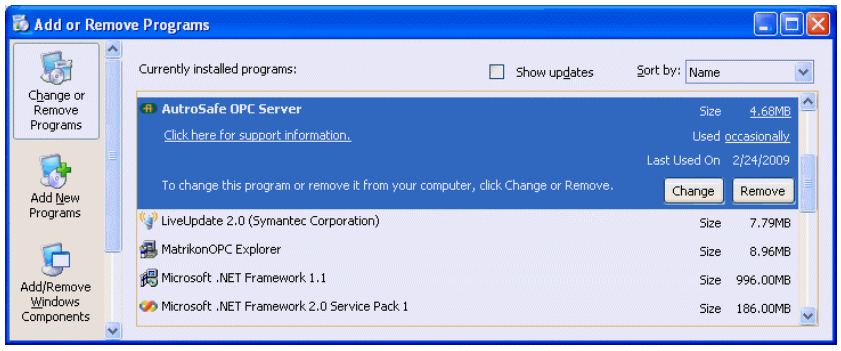


Figure 8 Add or Remove programs

3. Choose Yes in the dialog box that appears.

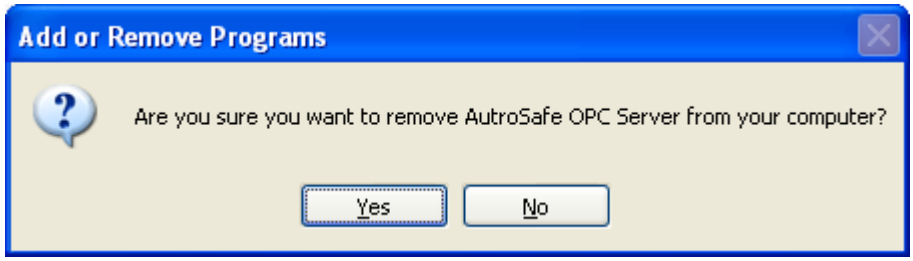


Figure 9 Remove confirmation

3.5 Verify removal

To verify that the product has been completely uninstalled open file explorer and try to browse to the installation path folder. Verify that the installation folder no longer exists.

4. Configuration

4.1 Configuration overview

This section will guide you through the configuration procedures of the AutroSafe OPC Server. To carry out the configuration procedures you should have good knowledge about the AutroSafe system and the overall system setup including your time synchronization plans.

Note! Before configuring the AutroSafe OPC Server, read the chapter Considerations.

We recommend that you go through the following installation steps:

1. Make sure that you have TCP/IP communication between the AutroSafe system and the PC that shall run your AutroSafe OPC Server.

2. See to that you have a correct AutroSafe Configuration file available.

3. Configure the AutroSafe OPC Server software according to chapter Configuring the OPC Server.

4. Startup the OPC Server.

4.2 Configuring the OPC Server

This section will guide you through the configuration steps of the AutroSafe OPC Server.

1. Open the configuration dialog by **Start -> All Programs –> Autronica->AutroSafe OPC Server Configuration**. The configuration tool will start.

2. In the first configuration dialog window, alter settings for the **IP-** and **Port number** on which you will establish a connection with the AutroSafe system. Also enter or change the **Password** for AutroSafe Logon.

   Remember that the entered ip number shall address the Top Operation Zone. When done click **Next**.

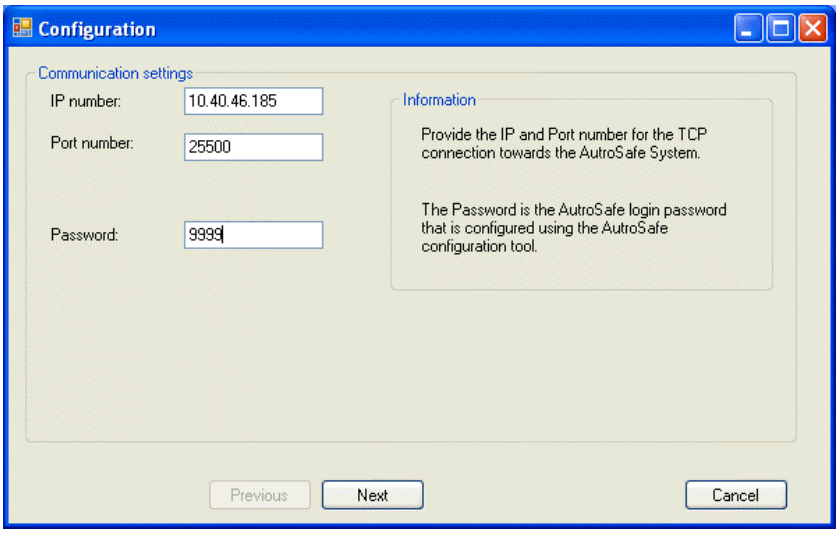


Figure 10 Set IP address, Port number and password

3. In the next screen, specify the path to the AutroSafe configuration file and also decide if the AutroSafe system shall be time synchronized with the OPC Server time.

   Provide the Software License Key for the AutroSafe OPC Server. When done click **Next** button.

   Note! The time of the supplied configuration file will be checked against the configuration running in the AutroSafe system. If they do not match the AutroSafe OPC Server will report status failed.

   Note! If you have more than one Autronica OPC Server connected to the AutroSafe system only one should have time synchronization enabled.

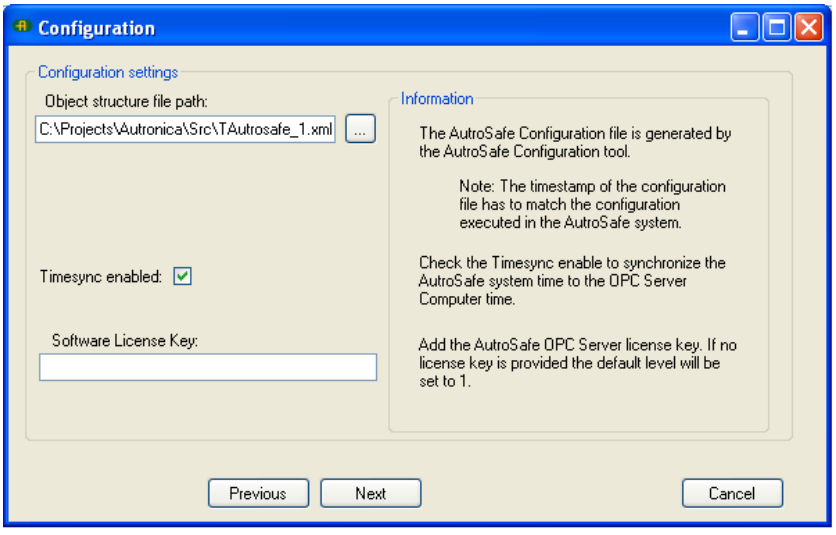


Figure 11 Installation path

4. In the next screen you shall choose the location for the runtime log files of the AutroSafe OPC Server. When done click **Next**.

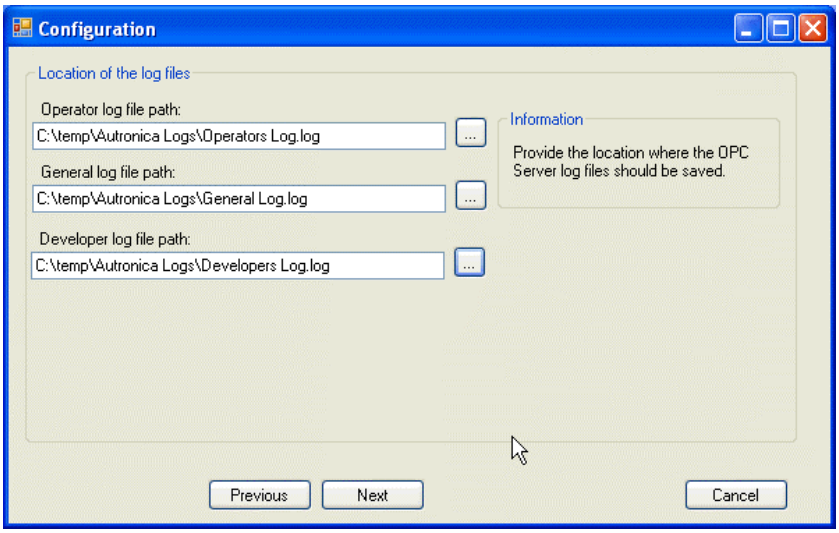


Figure 12 Log Path configuration

5. A summary of your configuration settings is displayed. If you are satisfied with the settings, click **Save**.

6. Open up the services console by using **Start -> Administrative Tool –> Services** and identify Autronica OPC DataAccess Server.

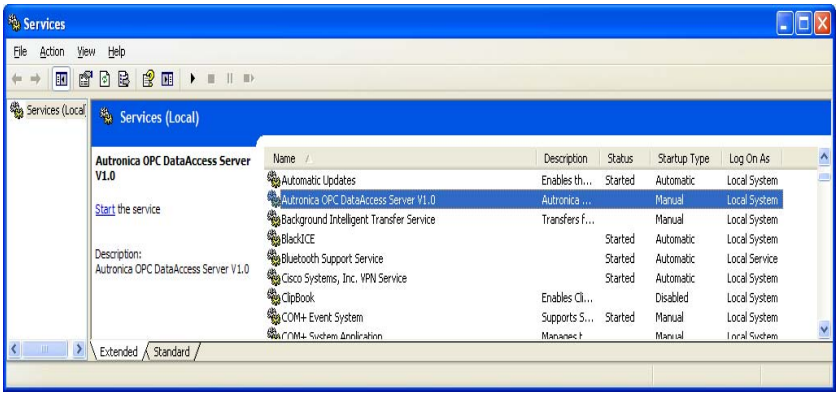


Figure 13 Services

7. Right click on Autronica OPC DataAccess Server and choose properties. In the dialog that opens click on the Log On tab.

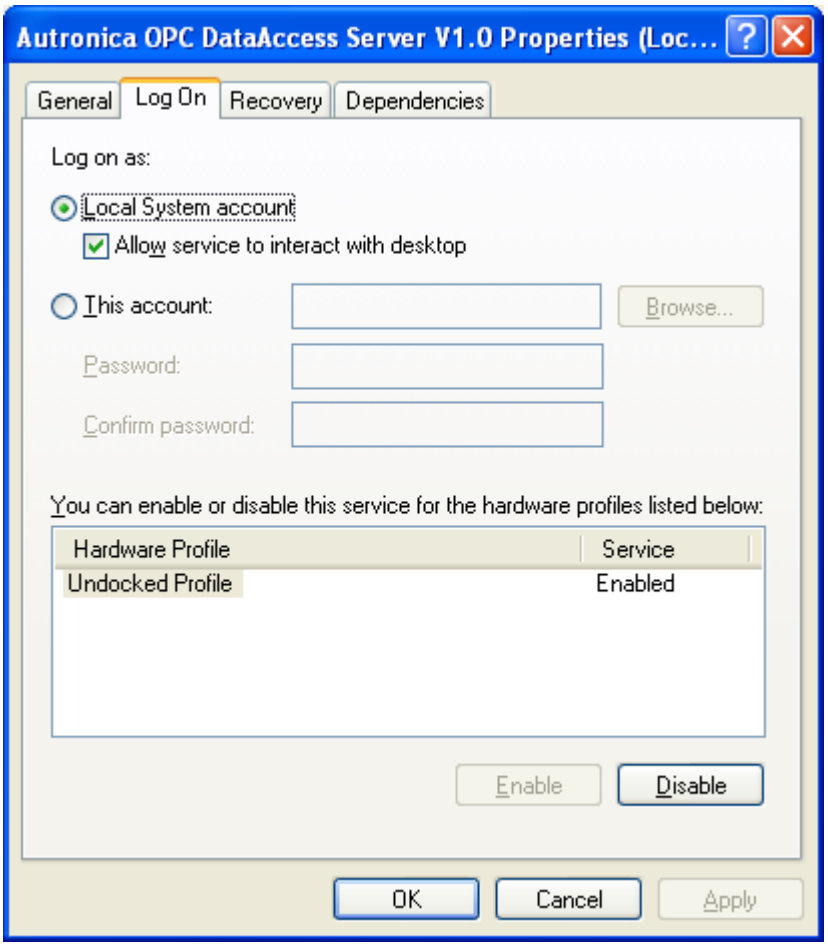


Figure 14 Log On Tab

8. Choose This account and then enter an account with administrator privileges on the machine and click OK.

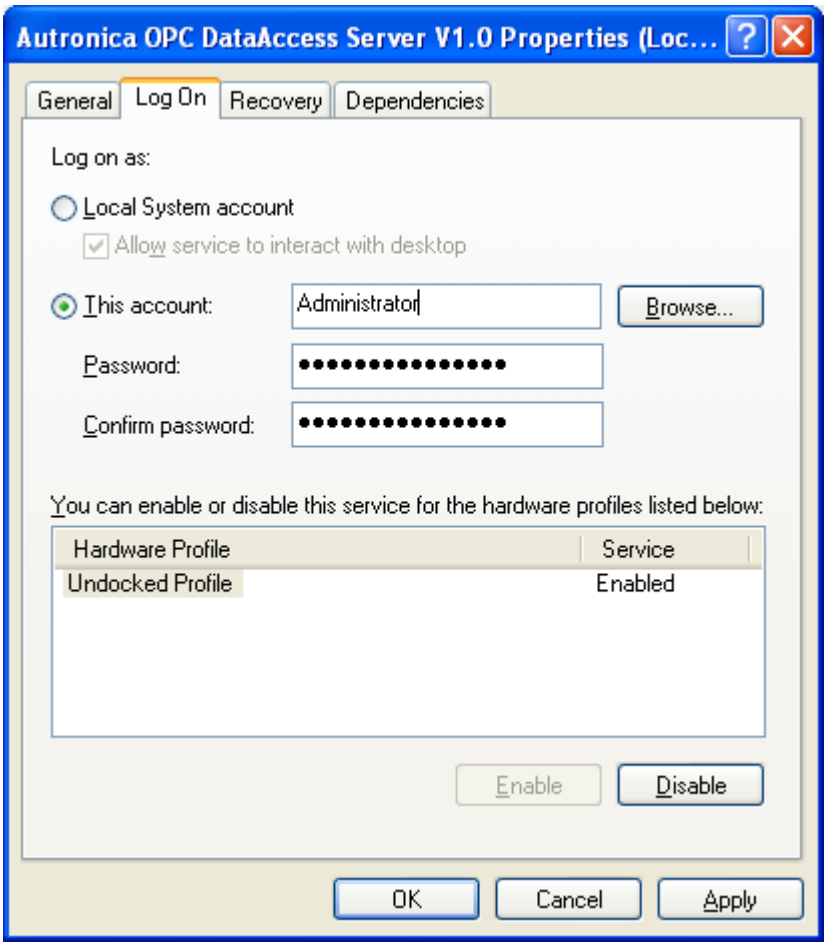


Figure 15 Administrator account

9. The AutroSafe OPC Server is now ready to use

5. Maintenance

5.1 Preventive maintenance

No preventive maintenance is needed for the AutroSafe OPC Server application.

5.2 Log messages

The startup and runtime information generated by the AutroSafe OPC Server is available in Windows Event Viewer and in application log files specifically created for the AutroSafe OPC Server.

5.2.1 Log messages during startup

Using the information in the Event Viewer is a good way to verify that the OPC Server has started without errors and that the communication is up and running. Below you can find a typical startup sequence with information from the Event Viewer.

1. **Startup AutroSafe OPC Server**

   The AutroSafe OPC Server is started in the Windows Services. This is the first message generated from the AutroSafe OPC Server and indicates that the OPC Server is ready to start configuring and connecting to the AutroSafe system

2. **Found and configured: 937 OPC Items and 66 AutroSafe objects.**

   The AutroSafe OPC Server has read the configuration file and configured found information. The number of found AutroSafe objects (Units) is displayed.

3. **Try to connect to AutroSafe socket on 10.40.46.185 and port 25500**

   The AutroSafe OPC Server is ready to connect to the AutroSafe system. The configured IP and port number are displayed.

4. **AutroSafe socket is connected**

   The AutroSafe OPC Server has succeeded to connect to the AutroSafe system.

5. **Tries to Login to AutroSafe system**

   The AutroSafe OPC Server tries to login the AutroSafe system. If the AutroSafe system is not ready/initialized it will refuse to login. The AutroSafe OPC Server will try to re-login until the AutroSafe system is ready.

6. **AutroSafe Login succeeded**

   The AutroSafe OPC Server has succeeded to login to the AutroSafe system. The OPC Server will now request all updated status from the AutroSafe system. The OPC Server will report a NoConfig status.

7. **The AutroSafe OPC Server is configured, synchronized and ready**.

   The AutroSafe system has delivered all status information and the AutroSafe OPC Server is synchronized and ready to show correct information. The OPC Server will report a Running status.

5.2.2 Runtime log messages

All errors that are generated by the AutroSafe system will be reported in the application log file and in the Windows Event viewer.

The most common fault messages and how to handle them are reported below.

- **The configuration file for the AutroSafe system does not correspond to the version reported from the system. File version: XXXX , AutroSafe version YYYY**

  This fault message can be reported during startup of the AutroSafe OPC Server if the date and time of the configuration file does not correspond to the date and time of the configuration running in the AutroSafe system.

  User repair: Verify the match of the configuration files and restart the OPC Server.

- **Found a Unit that is not supported. Name: XXXX**

  This message is displayed if the configuration file contains a unit type that is not supported by the AutroSafe OPC Server. The AutroSafe OPC Server will start and display all AutroSafe units that are supported.

  Hint: See the Operating Guide for more information about supported AutroSafe units.

- **AutroSafe socket refused to connect! Tries to reconnect**

  The AutroSafe OPC Server could not connect to the AutroSafe system socket. Check that the configured IP

address and Port number correspond to the AutroSafe system.

Hint: Ping the IP address and verify that it is possible to communicate with the AutroSafe system.

Hint: If a Firewall is installed on the computer check its configuration.

- **Could not find the object with Tagid: XXXXX**

  A message has been received from the AutroSafe system that contains a Unit id that is not found in the configuration file. The message will be ignored.

- **An existing connection was forcibly closed by the remote host**

  The connection towards the AutroSafe system has been closed.

  User repair: Check that all network cables are connected.

  Hint: Ping the IP address and verify that it is possible to communicate with the AutroSafe system.

  Hint: If a Firewall is installed on the computer, check its configuration.

5.3 Backup

The application specific data for the AutroSafe OPC Server application is normally easy to create and as follows also easy to re-create after a possible disk crash or any other cause of failure.

The files that can be of importance to backup are the configuration files used during OPC Server startup:

- the AutroSafe Configuration file (location unknown)
- the configuration file of the OPC Server (TSOpcNetServer.exe.conf). Location: The installation folder of the AutroSafe OPC Server.

6. Reader's Comments

Please help us to improve the quality of our documentation by returning your comments on this manual:

Title: *Installation and Configuration Guide, AutroSafe OPC Server, AutroSafe Interactive Fire Detection System*

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All products are easily adaptable to a wide variety of applications, among others, hospitals, airports, churches and schools, as well as to heavy industry and high-risk applications such as power plants, computer sites and offshore installations, world wide.

The company's strategy and philosophy is plainly manifested in the business idea:
Protecting life, environment and property.

Quality Assurance

Stringent control throughout Autronica Fire and Security ASsures the excellence of our products and services. Our products are CE marked and developed for worldwide standards and regulations, and conform to the CEN regulation EN54. Our quality system conforms to the Quality System Standard NS-EN ISO 9001:2000 and is valid for the following product and service ranges: marketing, sales, development, engineering, manufacture, installation, commissioning and servicing of suppression, integrated fire and gas detection and alarm systems, plus petrochemical, oil and gas instrumentation systems for monitoring and control.

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