Integration Objects'

Solution for retrieving and archiving OPC alarms and events

OPC Alarms & Events Archiver
Version 1.5 Rev.2

USER GUIDE

OPC Compatibility
OPC A&E 1.02
OPC A&E 1.10

OPC Alarms & Events Archiver User Guide Version 1.5 Rev.2
Published May 2018

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PREFACE

About this User Guide

This guide:

- Describes the OPC AE Archiver, its features and functionalities,
- Lists the system requirements for installing and running this OPC Client,
- Explains how to configure and use the OPC AE Archiver,
- And includes chapters for troubleshooting and frequently asked questions.

Target Audience

This document is intended for Integration Objects' OPC AE Archiver users. Basic knowledge of OPC AE (Alarms and Events) is assumed.

Document Conventions

Convention	Description
Bold	Click/selection action required.
	Information to be noted.

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INTRODUCTION

1. Overview

Today's process systems produce streams of OPC data. The data needs to be collected and converted into information for process analysis in databases. In many cases, the retrieval and accumulation of this information is a cumbersome and time-consuming process. The **Alarms and Events Archiver** optimizes the process of retrieving this valuable information. The user gets information about alarms and events relating to his processes without being required to deal within the OPC Server environment. This capability greatly increases the efficiency of analysis and reduces the time it takes to respond appropriately.

Moreover, the **Alarms and Events Archiver** enables alarms and events archiving in either an ADO or ODBC database of the user's choice. In many cases, this negates the need for additional costly real-time databases servers, thus reducing costs and the redundancy of operations.

2. Architecture

The following diagram illustrates a typical architecture for the **Alarms and Events Archiver**. The **Alarms and Events Archiver** communicates with the available OPC alarms and events servers, retrieves alarms and stores them in any ODBC or ADO-compliant database such as Oracle, and SQL Server.

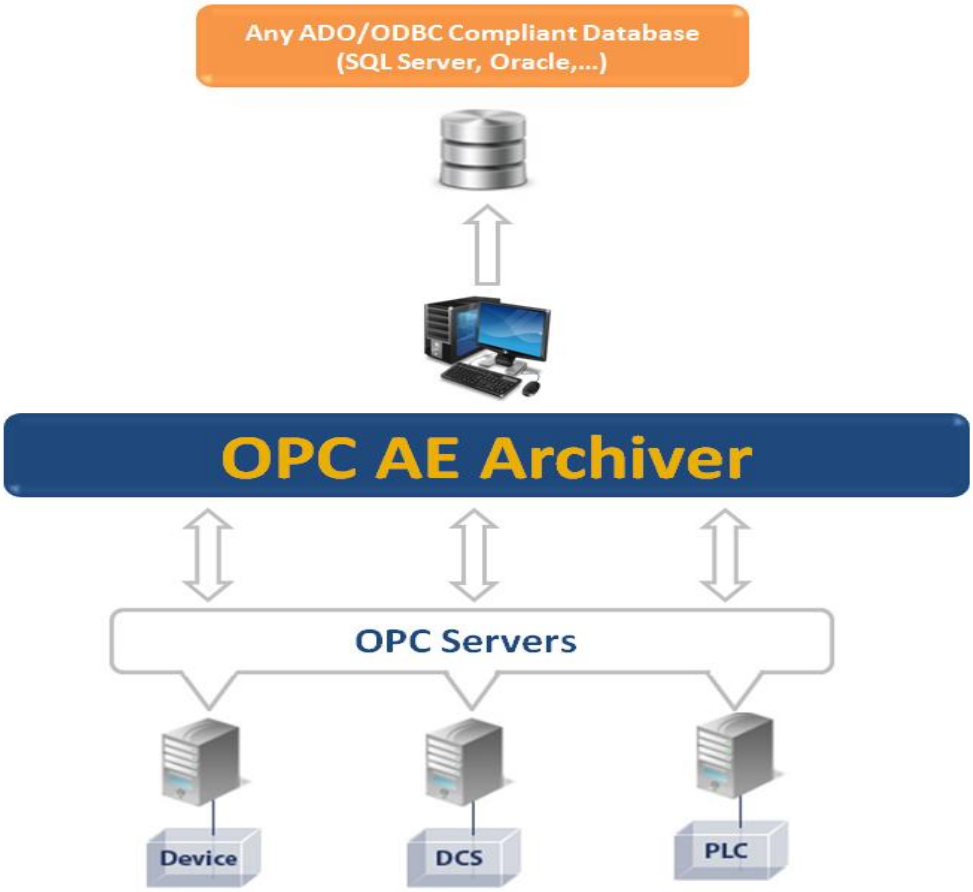


Figure 1: System Architecture

3. OPC AE Archiver Features

Integration Objects' Alarms and Events Archiver plays two main roles:

- It acts as an **explorer** by allowing the user to view all triggered OPC alarms and events across the network in a user-friendly format and combines reliable data from different OPC alarms and events servers into a convenient and practical environment. The user can also control the alarm characteristic updates stored in the OPC AE servers more efficiently and accurately.
- Additionally, it acts as an **ADO and ODBC OPC-database Archiver**, as it provides facilities to configure, access a historian database according to the ADO or ODBC connection mode, and store the alarm characteristics retrieved from the OPC AE servers inside this database.

4. OPC Compatibility

Integration Objects' OPC AE Archiver supports OPC Alarms and Events (AE) version 1.02 and 1.10.

5. System Requirements

Integration Objects' OPC Alarms and Events Archiver installation requires the following minimum runtime system specifications:

- Pentium 100MHz processor or higher recommended.
- 1 GB memory. Higher is recommended.
- 100 MB hard disk space for full installation.
- Operating Systems:
  - Microsoft Windows NT Workstation or Server 4.0 (Service Pack 3) or Windows 2000 professional or Server.
  - Microsoft Windows XP
  - Microsoft Windows Seven
  - Microsoft Windows Server 2003
  - Microsoft Windows Server 2008
  - Microsoft Windows 8
  - Microsoft Windows Server 2012
  - Microsoft Windows 10
  - Microsoft Windows Server 2016
- Databases:
  - Any compliant MS SQL Server 2005 or later
  - Oracle version 8i or later
  - Microsoft Access 2003 or later
  - MySQL version 5.0 or later
  - CSV files
  - Any database using OLEDB or ODBC connection providers

6. OPC Alarms & Events Archiver Functionalities

1. **Connection to all available OPC Alarms and Events servers (local and remote)**

   The user can connect to one or more alarms and events servers at the same time.

2. **Browsing of all data sources available in OPC Alarms and Events servers**

   The AE Archiver provides the ability to browse all alarms and events sources (the classification is done according to plant areas and sub-areas as shown below).

- ***Root***
  - ***Area1***
    - ***SubArea1***
      - ***Condition1***
        - ***SubCondition1***
        - ***…***
        - ***SubCondition5***
      - ***Condition2***
    - ***SubArea2***
    - ***…***
    - ***Source1***
      - ***Condition***
        - ***SubCondition***
    - ***Source2***
    - ***….***
  - ***Area2***
  - ***…***
  - ***Source1***
  - ***Source2***
  - ***…***

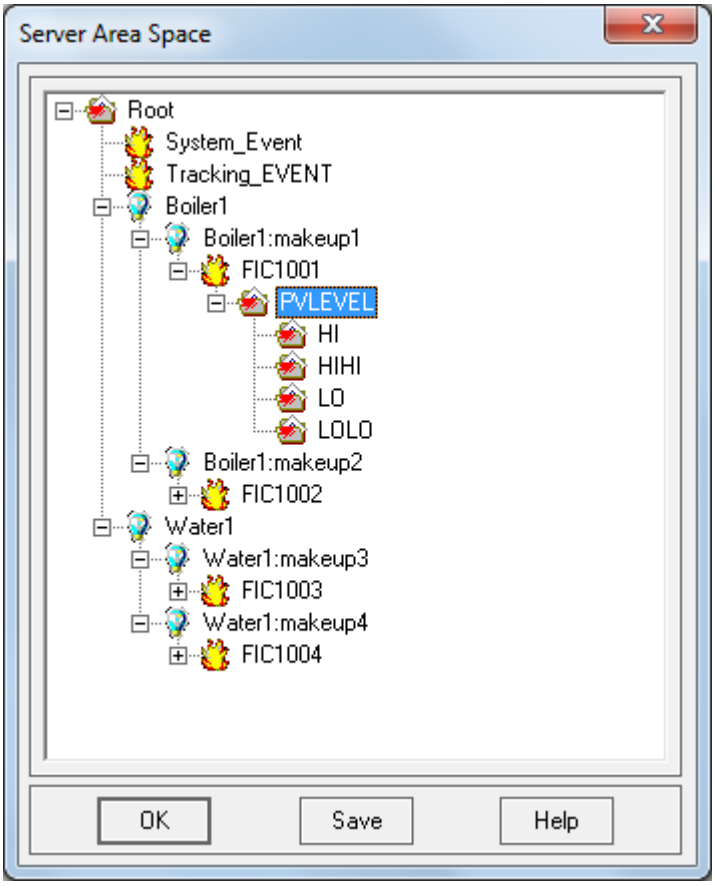


Figure 2: Browse Alarm and Event Sources

3. **Filtering of retrieved alarms and events according to several criteria**

With the AE Archiver, the user can set filters on any event subscription in order to limit the events that he will be notified of.

To setup a filter for an event subscription, the user can use the following criteria:

- **Filtering by Event Type**: only events satisfying the criterion “Event Type” will be returned.
- **Filtering by Event Categories**: only events satisfying the criterion “Event Categories” will be returned.
- **Filtering by Areas and Sources**: only events satisfying the criterion “Existing in these areas or having these sources” will be returned.
- **Filtering by Severity**: only events satisfying the criterion “Events that have a severity between the min and the max severity” will be returned.

The user can select multiple criteria; they will be logically related together using the AND operator. All events satisfying all these selected criteria will be returned.

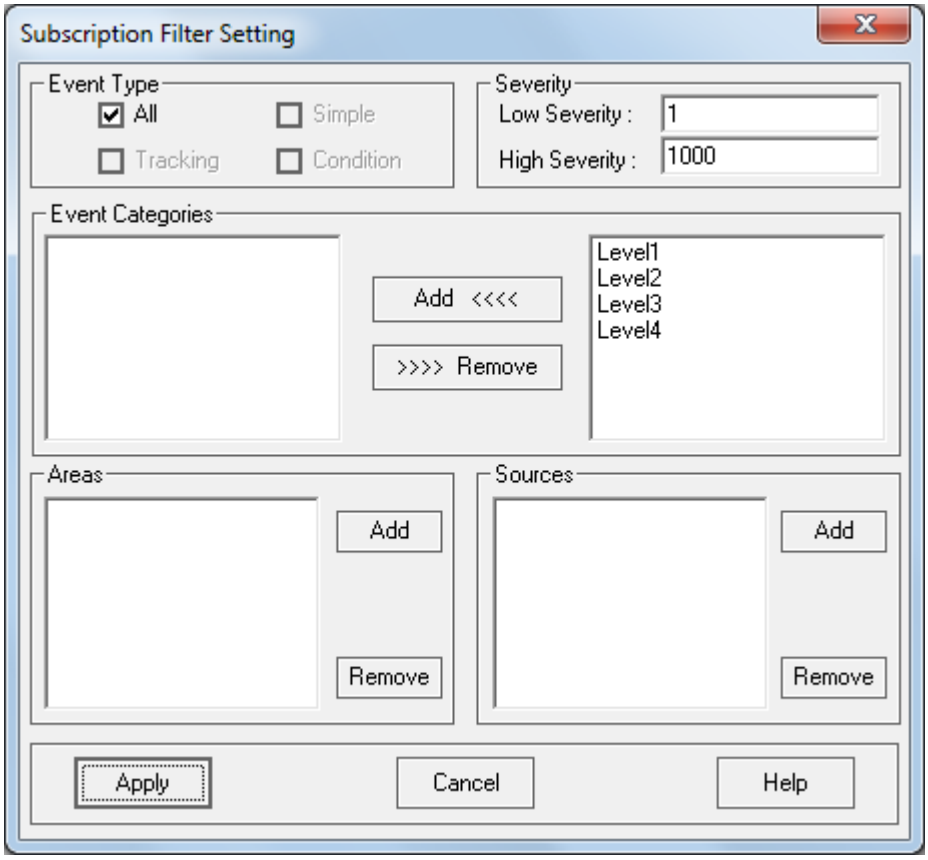


Figure 3: Set Filters

4. **Real-time capturing of alarms and events fired by the OPC AE servers**

   The alarms and events fired by OPC AE servers are displayed in a screen view in real-time so users can monitor the alarm characteristic changes over time.

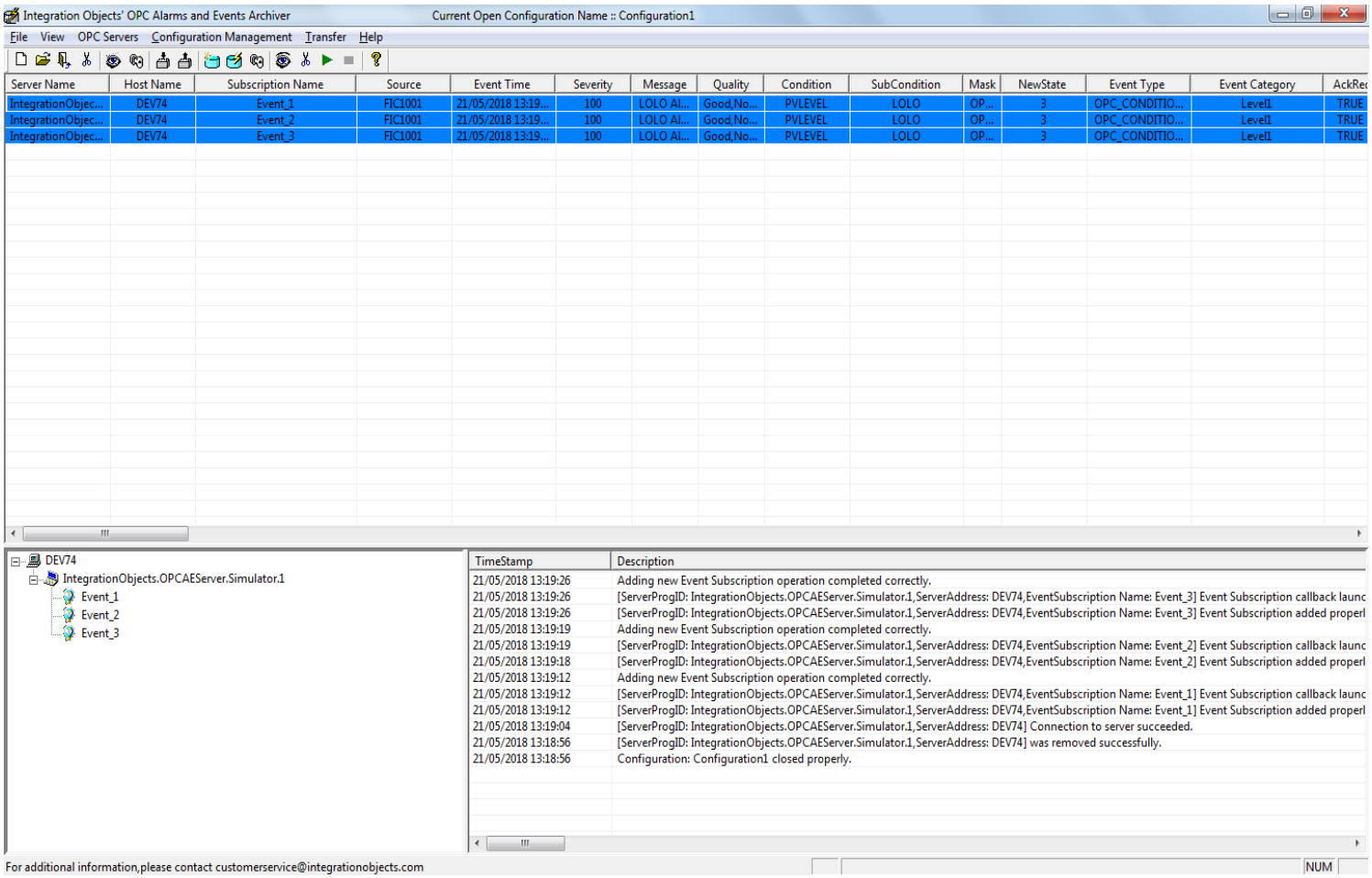


Figure 4: Capturing Alarms and Events

5. The graphical browsing of alarm characteristics from any OPC AE server

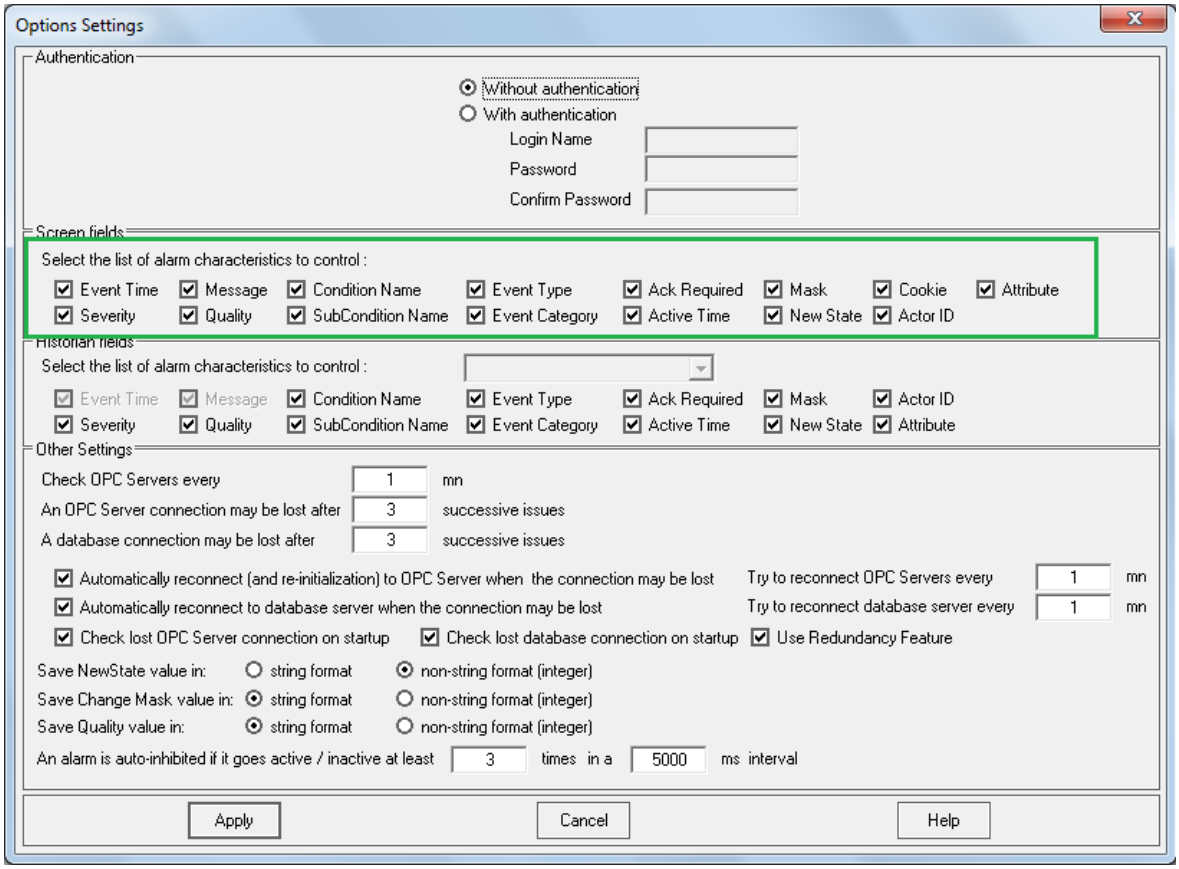


Figure 5: Browse Alarm Characteristics

A screen view shows all information relating to alarms and events:

- Source of the event
- Alarms and events' server name
- Alarms and events' server address
- Event subscription name
- Timestamp
- Message
- Category
- Severity
- Attributes
- Condition
- Sub-condition
- Change mask
- New State
- Quality
- Ack Required
- Active Time

- Cookie
- Actor ID

Users can hide one or more of these characteristics according to their needs.

6. **Data transfer from OPC AE servers to any compliant ODBC or ADO database**

The storage of alarms and events fired by an OPC AE server is the main functionality for the OPC AE Archiver. The Archiver provides facilities to transfer data from AE servers to any compliant ODBC or ADO database. Below, you can find some details related to the database transfer:

- Users can setup an ODBC or ADO connection to the historian database directly from the AE Archiver.
- The AE Archiver helps the user create and configure the database tables that will contain all information about alarms and events:
  - Source of the event
  - Alarms and events' server name
  - Alarms and events' server address
  - Event subscription name
  - Timestamp (with a separate field to store the event time milliseconds)
  - Message
  - Category
  - Severity
  - Attributes
  - Condition
  - Sub-condition
  - Change Mask
  - New State
  - Quality
  - Ack Required
  - Active time (with a separate field to store the active time milliseconds)
  - Cookie
  - Actor ID

Some of these information can be hidden on user request.

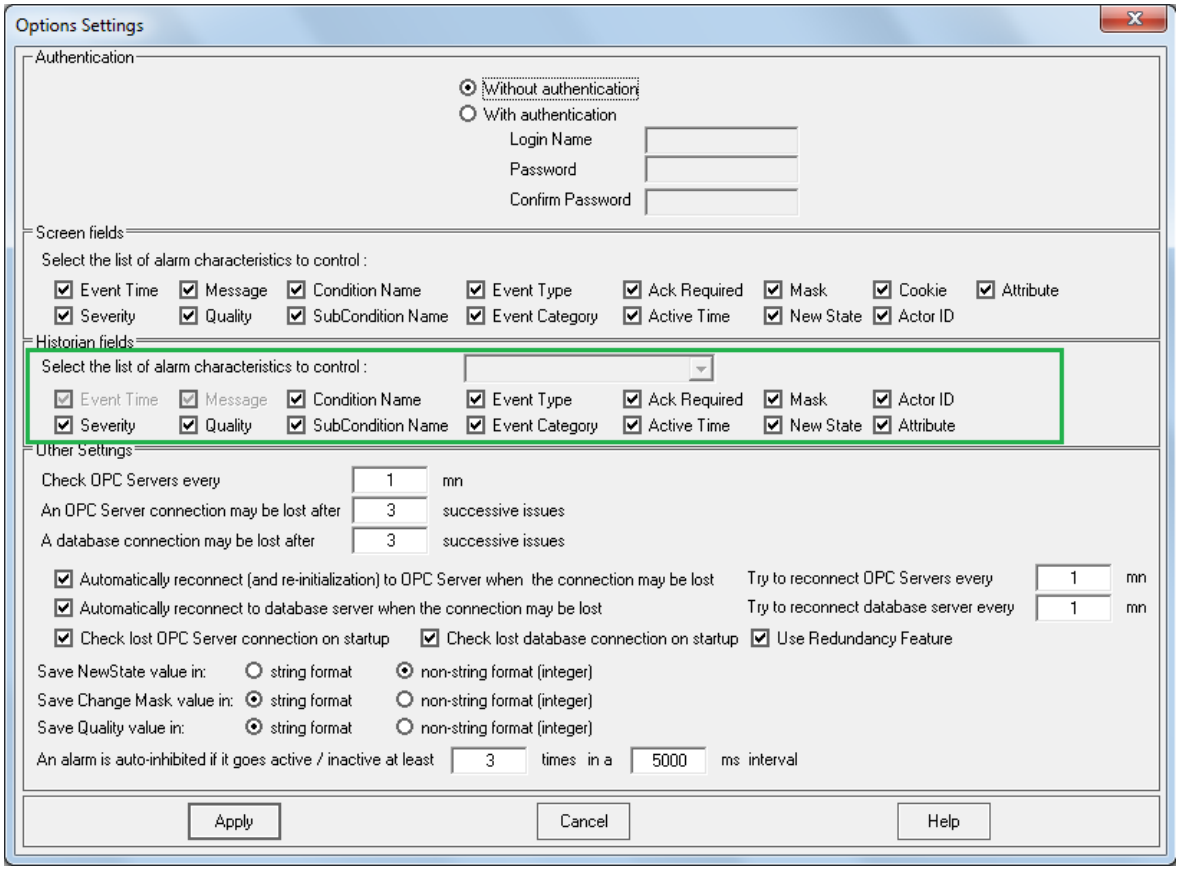


Figure 6: Database Fields

The AE Archiver assists the user when creating his database by offering a wizard. All introduced parameters are user-defined.

7. **Point click configuration**

   In the AE Archiver, the user can set more than one configuration. There is also a default configuration that is started automatically when launching the Archiver. This configuration will save all connected AE servers, added event subscriptions, related filters, and configured database.

8. **Log event display and file**

   The user can follow the operations handled by the Archiver by using:

   - Log view
   - Log file

   The Archiver logs all OPC calls even when successful and handles OPC system and network errors.

9. **Start as a Service**

   With the OPC AE Archiver, you have the ability to configure the OPC Archiver so it can be launched automatically as a service. (**For more information**

about how to install and configure the OPC AE Archiver to start as a service, you can see the OPC Alarms and Events Archiver Service Management user guide).

Other supported features:

- Continuous monitoring of the connection with the database server: when a connection to the database fails, the Archiver notifies the user and starts an SQL backup. All event notifications are stored in an SQL file for further processing.
- Continuous monitoring of the AE servers' connections: when an error occurs with the server connection, the Archiver automatically removes this server and cleans all related resources.
- Display and save static server information on demand (supported filters, available conditions, sub-conditions, categories, attributes).
- Enabling and disabling conditions by area or source.
- Activating and deactivating event subscriptions.
- Displaying and changing a subscription's state.
- Displaying condition event properties.
- Security functionality options: The user can setup credentials (password, login) to protect a specific user configuration.
- Run as NT Service (v.1.0.4)
- Automatic reconnection to the database server when the connection is lost. (v.1.0.5)
- Automatic reconnection (and re-initialization) to OPC Server when the connection is lost. (v.1.0.5)
- Support of OPC Server Redundancy (v.1.0.6)
    - Integration Objects' OPC Alarms and Events Archiver provides OPC Server redundancy using OPC servers through the network. This means that users can designate alternative machines as backup servers in case a designated Primary server goes offline.
    - OPC Alarms and Events Archiver scans the OPC server status and switches to the backup node in case a primary one fails.
    - The OPC Alarms and Events Archiver scans the primary OPC server status periodically and redirects the connection to it once it returns online.
- Import/Export functionalities (v.1.0.8)
- NewState flag codification (v.1.0.8)
- The possibility to store alarms in one or more tables (v.1.0.9)
- The management of the table Primary Keys (v.1.0.9)
- Storing vendor specific A&E attributes into separate fields (v.1.1.0)

GETTING STARTED

1. Installing and Running

This section explains how to install and run the OPC AE Archiver.

1.1. Installing

The installation program for the **Archiver** is downloadable from Integration Objects' website. Run the installation program following these steps:

1. Double-click on the **Integration Objects' OPC AE Archiver installation package**. Make sure to run the installation program using an administrator account.

The installation welcome dialog box will appear.

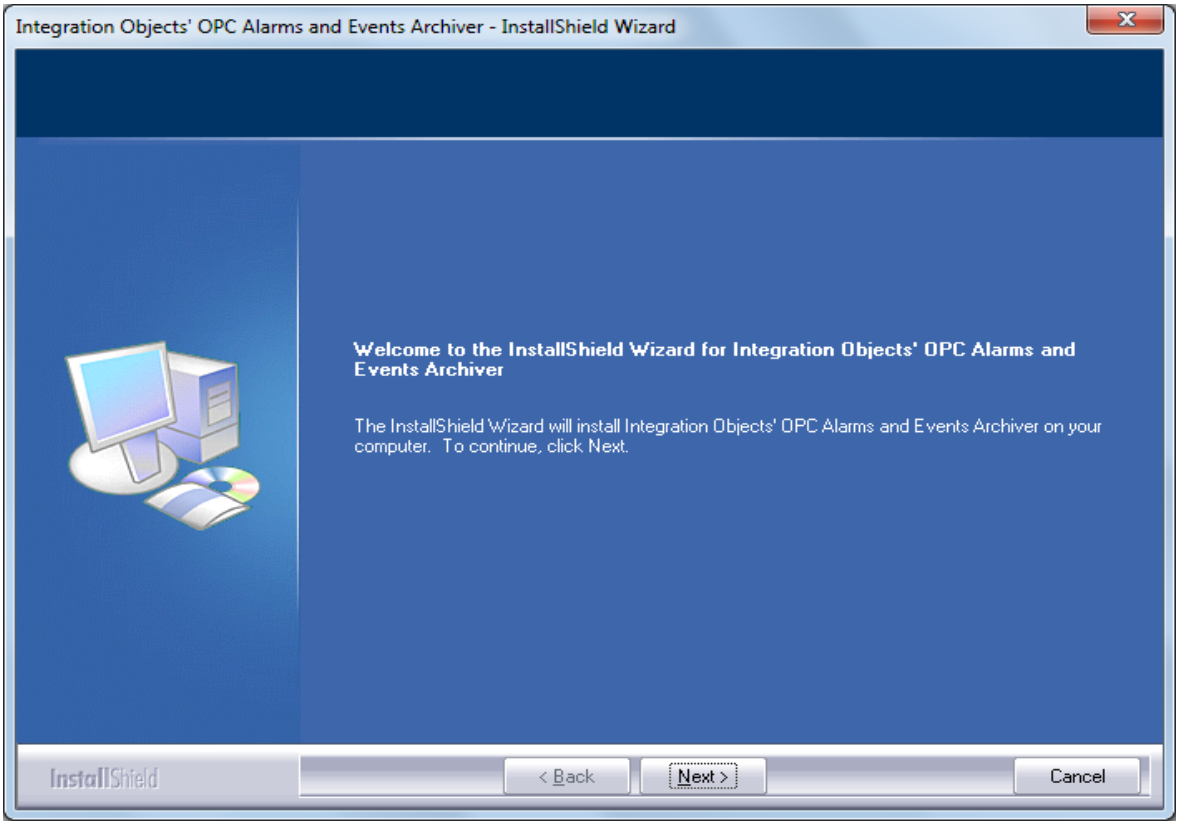


Figure 7: Installation Welcome Dialog

2. Click the **Next** button. The license agreement will be displayed

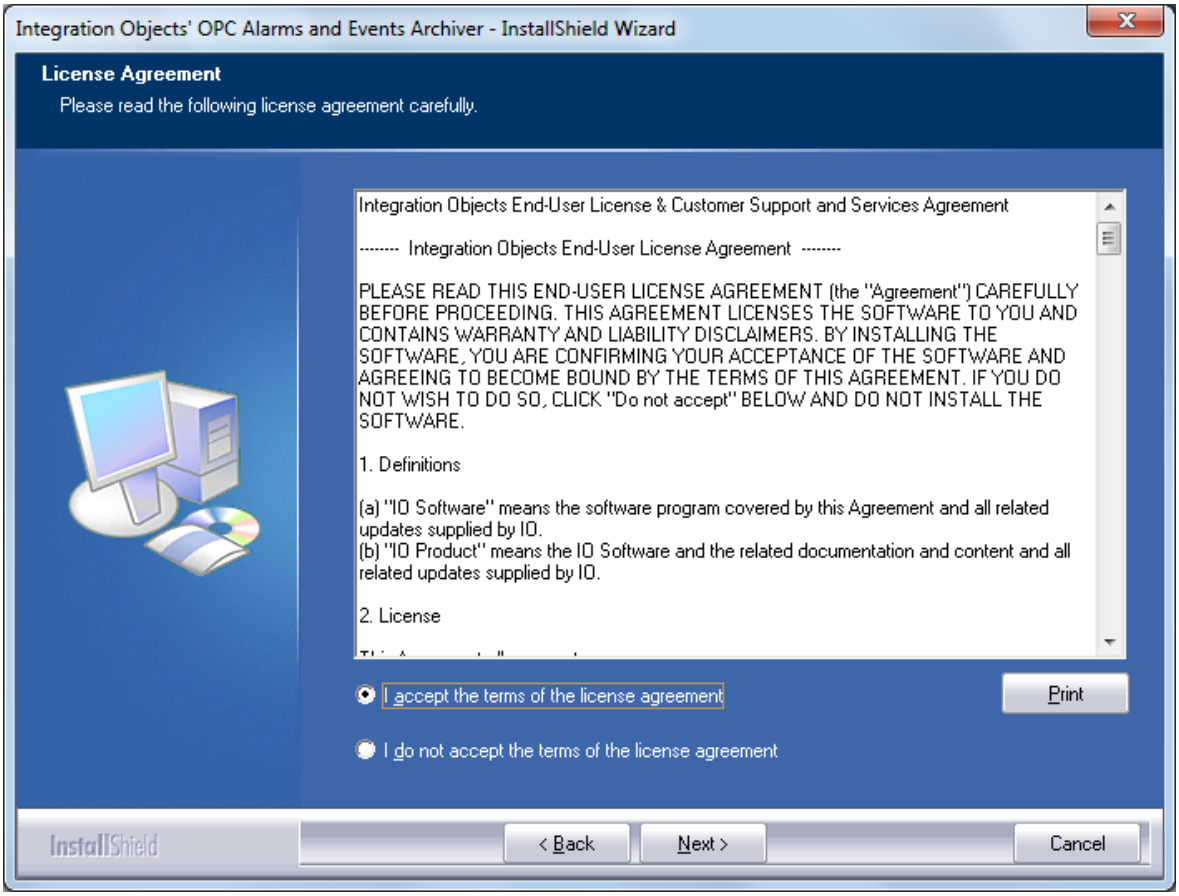


Figure 8: License Agreement Dialog

3. After reading the license agreement, select the first option and click on the **Next** button. By proceeding, you are accepting all of the license agreement terms. Otherwise, you can cancel the installation. The customer information dialog will then appear.

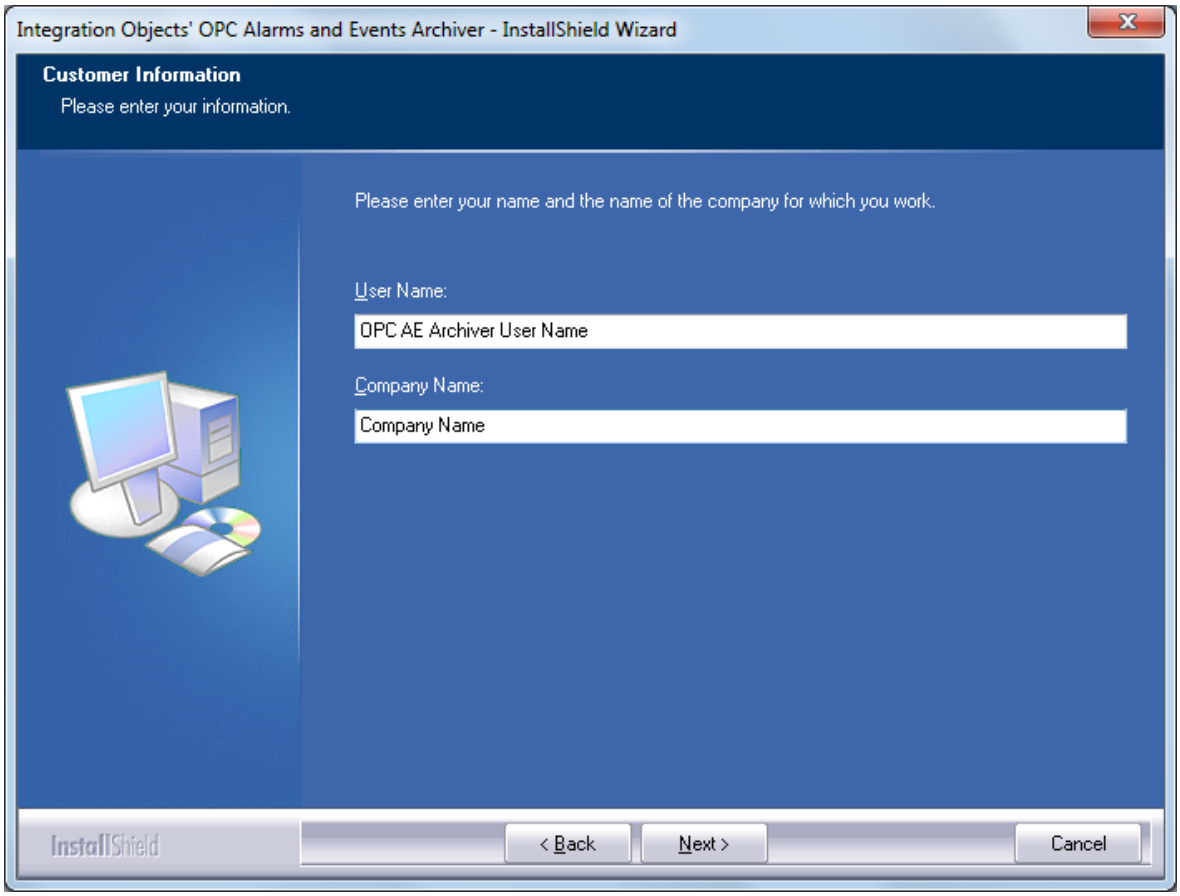


Figure 9: Customer Information Dialog

4. Enter the user name and the company name, and then click the **Next** button. The dialog where you can choose the destination folder will be displayed.

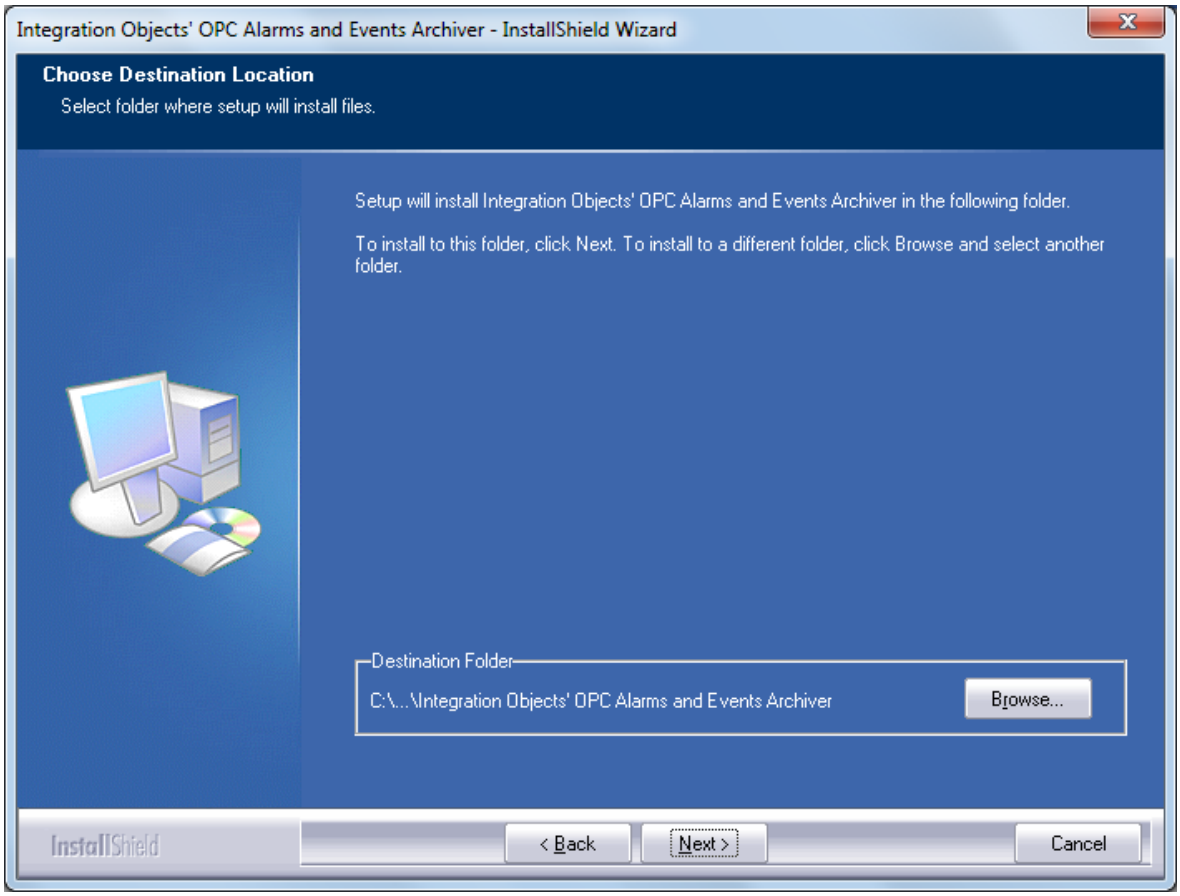


Figure 10: Choose Destination Folder Dialog

5. Click the **Next** button to continue the installation, or the **Browse** button to choose a different destination folder. The Installation dialog will be prompted.

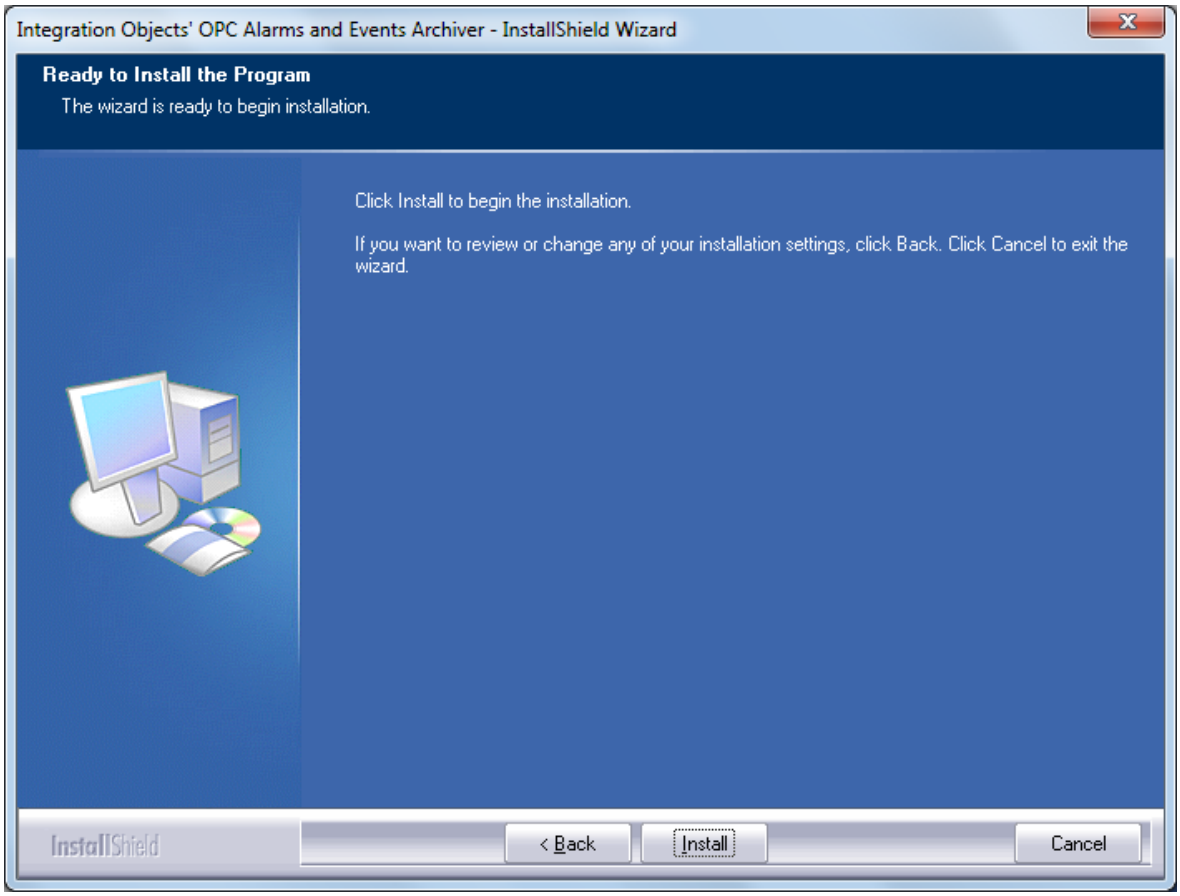


Figure 11: Installation Dialog

6. Click the Install button to start installation.

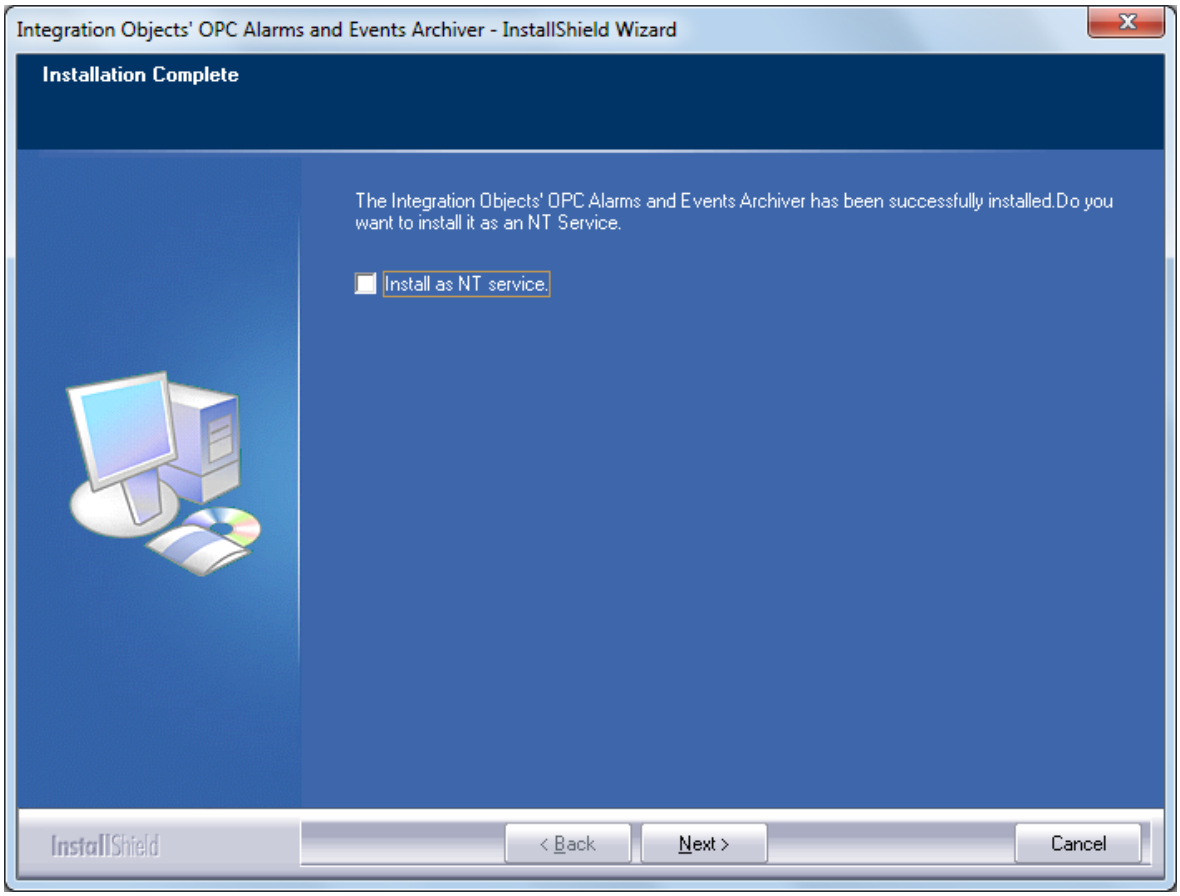


Figure 12: Install the OPC AE Archiver as Service Dialog

7. Check the **Install as NT service** checkbox to install the OPC AE archiver as a service, then click the **Next** button to continue the installation

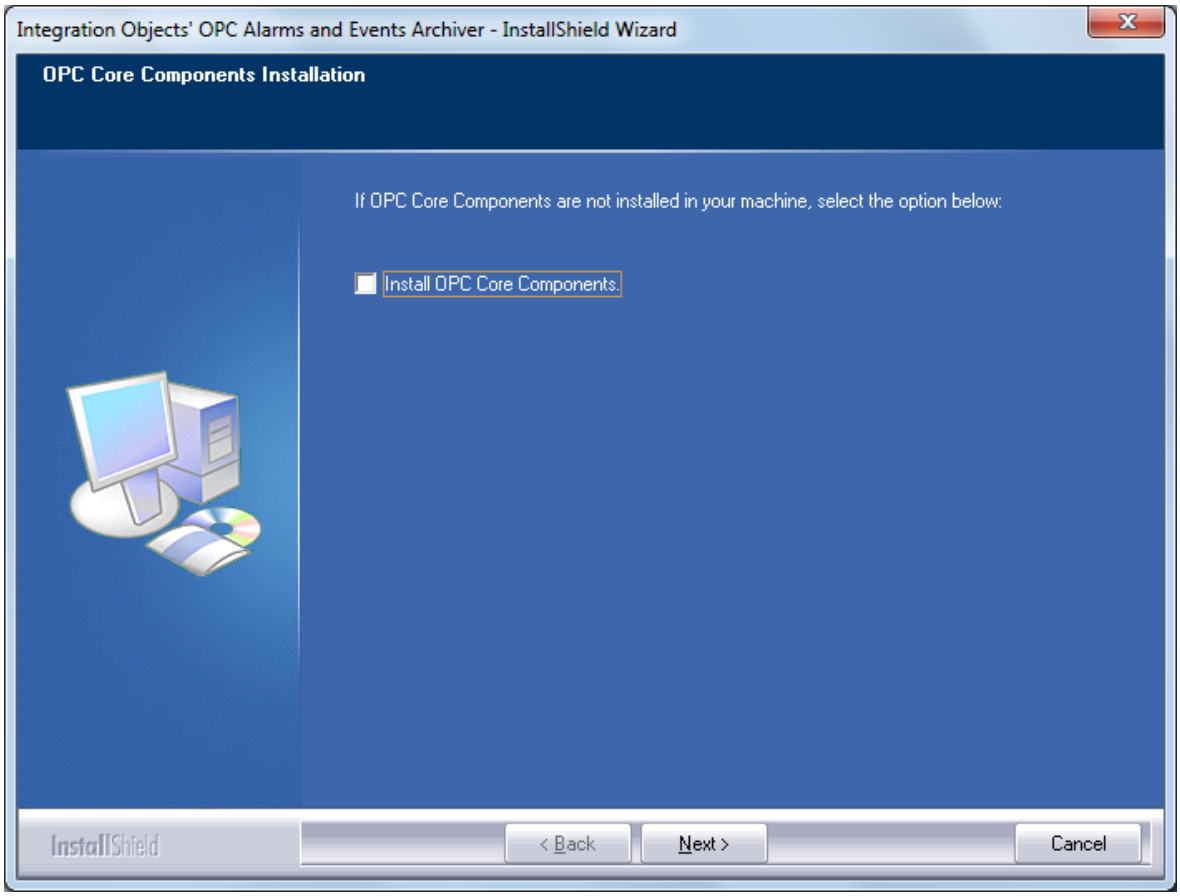


Figure 13: Install the OPC Core Components Dialog

8. Check the **Install OPC Core Components** checkbox to install the OPC Core components, then click the **Next** button to continue the installation.

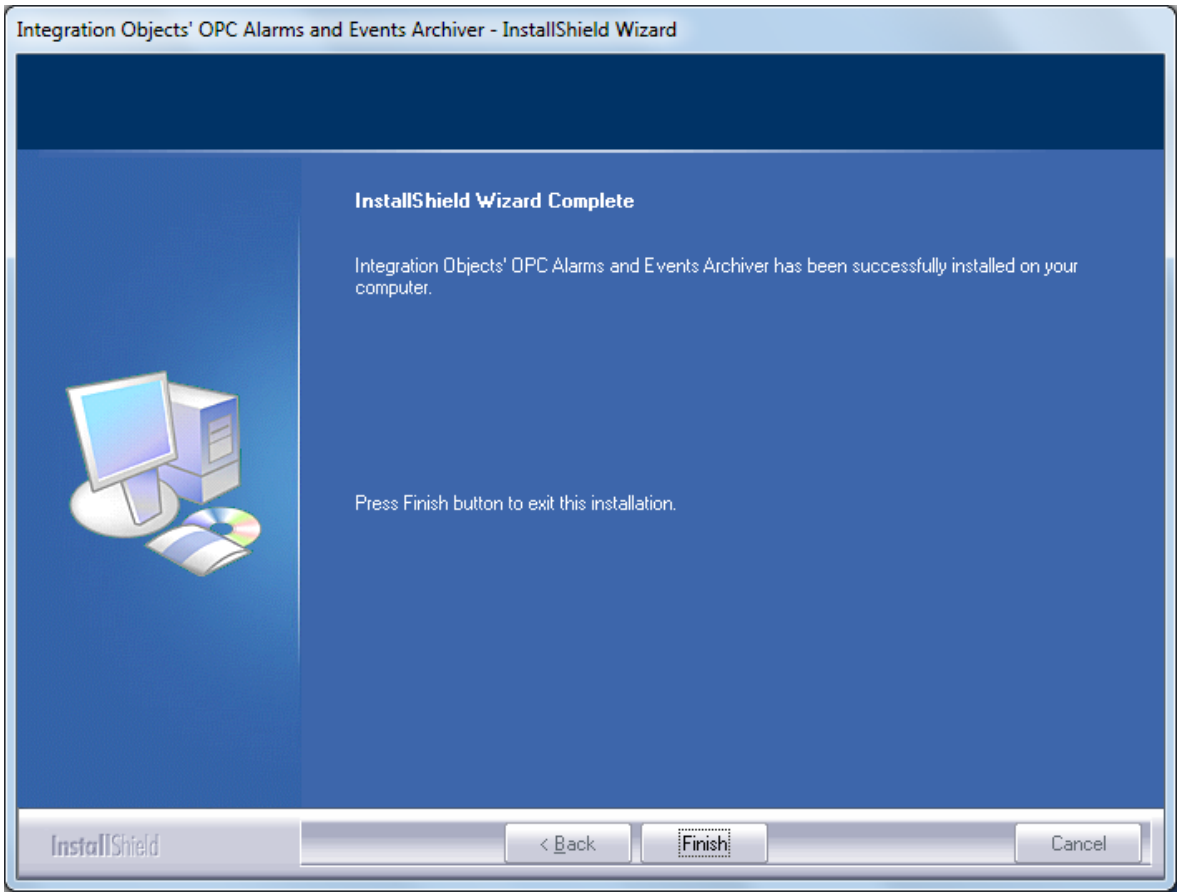


Figure 14: Installation Completed Dialog

9. Click the **finish** button.

The installation copies all necessary files to the target computer, creates a short-cut icon in the Start menu and makes an un-installation entry in the Add/Remove Programs Window in the Control Panel.

During installation, files are copied as follows:

- **AEArchiver.exe** (the executable file) in the **Alarms and Events Archiver** directory under the Program Files folder.
- **AEAService.exe:** the OPC Alarms and Event Archiver Service.
- **AEASMg.exe:** Utility to control the OPC Alarms and Event Archiver Service.
- **OPC AE Archiver User Guide.pdf** (User's Guide) by default in the **Alarms and Events Archiver** directory under the Program Files folder.
- **OPC AE Archiver Service Management User Guide.pdf:** OPC Alarms and Events Archiver Service Management user guide.
- **OPC AE Archiver Quick User Guide.pdf:** OPC Alarms and Events Archiver quick user guide.

1.2. Starting-Up

You can start manually the OPC AE Archiver from the start menu shortcut.
To do so, click on Start ➔ Programs ➔ Integration Objects ➔ OPC Archiver ➔OPC Alarms and Events Archiver

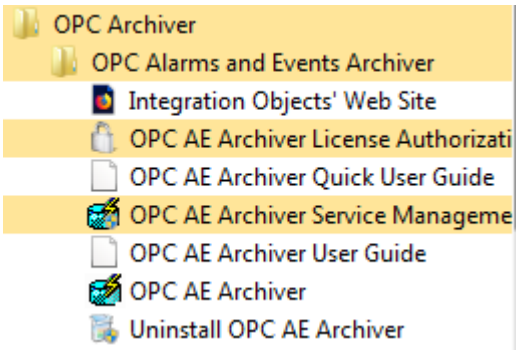


Figure 15: Starting the OPC AE Archiver

Main Window

When launching the **Alarms and Events Archiver**, there are two possible cases:

1. **First use of the Alarms and Events Archiver**
   In this case, there is no default configuration that is read at startup. The first time the user wants to use the Archiver, he has to create a new configuration and save it as a default one.

In this case, all other functionalities are disabled. The main window related to this case is shown in the figure below.

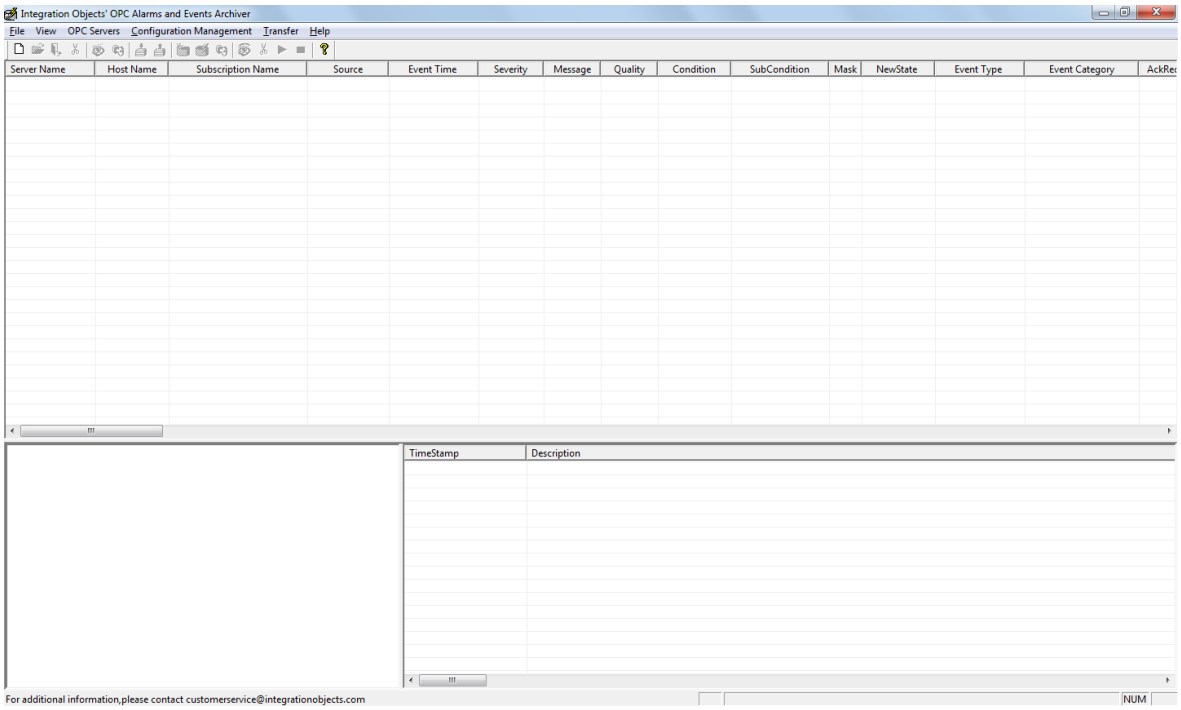


Figure 16: Functions Disabled

2. **One or more configurations already exist**

   In this case, the **Alarms and Events Archiver** automatically loads the default configuration.

   The main window related to this special case is shown in the figure below.

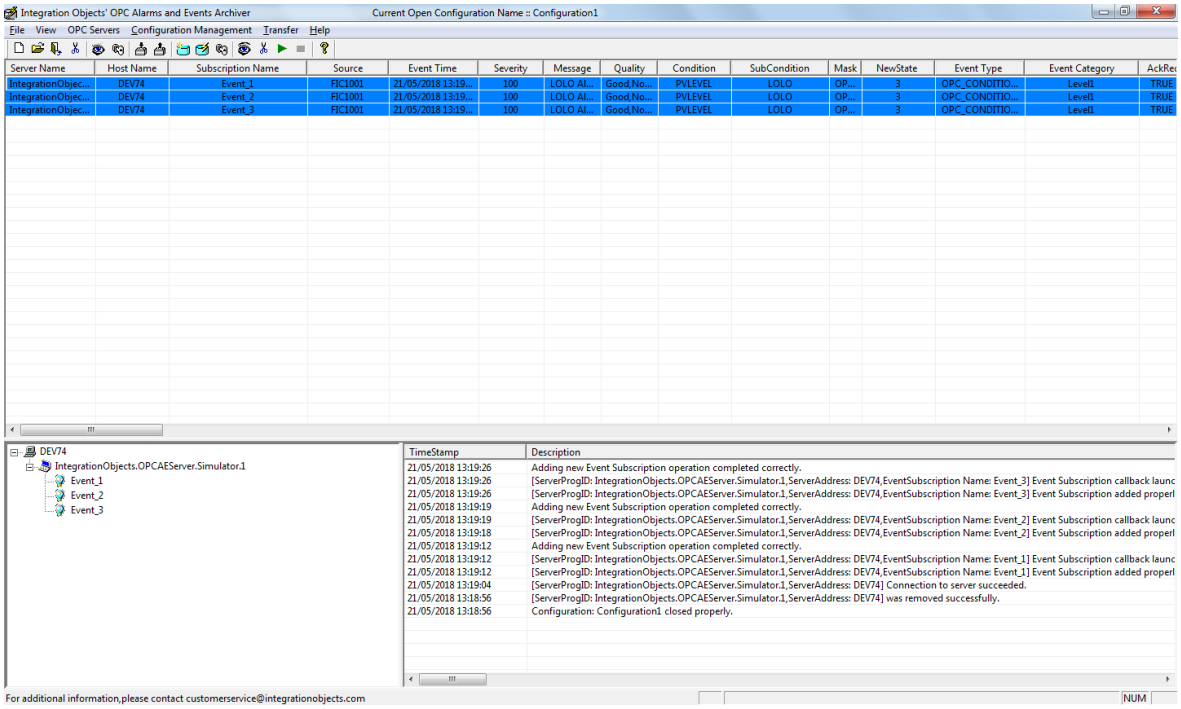


Figure 17: Default Configuration

The main window consists of a menu bar, a toolbar and three Sub-views:

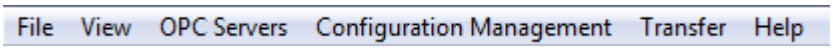


Figure 18: OPC AE Archiver Menu Bar

Figure 19: OPC AE Archiver Toolbar

Sub-Views Presentation

The top List View: It contains the information related to alarm characteristics reported by the different connected OPC alarms and events servers.

In this view, the user can view alarm characteristic updates (like event time, severity, condition name, event type, etc.).

Users can activate or deactivate the posting of these updates.

Server Name	Host Name	Subscription Name	Source	Event Time	Severity	Message	Quality	Condition	SubCondition	Mask	NewState	Event Type	Event Category	AckRe
IntegrationObjec...	DEV74	Event_1	FIC1002	21/05/2018 13:23...	500	Conditio...	Good,No...	DEVIATION	DEVIATION	OP...	5	OPC_CONDITIO...	Level2	TRUE
IntegrationObjec...	DEV74	Event_1	FIC1003	21/05/2018 13:24...	300	LOLO Al...	Good,No...	PVLEVEL	LOLO	OP...	3	OPC_CONDITIO...	Level1	FALSE
IntegrationObjec...	DEV74	Event_1	FIC1004	21/05/2018 13:24...	500	Conditio...	Good,No...	DEVIATION	DEVIATION	OP...	5	OPC_CONDITIO...	Level2	TRUE
IntegrationObjec...	DEV74	Event_1	System_Event	21/05/2018 13:24...	200	Simple E...	Good,No...				5	OPC_SIMPLE_EV...	Level3	TRUE
IntegrationObjec...	DEV74	Event_1	Tracking_EVENT	21/05/2018 13:24...	500	Setpoint ...	Good,No...				5	OPC_TRACKING...	Level4	TRUE
IntegrationObjec...	DEV74	Event_1	FIC1001	21/05/2018 13:24...	900	Conditio...	Good,No...	PVLEVEL	HI	OP...	5	OPC_CONDITIO...	Level1	FALSE

Figure 20: Alarm Characteristic Updates

The Tree View: It contains the information related to the list of OPC alarms and events servers configured by the user.

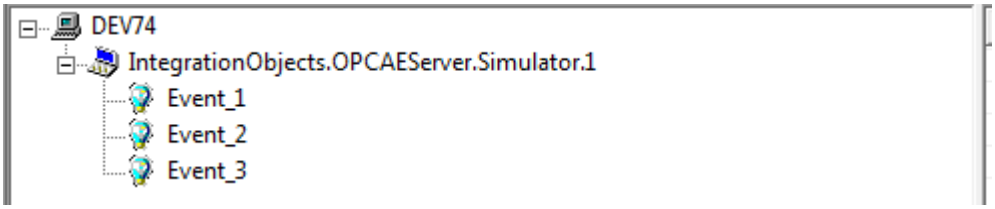


Figure 21: Tree View

The List View: The user can monitor the actions processed by the Archiver by using this log view.

TimeStamp	Description
21/05/2018 13:25:41	Adding new Event Subscription operation completed correctly.
21/05/2018 13:25:41	[ServerProgID: IntegrationObjects.OPCAEServer.Simulator.1,ServerAddress: DEV74,EventSubscription Name: Event_3] Event Subscription callback launc
21/05/2018 13:25:41	[ServerProgID: IntegrationObjects.OPCAEServer.Simulator.1,ServerAddress: DEV74,EventSubscription Name: Event_3] Event Subscription added properl
21/05/2018 13:25:33	EventSubscription name already used.
21/05/2018 13:25:22	Adding new Event Subscription operation completed correctly.
21/05/2018 13:25:22	[ServerProgID: IntegrationObjects.OPCAEServer.Simulator.1,ServerAddress: DEV74,EventSubscription Name: Event_2] Event Subscription callback launc
21/05/2018 13:25:22	[ServerProgID: IntegrationObjects.OPCAEServer.Simulator.1,ServerAddress: DEV74,EventSubscription Name: Event_2] Event Subscription added properl
21/05/2018 13:23:53	[ServerProgID: IntegrationObjects.OPCAEServer.Simulator.1,ServerAddress: DEV74] the server is running normally <OPC_STATUS_RUNNING>.
21/05/2018 13:22:53	CSV Historian created successfully.
21/05/2018 13:22:53	[ServerProgID: IntegrationObjects.OPCAEServer.Simulator.1,ServerAddress: DEV74,EventSubscription Name: Event_1] Event Subscription callback launc
21/05/2018 13:22:53	[ServerProgID: IntegrationObjects.OPCAEServer.Simulator.1,ServerAddress: DEV74,EventSubscription Name: Event_1] Event Subscription added properl
21/05/2018 13:22:53	[ServerProgID: IntegrationObjects.OPCAEServer.Simulator.1,ServerAddress: DEV74] Query available filters operation started correctly
21/05/2018 13:22:53	[ServerProgID: IntegrationObjects.OPCAEServer.Simulator.1,ServerAddress: DEV74] Connection to server succeeded.
21/05/2018 13:22:53	Configuration: Configuration1 closed properly.
21/05/2018 13:22:52	ODBC historian connection closed properly.

Figure 22: Log View

2. Removing OPC Archiver

To remove the Alarms and Events Archiver:

1. If you have set one or more configurations, start the **Alarms and Events Archiver** and delete all these settings. When you finish, close the **Alarms and Events Archiver**.
2. Click **Start**.
3. Click Settings.
4. Click Control Panel.
5. Click Add/Remove Programs.

6. In **Add/Remove** Programs dialog screen select the **Alarms and Events Archiver.**
7. Click Change/Remove then OK.
8. The software will be removed.

You can remove the OPC AE Archiver from your machine by selecting the "**Uninstall OPC AE Archiver**" shortcut from the start menu.

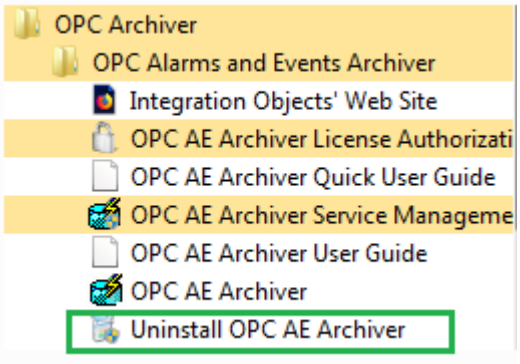


Figure 23: Start Menu – Uninstaller Shortcut

If you are using Windows 10, Windows Server 2012 or Windows Server 2016 operating systems, the uninstaller needs to be run from the start menu as illustrated below.

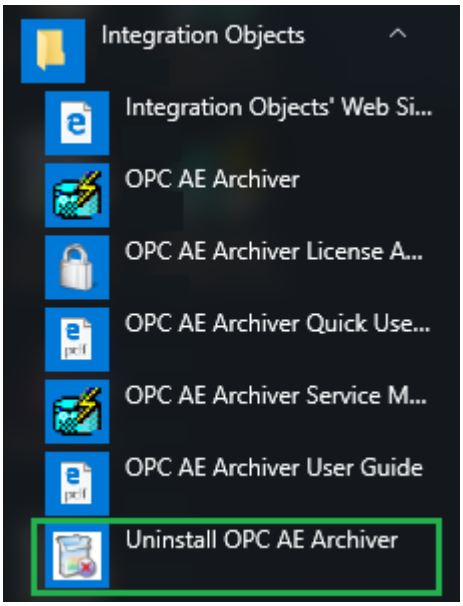


Figure 24: Windows 10 Startup Menu - Uninstall Shortcut

CONFIGURATION

1. Configuration Management

1.1. Creating a New Configuration

To create a new configuration, the user can select:

- File then New Configuration in the menu bar.
- Or click the New Configuration icon in the toolbar.

A similar dialog screen appears:

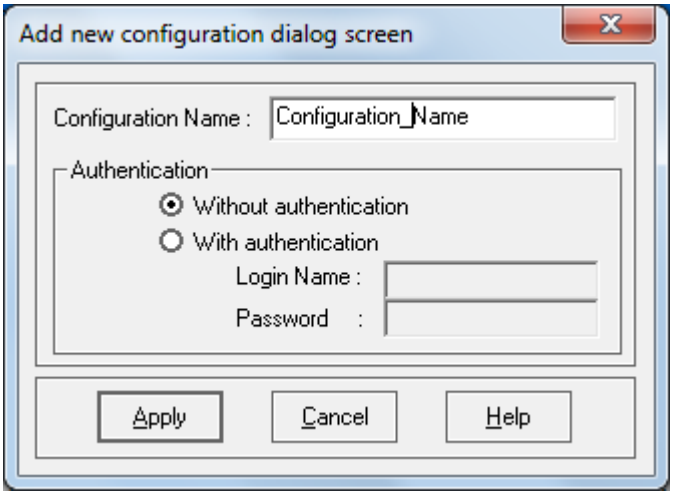


Figure 25: New Configuration

To create a new configuration, the user should:

1. Enter in the **Configuration Name** text box, a valid unique name for the configuration.
2. Select “with” or “without” authentication.
3. If the user chooses the “authentication” option, he must enter a Login Name (in **Login Name** text box) and a password (in **Password** text box).
4. Press the **Apply** button.

A new configuration is then created.

1.2. Opening an Existing Configuration

To open an existing configuration, the user can select:

- File then Open Configuration in the Menu bar.
- Or click the Open Configuration icon in the Toolbar.

A similar dialog screen appears:

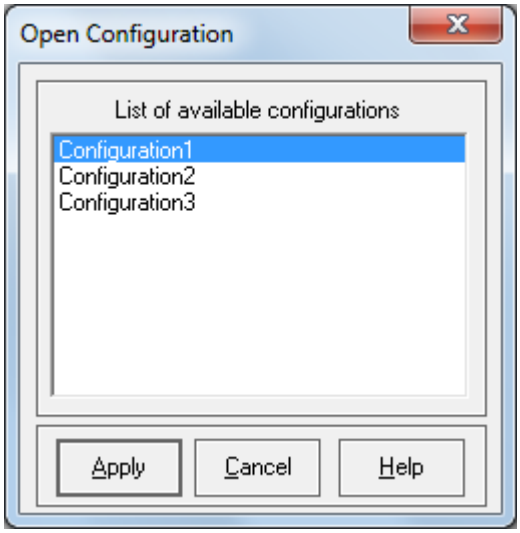


Figure 26: Open Existing Configuration

To open an existing configuration, the user should:

1. Select the wanted **configuration name**.
2. Click the **Apply** button.

The selected configuration is then loaded.

To gain additional information about the selected configuration, the user should click on it twice. A configuration dialog screen will appear:

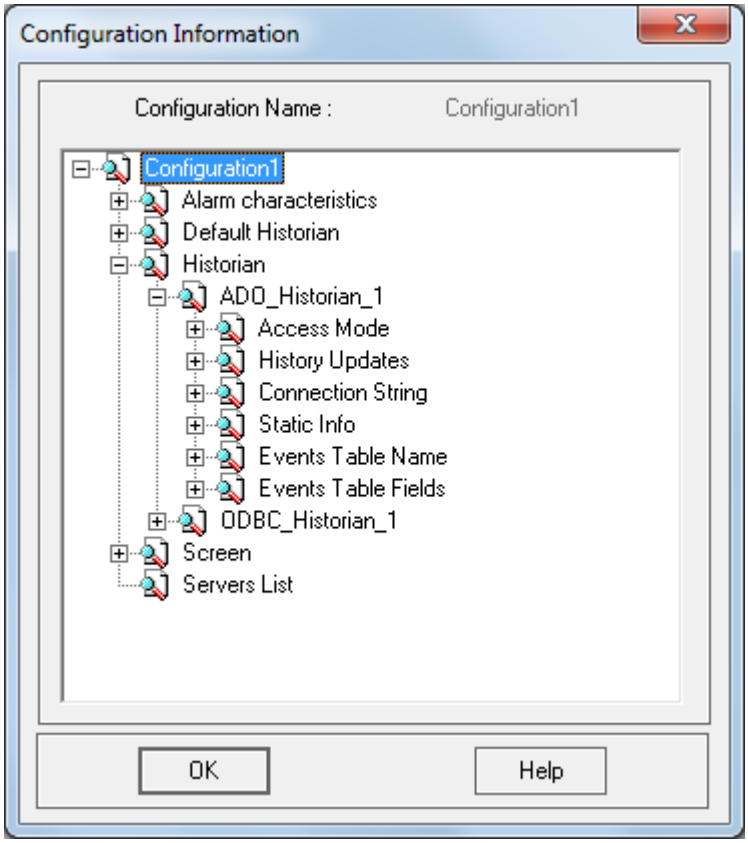


Figure 27: Configuration Information

1.3. Closing an Open Configuration

To close the currently open configuration, the user should select:

- File then Close Configuration in the Menu bar
- Or click the Close Configuration icon in the Toolbar.

1.4. Setting the Default Configuration

To set the default configuration, the user should select:

- File then Set Default Configuration in the Menu bar.
- Or click the Set Default Configuration icon in the Toolbar.

A similar dialog screen appears:

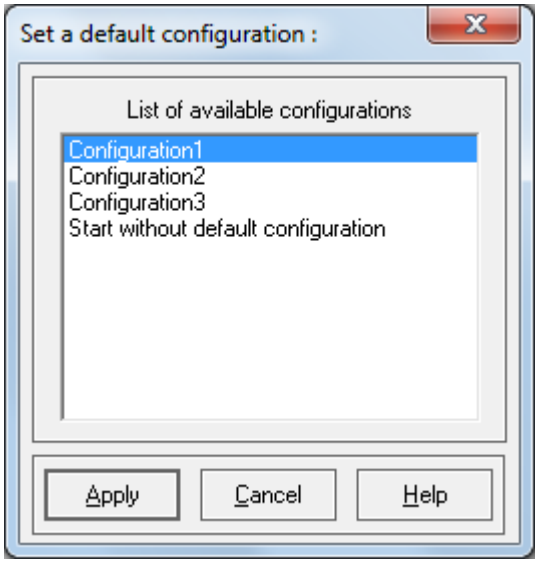


Figure 28: Set Default Configuration

To select the default configuration:

1. Select the suitable **Configuration Name**.
2. Click the **Apply** button.

The selected configuration will be considered as the default one.

For detailed information concerning the configuration, click twice on the desired configuration.

When the user chooses "Start without default configuration", the AE Archiver will start without an empty configuration.

1.5. Deleting a Configuration

To delete an existing configuration, the user should select:

- File then Delete Configuration in the Menu bar.
- Or click Delete Configuration in the Toolbar.

A similar dialog screen appears:

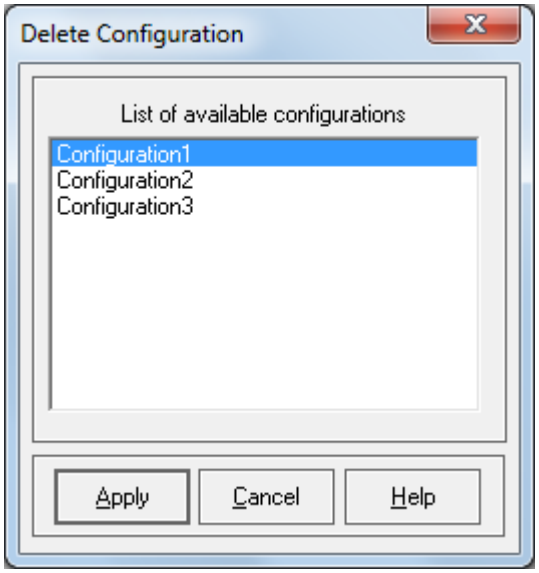


Figure 29: Delete Configuration

To delete an existing configuration, the user should:

1. Select the **configuration** to delete.
2. Click the **Apply** button.

The selected configuration is then deleted.

To access additional information about the selected configuration, click twice on the configuration name.

1.6. Configuration Screen Settings

Alarms and Events Archiver can be used like an **explorer**. To enable this option, the user should select:

Configuration Management -> Screen Configuration -> Screen Display

When **Screen Display** is checked, the **Alarms and Events Archiver** will work as an explorer and alarms information are displayed in the screen.

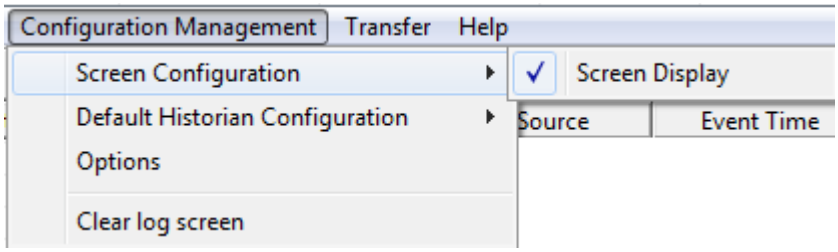


Figure 30: Working as an Explorer

The user can disable the exploration capability by selecting:

Configuration Management -> Screen Configuration

Then, unchecking **Screen Display**.

Consequently, events and alarms notifications are canceled.

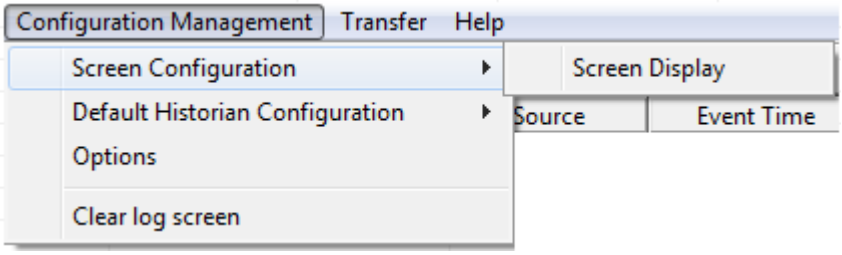


Figure 31: Cancel Explorer Mode

1.7. Option Setting

To change options related to the current configuration:

Configuration Management -> Options

A similar dialog screen appears:

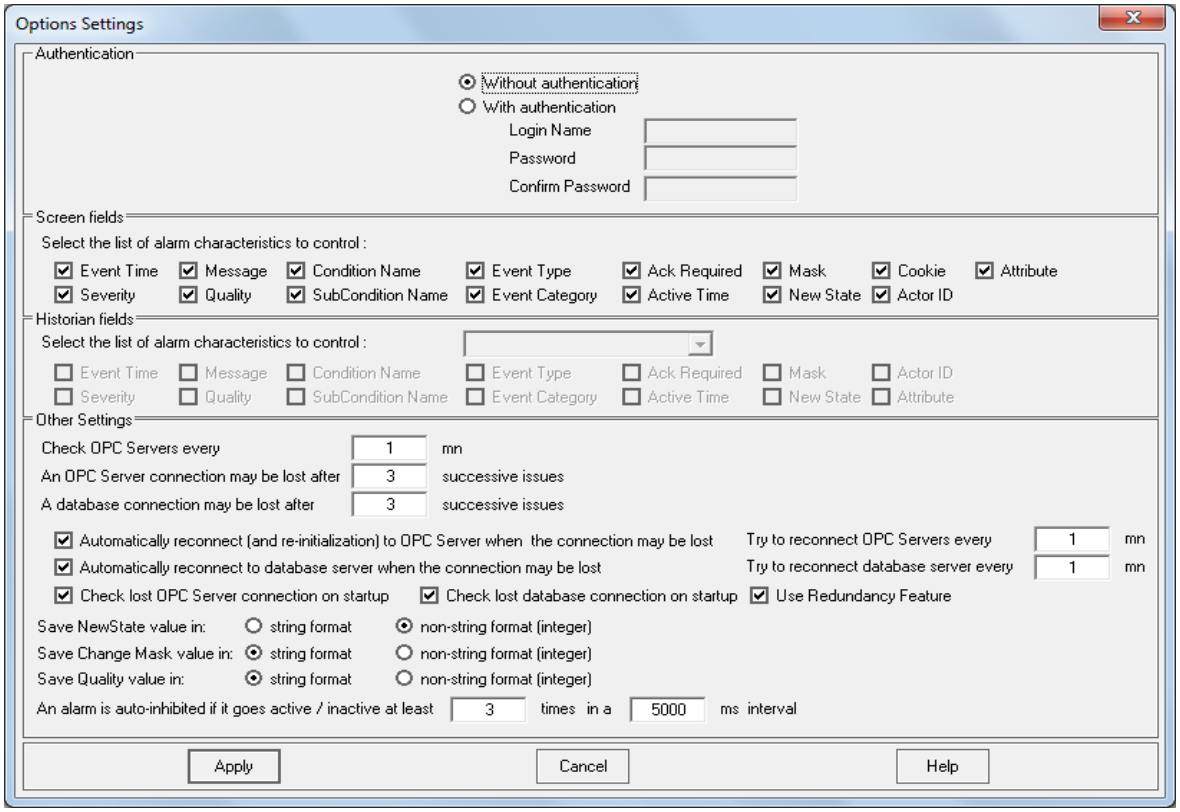


Figure 32: Option Settings

This dialog screen allows users to:

- Change the authentication option.
- Change the filter characteristics of the OPC alarms and events to retrieve and display on the screen.
- Change the filter characteristics of the OPC alarms and events to store in the historian database.
- Other settings: Checking OPC Servers, OPC Server reconnection, redundancy, flag saving mode (NewState, Quality, Mask), Auto-Inhabited state configuration.

Once selecting the appropriate characteristics, the user has to press:

- **Apply** to validate his choices.
- **Cancel** to close this dialog screen without any changes.

1.8. NewState Codification

OPC Standard: New State Values

New State	Value	Description
OPC_CONDITION_ENABLED	1	The condition has been enabled.
OPC_CONDITION_ACTIVE	2	The condition has become active.
OPC_CONDITION_ACKED	4	The condition has been acknowledged.

Table 1: Possible New State Values

- **ACK**: for acknowledged
- **UNACK**: for not acknowledged
- **ACT**: for active
- **INACT**: for inactive
- **ENA**: for enable
- **DIS**: for disable

In order to use the same codes that you mentioned, we suggest these codes:

- **0**: for all disabled states.
- **1**: for enabled state when the alarm is not acknowledged and inactive
  - ENA -UNACK-INACT
- **3**: for enabled state when the alarm is not acknowledged and inactive
  - ENA- UNACK -ACT
- **5**: for enabled state when the alarm is acknowledged and inactive
  - ENA- ACK –INACT
- **7**: for enabled state when the alarm is acknowledged and active

- ENA- ACK -ACT

- **8**: when the alarm goes active / inactive many times in a short interval, this state is not defined in the AE Specification. It should be implemented
  - AUTO-INHIBITED

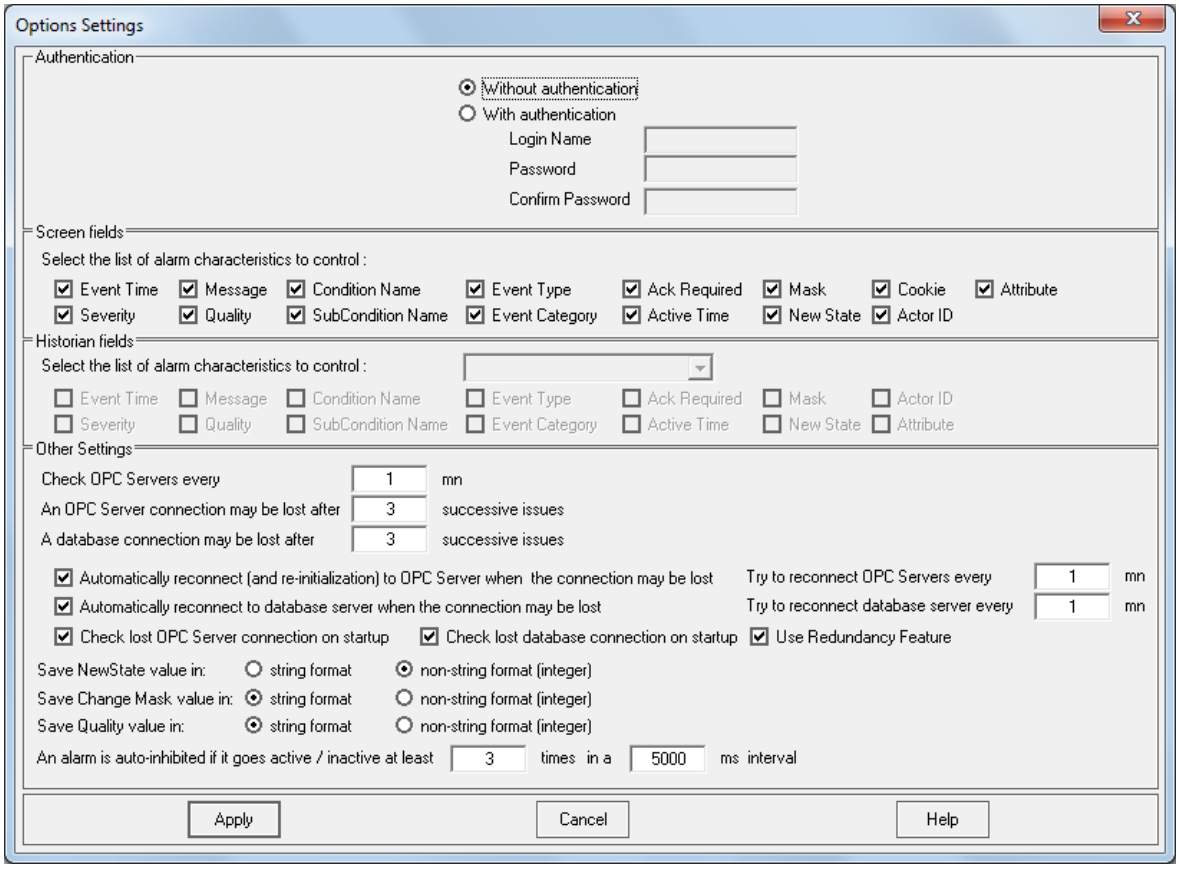


Figure 33: New State Values

- The user should have the possibility to configure the AE Archiver to store the NewState value as a string or non-string format (integer).

Figure 34: NewState Format

- The user should have the possibility to configure the interval and the number of times to check if the alarm state is AUTO-INHIBITED.

Figure 35: NewState Configuration

1.9. Viewing Configuration Information

To view the information relating to the current configuration, select:

- File then Open Configuration Info in the Menu bar.
- Or click the **Open Configuration Info** icon in the Toolbar.

A similar dialog screen appears:

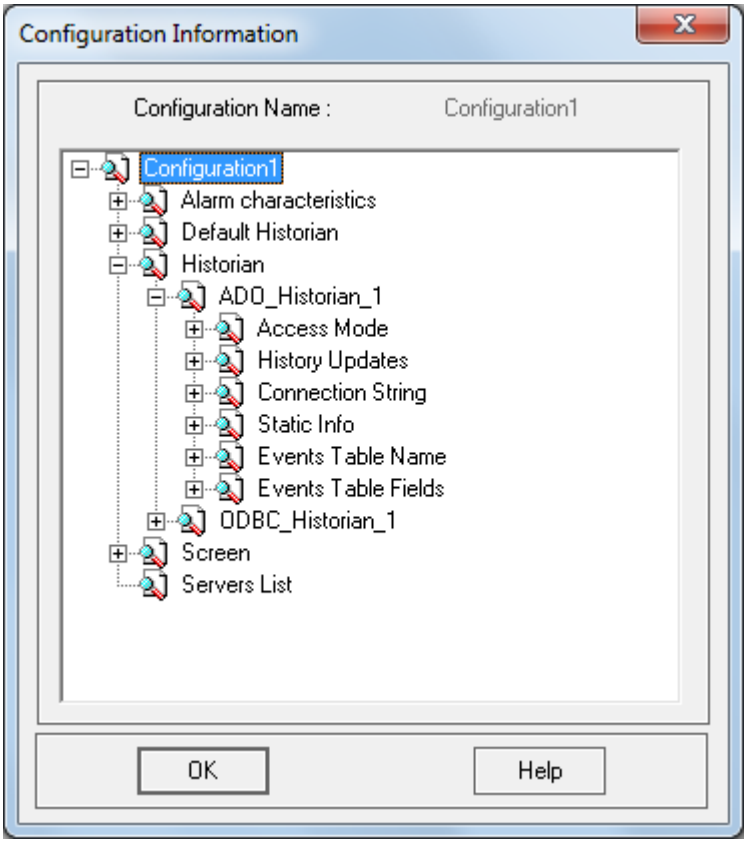


Figure 36: View Configuration Information

1.10. Import Configuration

To ***import*** an AE Archiver configuration:

1. On the AE Archiver menu, click **Import Configuration**, a dialog screen will appear:

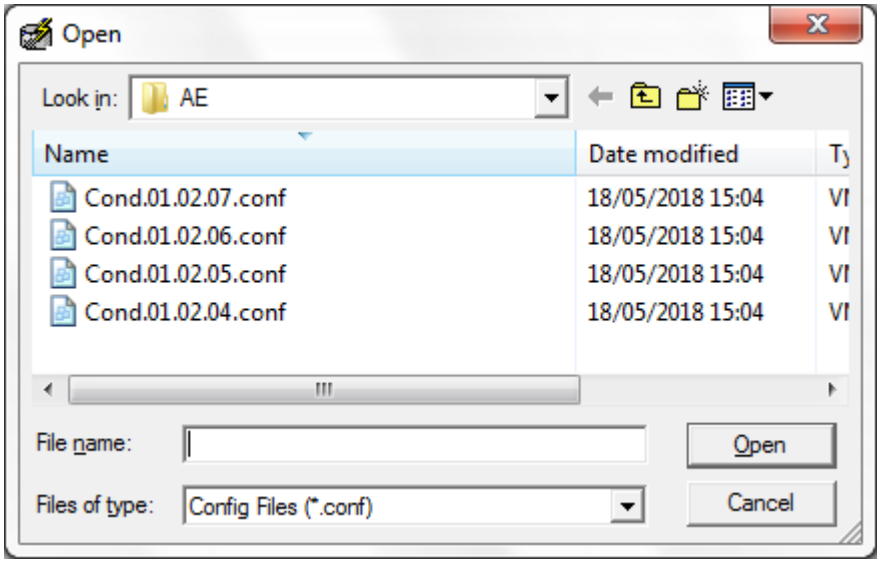


Figure 37: Import configuration

2. Find the file you want to import, click the file to select, and then click Open.
   After the configuration has been imported, the user can start to work with the configuration.

1.11. Export Configuration

To ***export*** an AE Archiver configuration:

1. On the AE Archiver menu, click **Export Configuration**, a dialog screen will appear:

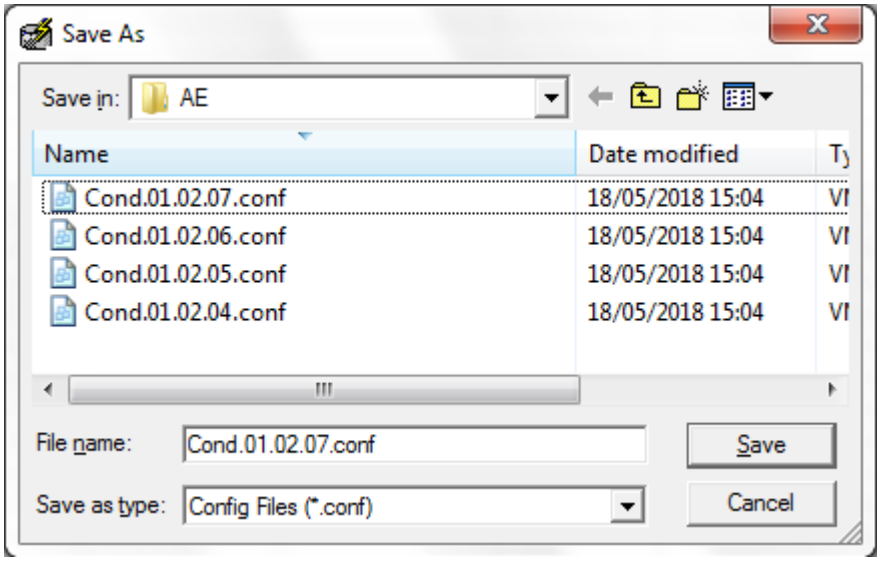


Figure 38: Export Configuration

2. In File name field, enter a name for the configuration file.
3. Click Save.

2. OPC Alarms and Events Management

2.1. OPC A&E Server Management

2.1.1. Adding an OPC Server Connection

To add an OPC server connection, the user should select:

- OPC Servers then Connect To Server in the Menu bar
- Or click the **Connect to an OPC AE Server** icon in the Toolbar.

A similar dialog screen appears:

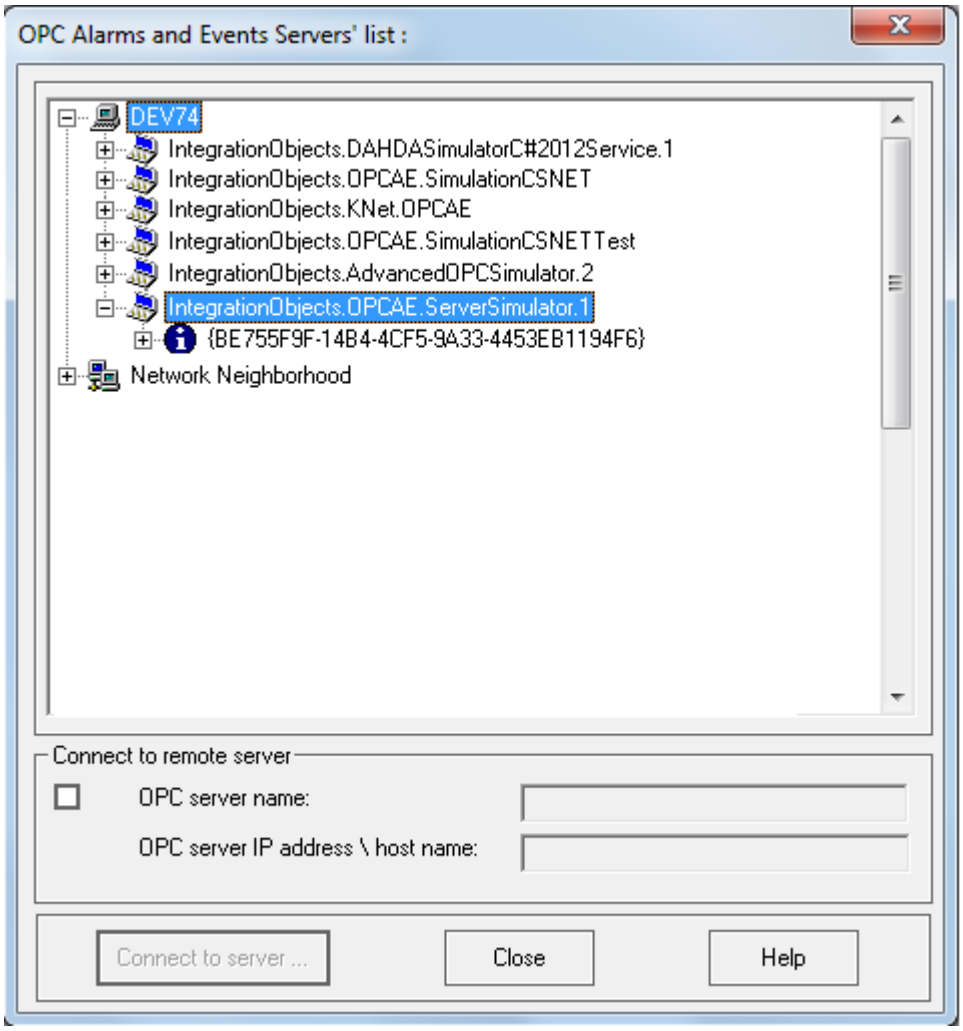


Figure 39: Add OPC Server Connection

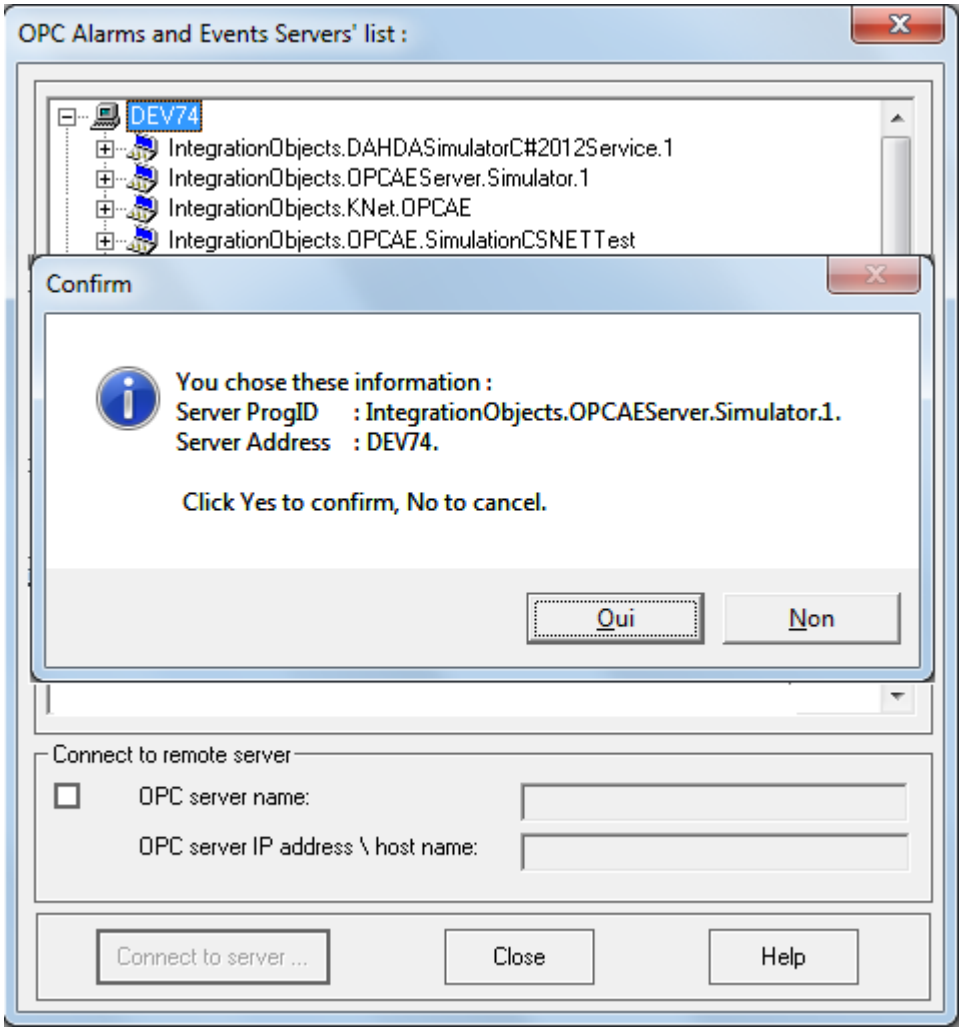


Figure 40: Confirm Message Box

There are two options for adding a new OPC server connection.
First Option:

1. Double-Click on the OPC server you wish to connect to.

Second Option:

1. Check the **Connect to remote server** option.
2. Type the name of your OPC AE server (called also ProgID) in the **OPC server name** text box.
3. Type the IP address or the node name of the machine hosting your server in the **OPC server IP address \ host name** text box.
4. Click **Connect to server**.

At this step and if the redundancy option is activated, a dialog screen will appear:

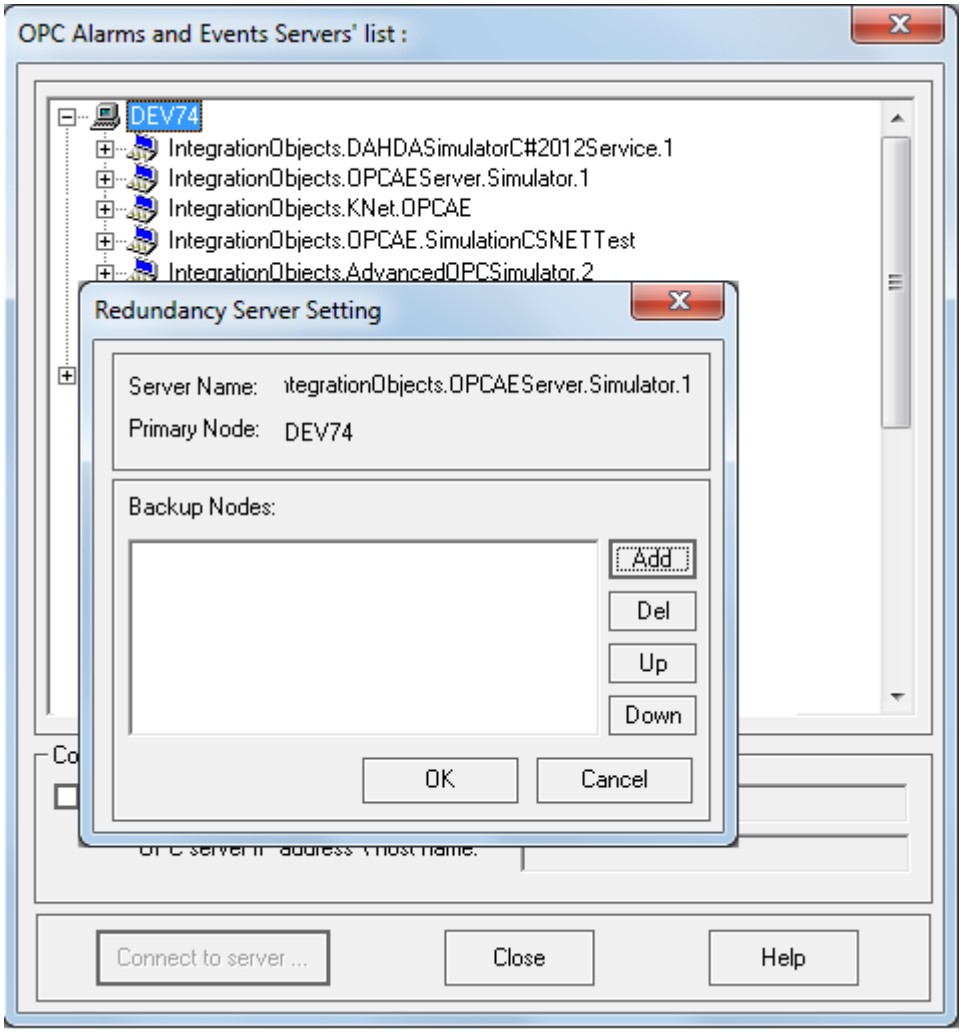


Figure 41: Redundancy Server Setting

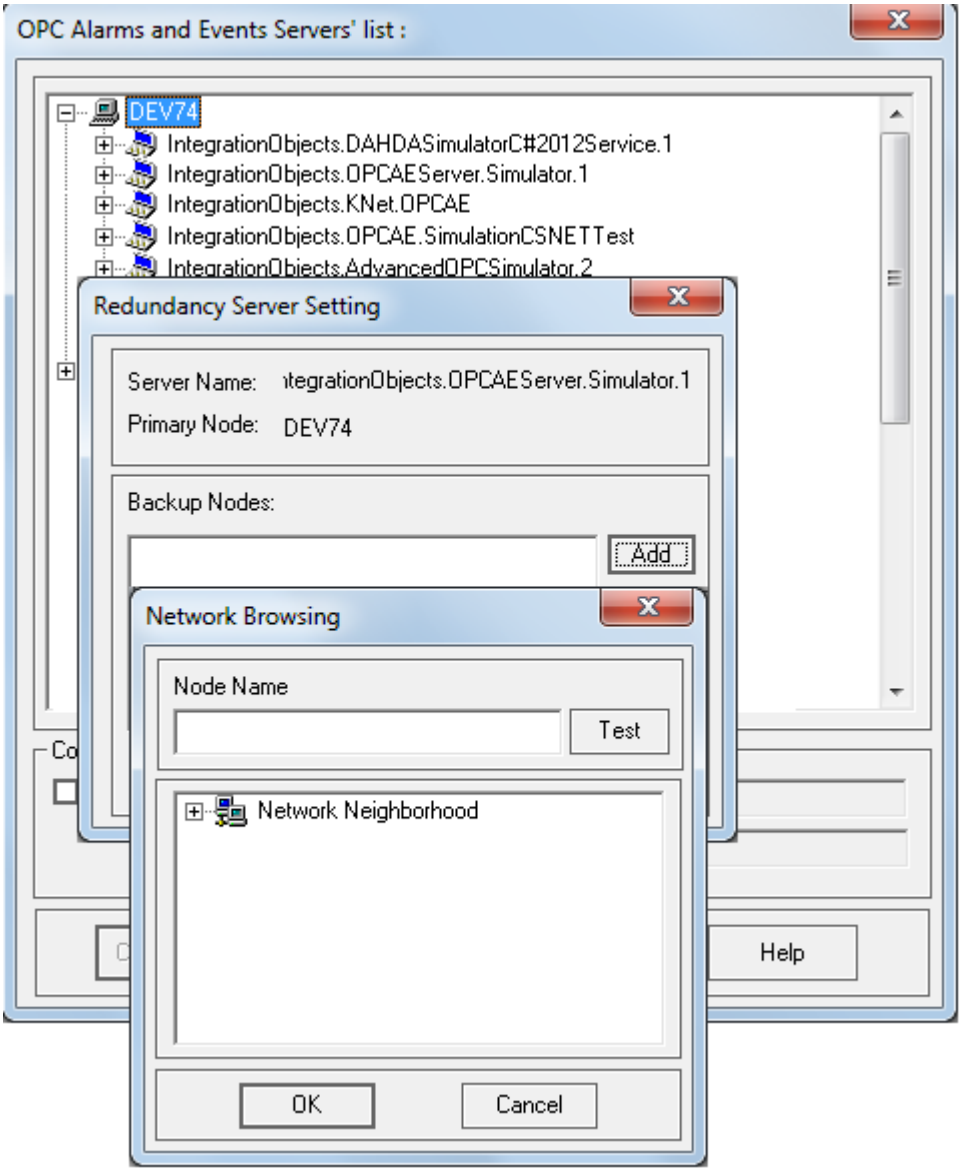


Figure 42: Network Browsing

Users may designate one or more OPC Servers as the Backup Server (Number of backup servers not restricted by the AE Archiver).

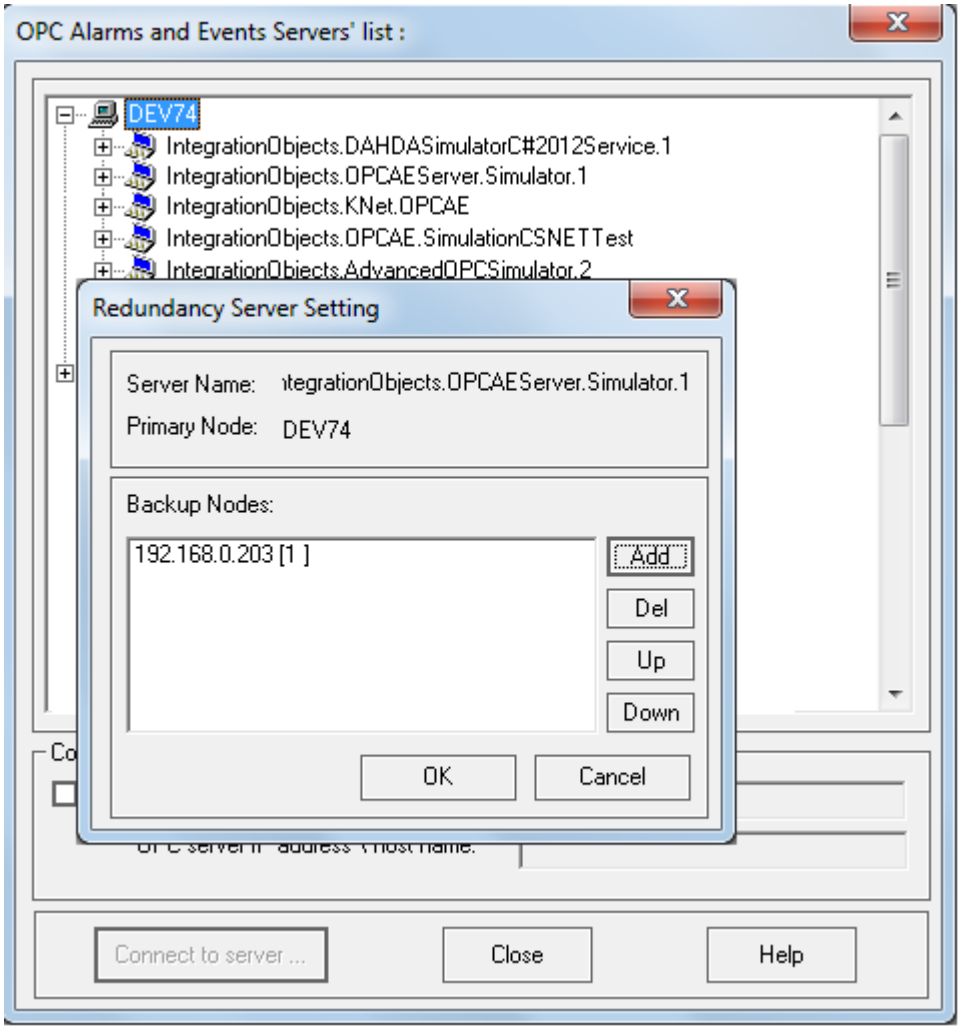


Figure 43: Redundancy Server Setting

- The OPC Alarms and Events Archiver normally uses the Primary OPC Server. If a Primary Server failure occurs for any reason, an automatic switch to the Backup OPC Server occurs.
- If a Backup Server failure occurs and the Primary Server is not restarted, Integration Objects' OPC Alarms and Events Archiver automatically switches to the next Backup Server.

The new connection is active and the underlying server is added to the server list.

2.1.2. Deleting an OPC Server Connection

To delete an existing OPC server connection, select the appropriate OPC server then the **Delete OPC Server Connection** menu item.

2.1.3. Deleting All OPC Servers' Connections

To delete all OPC server connections, the user should select:

- **OPC Servers** then **Disconnect All Servers** in the Menu bar.
- Or click the **Disconnect All Servers** icon in the Toolbar.

2.1.4. Viewing the Properties of an OPC AE Server

To view the properties of an OPC AE server, the user should right-click on the wanted OPC server then select the ***Server Status*** menu item.

A similar dialog screen appears:

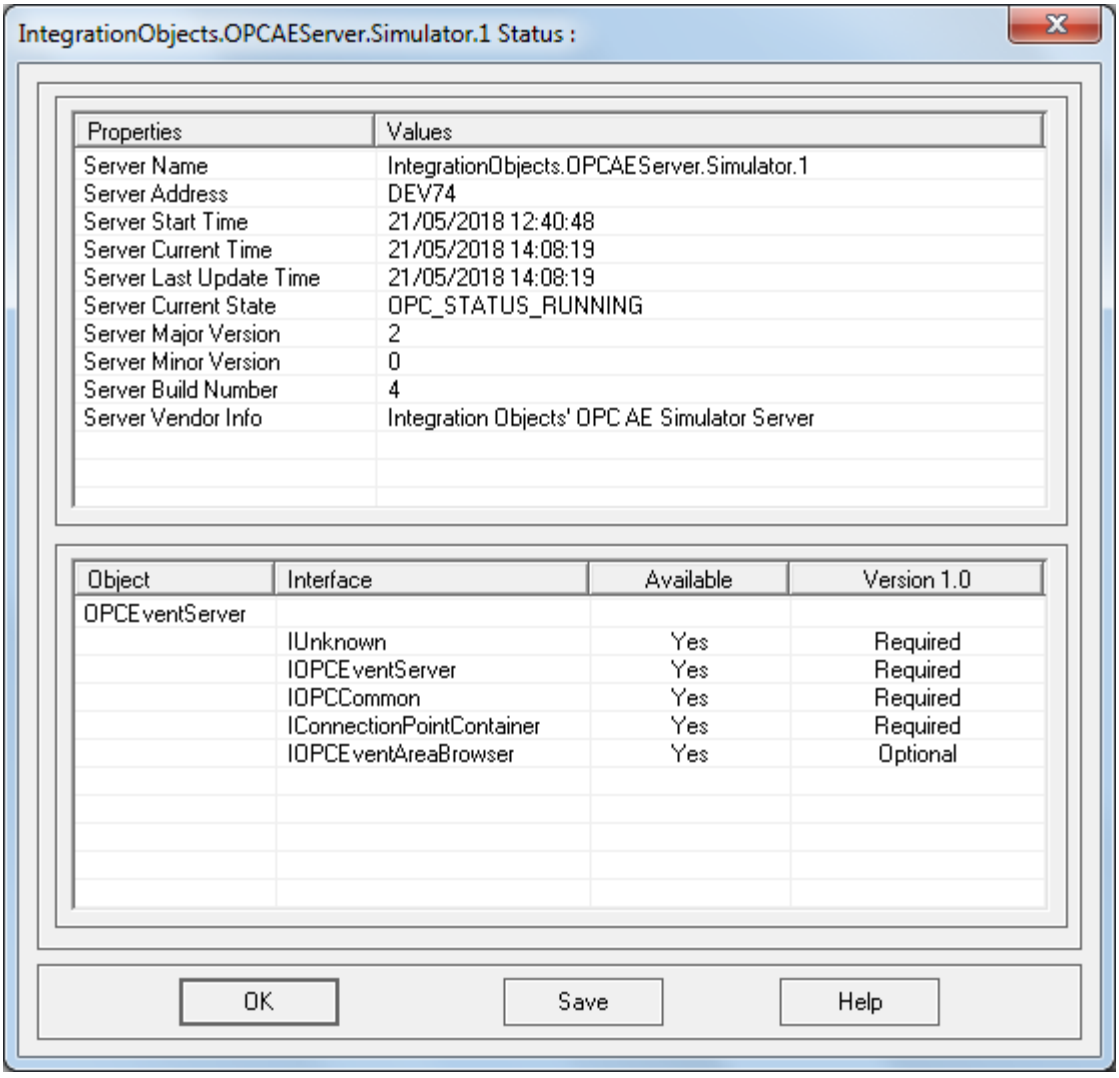


Figure 44: View Server Properties

The user can save this information in an XML file.

2.1.5. Viewing the Available Filters in an OPC AE Server

To view the filters of an OPC AE server, the user should right-click on the wanted OPC server then select the ***Display Available Filters*** menu item.

A similar dialog screen appears:

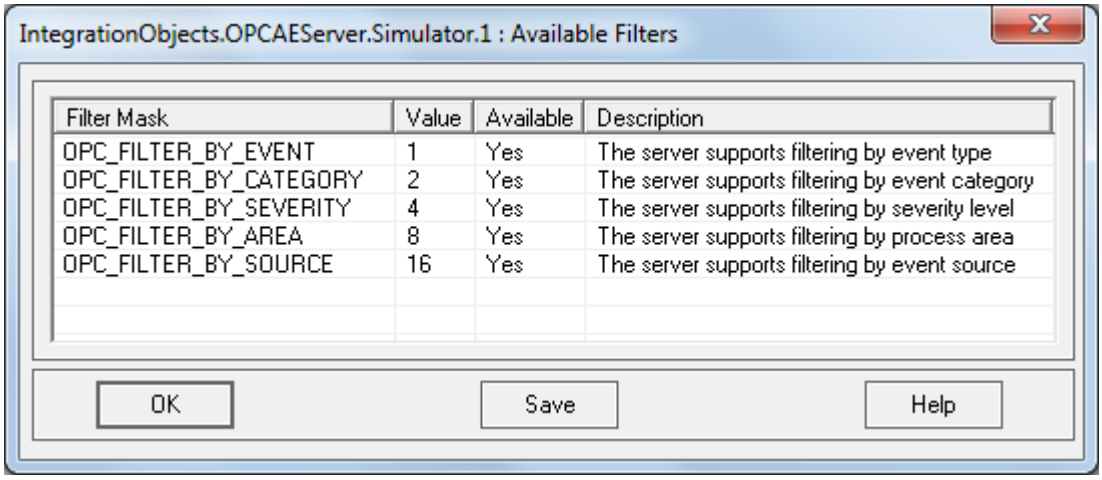


Figure 45: View Filters

This provides a way to find out which filter criteria are supported by a given OPC AE server.

2.1.6. Viewing the Available Categories of an OPC AE Server

To view the available categories of an OPC AE server, the user should right-click on the wanted OPC server then select the ***Display Available Categories*** menu item.

A similar dialog screen appears:

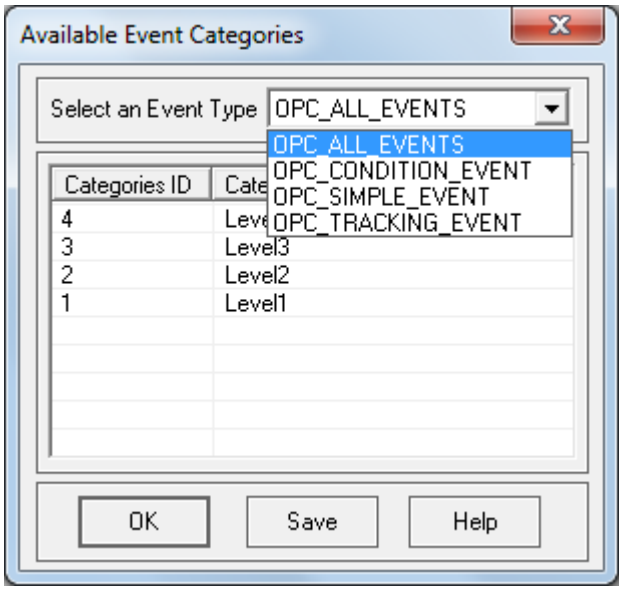


Figure 46: Available Event Categories

This provides a way to find out the categories of events supported by a given OPC AE server.

2.1.7. Browsing an OPC AE Server

To view the structure of an OPC AE server, the user should right-click on the wanted OPC server then select the ***Display Area and Source Browser*** menu item.

A similar dialog screen appears:

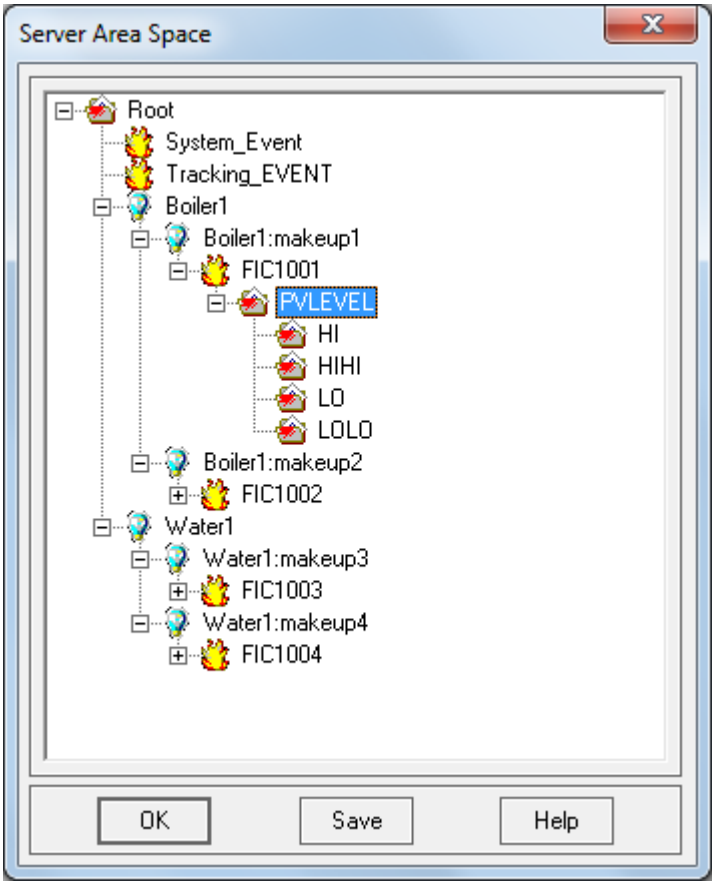


Figure 47: Server Area Space

This dialog provides a view of the OPC server structure in the form of a tree view. It allows the user to navigate the structure interactively and discover the different existing areas and sources.

2.1.8. Viewing the Available Condition Names of an OPC AE Server

To view the available condition names of an OPC AE server, the user should right-click on the wanted OPC server then select the ***Display Available Condition Name: Event Category --> Condition Names*** menu item.

A similar dialog screen appears:

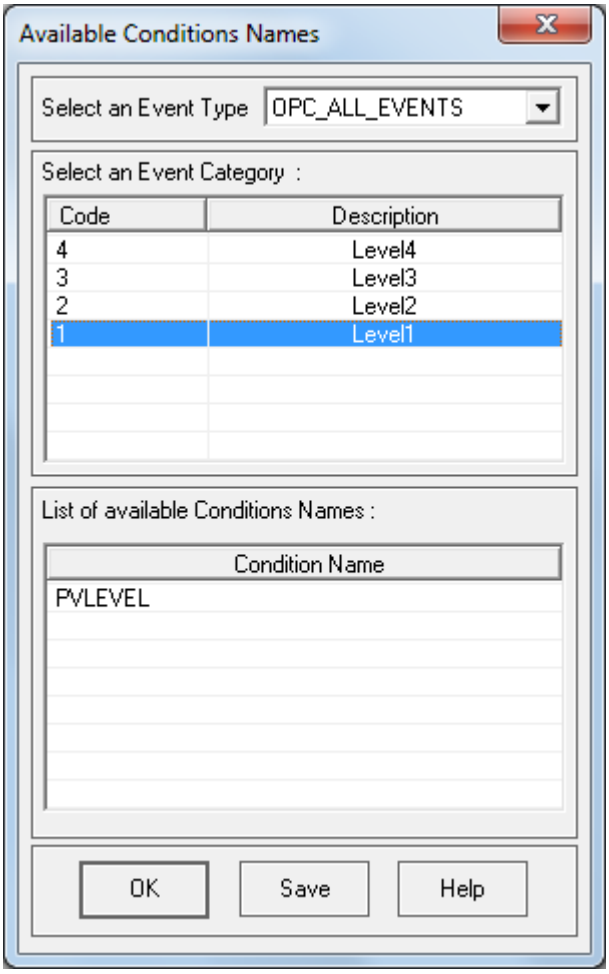


Figure 48: Available Condition Names

This provides a way to determine the condition names associated with a specific event category inside an OPC AE server.

To view the available condition names:

1. Select an “Event Type” from the combo box.
   The condition names related to this event type appear in the event categories list.
2. Double-click on one of the listed event categories. The list of available condition names appears in the bottom list.

2.1.9. Viewing the Available Source Condition Names in an OPC AE Server

To view the available source condition names in an OPC AE server, the user should right-click on the wanted OPC server then select the ***Display Available SourceConditionName: Source → ConditionNames*** menu item.

A similar dialog screen appears:

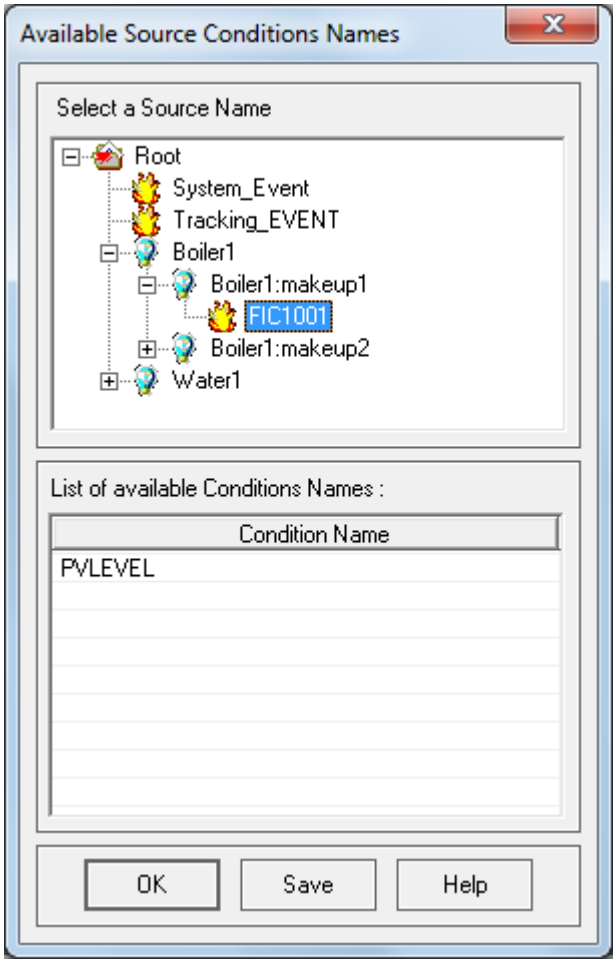


Figure 49: Available Source Condition Names

This provides the condition names associated with the specified source.
To find out the available source condition names:

1. Select a source name from the area and source tree structure.
2. Double-click on the desired source. The list of condition names associated with this source name will appear in the bottom list.

2.1.10. Viewing the Available Sub-Condition Names in an OPC AE Server

To view the available sub-condition names in an OPC AE server, the user should right-click on the wanted OPC then select the ***Display Available SubConditionName: ConditionName --> SubCondition Names*** menu item.

A similar dialog screen appears:

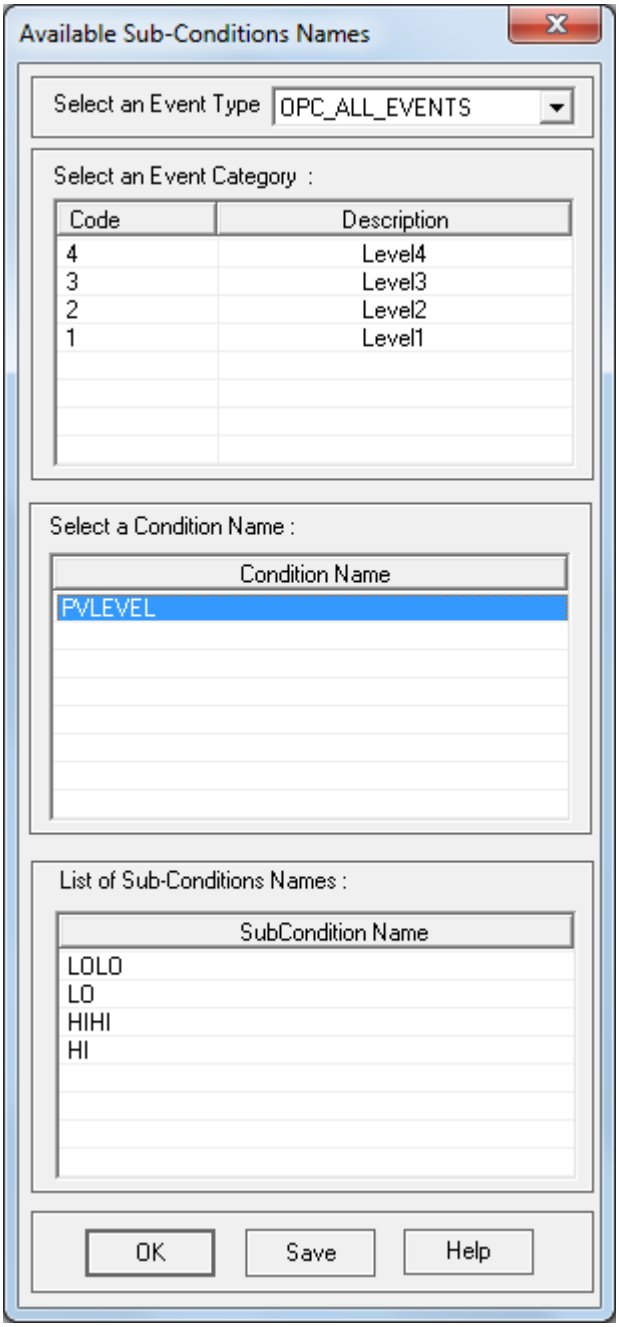


Figure 50: Available Sub-condition Names

This provides a way to find out the sub-condition names associated with the specified condition name.

The user has to:

1. Select an Event Type from the combo box.
   The list of event categories related to this selected Event Type will appear in the event categories list.

2. Double-click on one of the listed event categories. The list of condition names related to the selected event category will appear.
3. Double-click on one of the listed condition names. The list of sub-condition names appears in the bottom List.

2.1.11. Configure Attributes Mapping

Using this menu, the **Configure Attributes Mapping** window will be prompted and lists all OPC AE Server attributes.

The user can through this window:

1. Edit the column name or keep the default OPC AE Server attribute name. To edit the column name in the database:
   a. Double click on the text available in the first column: **Column Name**.
   b. Enter the new name
   c. Hit the Enter key.
2. Select the attributes to be added to the historian table.
3. Click Save button to save the configured attributes.

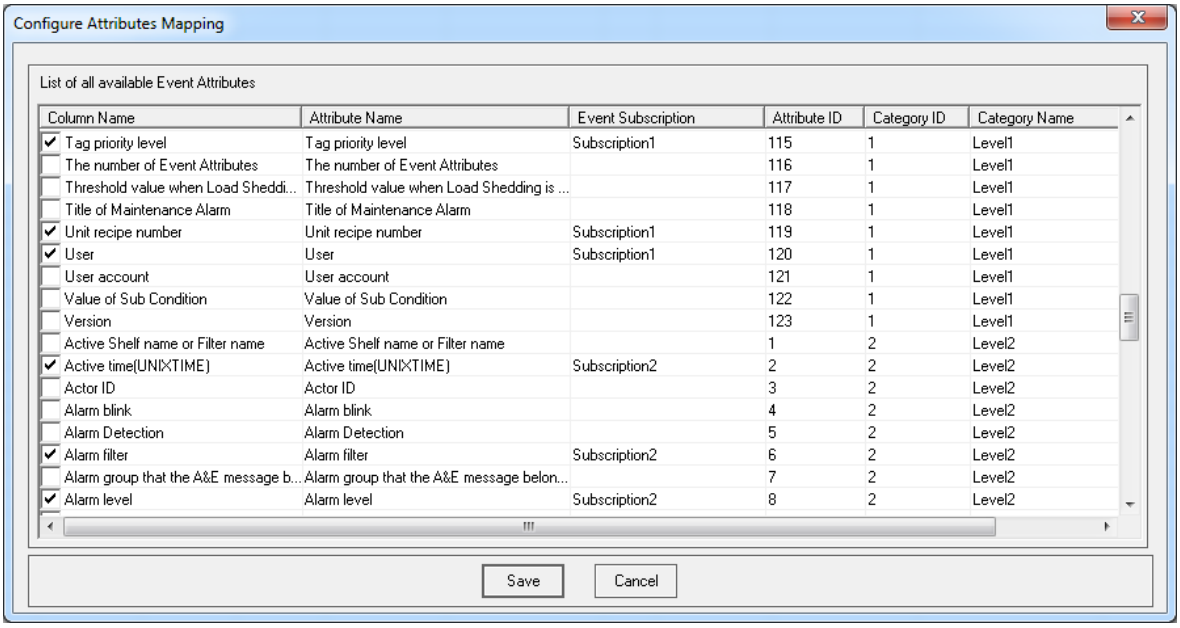


Figure 51: Configure Attributes Mapping

The configure Attributes Mapping can also be used to identify the attributes of each subscription.

2.1.12. Getting a Condition State

To view a condition state, the user should right-click on the desired OPC server then select the ***Get Condition State*** menu item.

A similar dialog screen appears:

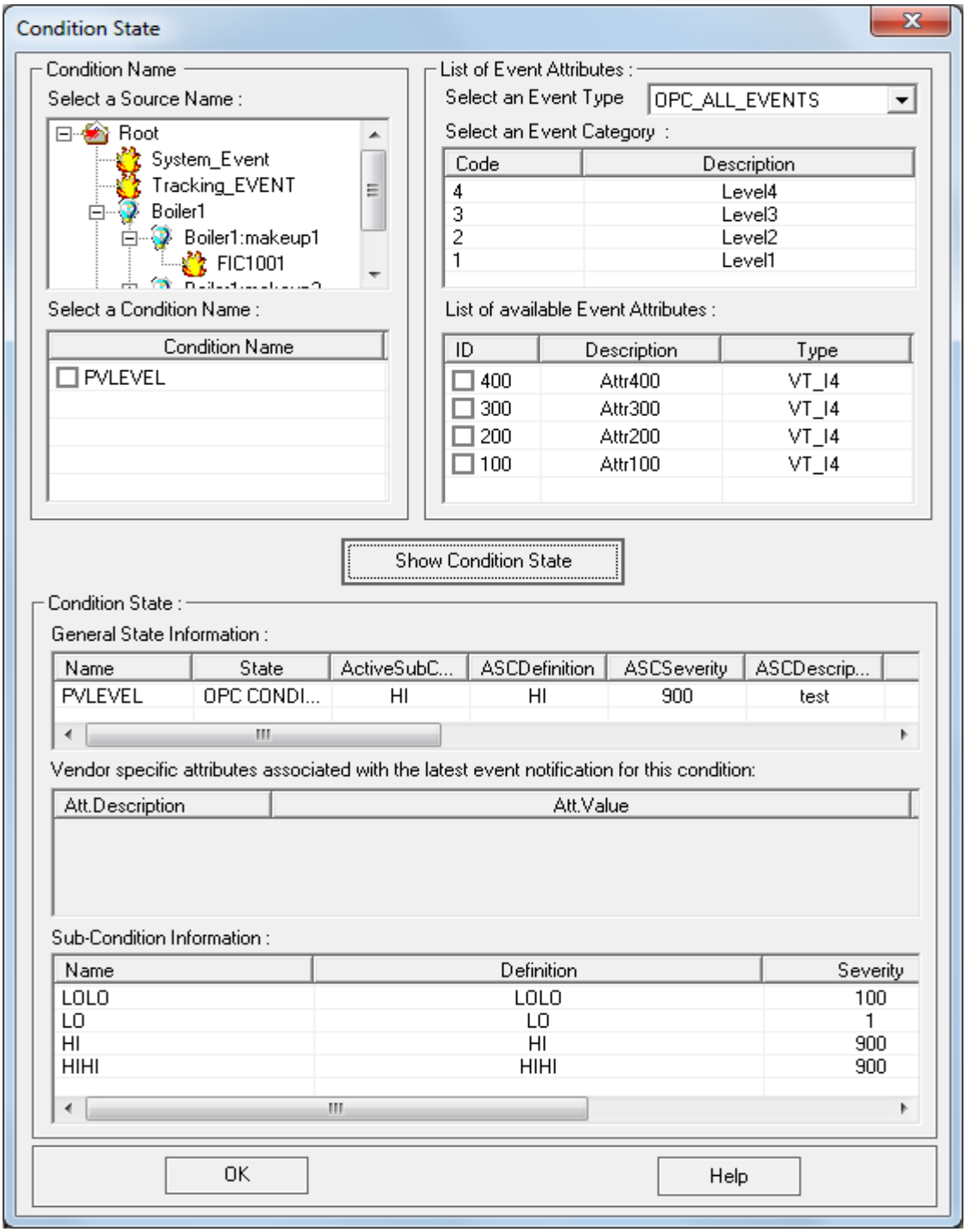


Figure 52: View Condition State

This displays the current state information of a condition instance for a given source name and condition name.

The user has to:

1. Select a source name from the area and source tree structure.
2. Double-click on the selected source. The list of available condition names related to this source name will appear in the bottom list.
3. Select a condition name from the previously generated list.
4. Select an event type from the combo box.
   The related event categories list is generated.
5. Double-click on an event category. The list of available event attributes will be displayed.
6. Select an event attribute from the previously generated list.
7. Click on **Show Condition State**.

Result:
The general condition information list displays the characteristics related to the condition. The sub-conditions list provides information related to the sub-condition of the selected condition.

2.1.13. Enabling a Condition by Area

To enable a condition by area, the user should right-click on the desired OPC server then select the **Enable Condition By Area** menu item.

A similar dialog screen appears:

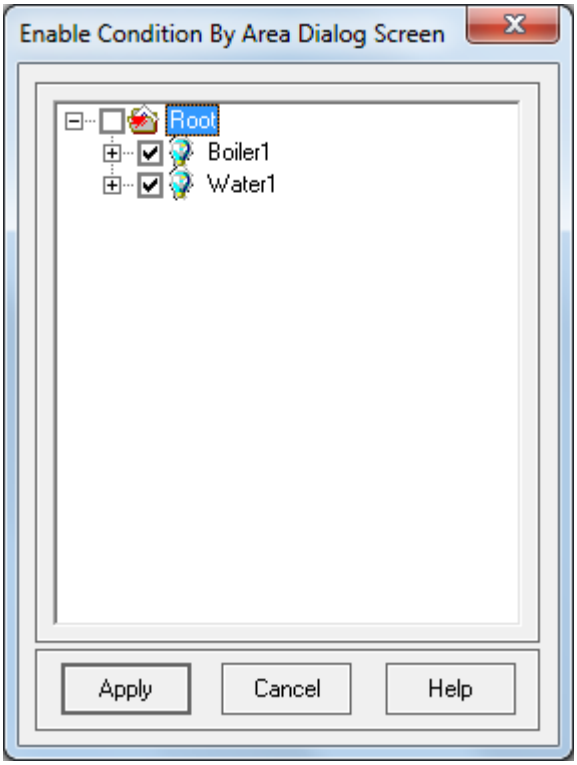


Figure 53: Enable Condition by Area

This allows the user to place all conditions for all sources within the specified process areas into the enabled state. Therefore, the server will generate condition-related events for these conditions.

To achieve this, the user has to:

1. Select the list of areas to enable from the tree structure (the user can select just a parent item, the children items will be added automatically).
2. Press the **Apply** button.

2.1.14. Enabling a Condition by Source

To enable a condition by source, the user should right-click on the desired OPC server then select the **Enable Condition By Source** menu item.

A similar dialog screen appears:

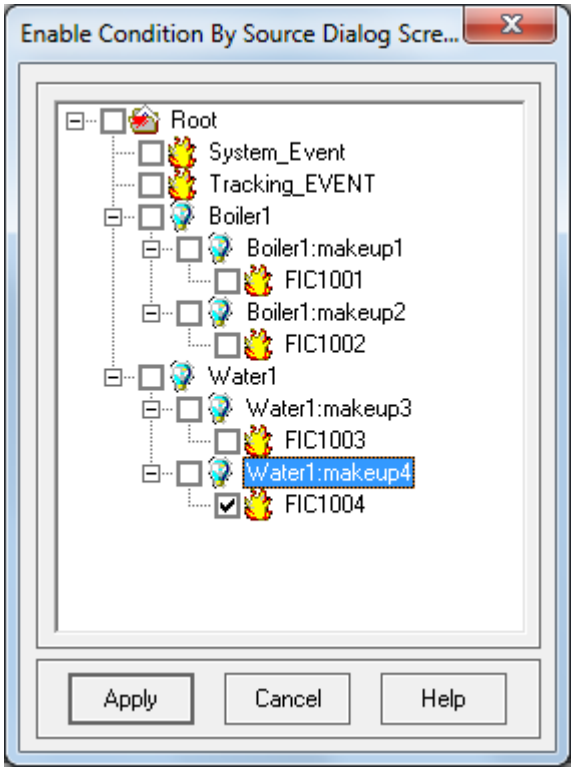


Figure 54: Enable Condition by Source

This allows the user to place all conditions for the specified event sources into the enabled state. Then, the server will generate condition-related events for these conditions.

To achieve this, the user has to:

1. Select the list of source name to enable from the tree structure (the user can select just a parent item, the children items will be added automatically).
2. Press the **Apply** button.

2.1.15. Disabling a Condition by Area

To disable a condition by area, the user should right-click on the desired OPC server then select the **Disable Condition By Area** menu item.

A similar dialog screen appears:

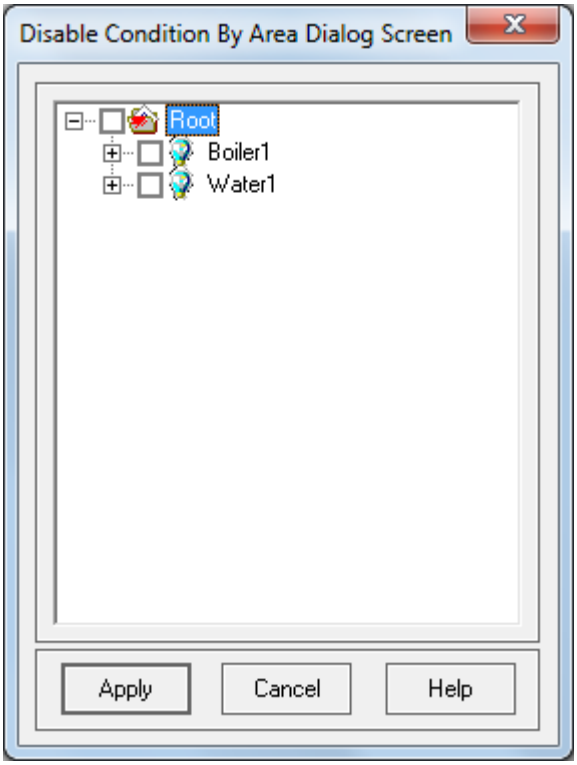


Figure 55: Disable Condition by Area

This allows the user to place all conditions for all sources within the specified process areas into the disabled state. The server will now stop generating condition-related events for these conditions.

To achieve this, the user has to:

1. Select the list of areas to disable from the tree structure (the user can select just a parent item, the children items will be added automatically).
2. Press the **Apply** button.

2.1.16. Disabling a Condition by Source

To disable a condition by source, the user should right-click on the desired OPC server then select the **Disable Condition By Source** menu item.

A similar dialog screen appears:

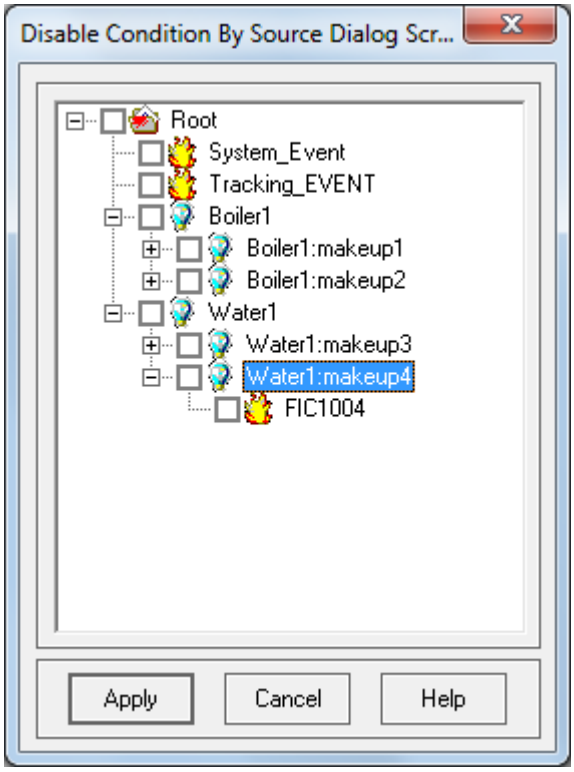


Figure 56: Disable Condition by Source

This allows the user to place all conditions for the specified event sources into the disabled state. The server will no longer generate condition-related events for these conditions.

To achieve this, the user has to:

1. Select the list of source names to disable from the tree structure (the user can select just a parent item, the children items will be added automatically).
2. Press the **Apply** button.

2.1.17. Ack Condition

To acknowledge one or more conditions in the OPC AE server, the user has to apply the AckCondition method.

This AckCondition method specifically acknowledges the conditions that are becoming active or transitioning into a different sub-condition.

The Alarms and Events Archiver provides the user with the possibility to acknowledge automatically one or more conditions. To do this, the user can:

1. Double-click on the specified source name from the screen browser (The AE Archiver will acknowledge the related condition with the "**AEArchiver**" ActorID).

Condition	SubCondition	Mask	NewState	Event Type	Event Category	AckReq	Active Time	Cookie	Actor ID
PVLEVEL	LOLO	OP...	2	OPC_CONDITIO...	Level1	FALSE	21/05/2018 15:41...	138709...	AEArchiver
DEVIATION	DEVIATION	OP...	2	OPC_CONDITIO...	Level2	FALSE	21/05/2018 15:41...	138714...	AEArchiver

Figure 57: Event Acknowledgment

2. Right-click on the specified source name from the screen browser, a menu will appear:

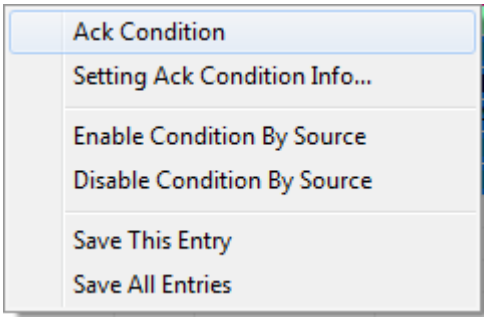


Figure 58: Acknowledgment Strip Menu

Choose Ack Condition, a dialog screen will appear:

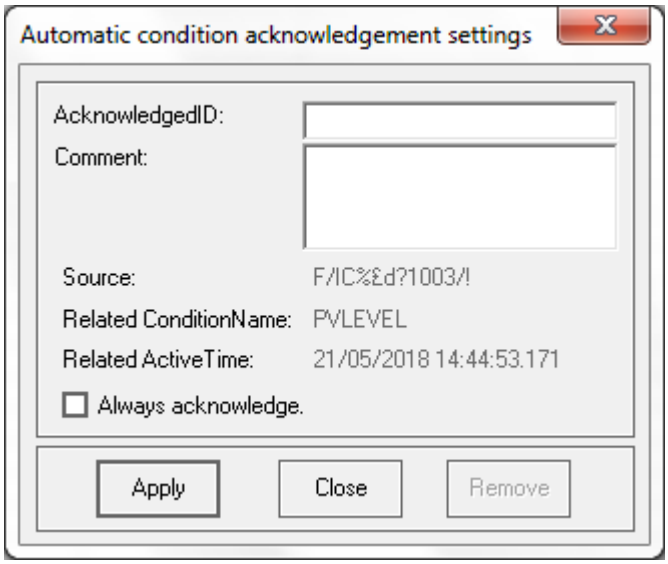


Figure 59: Automatic Condition Acknowledgment Settings

AcknowledgedID: A string passed in by the client, identifying who is acknowledging the conditions.
Comment: Comment string passed in by the client associated with acknowledging the conditions.
Source: Identifies the source of each condition that is being acknowledged.
Related ConditionName: Identifies each condition that is being acknowledged.
Related ActiveTime: This parameter uniquely identifies a specific transition of the condition to the active state or into a different sub-condition and is the same as the SubCondLastActive condition attribute.

Always acknowledge: If this option is checked, the AE Archiver will automatically acknowledge the related condition name when it is necessary.

2.1.18. Add Static Info to Historian

To add static information (areas, sources, available filters, available event categories, etc.) related to an OPC server, the user could right-click on the desired OPC server then select the **Add Static Info to Historian** menu item.

2.1.19. Server Redundancy Settings

To view the properties of an OPC AE server, the user should right-click on the desired OPC server then select the **Server Redundancy Setting** menu item. A similar dialog screen appears:

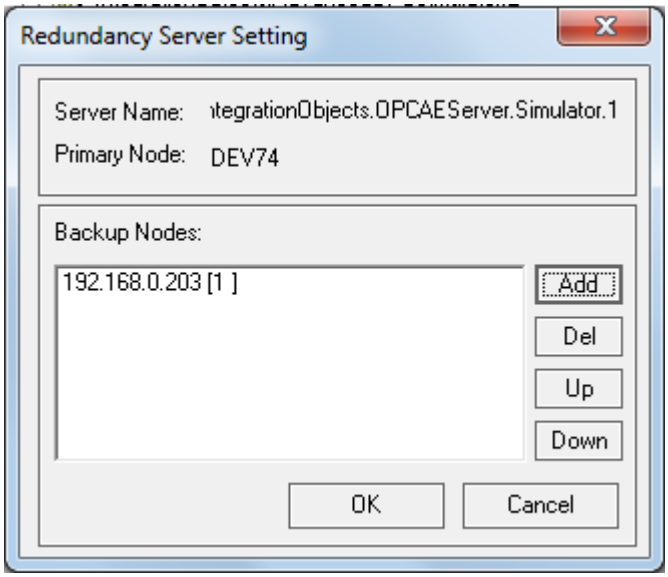


Figure 60: Server Redundancy Setting

The user may designate one or more OPC Servers as the Backup Server (the number of backup servers not restricted by the AE Archiver).

1. Add button: used to add a new backup node.

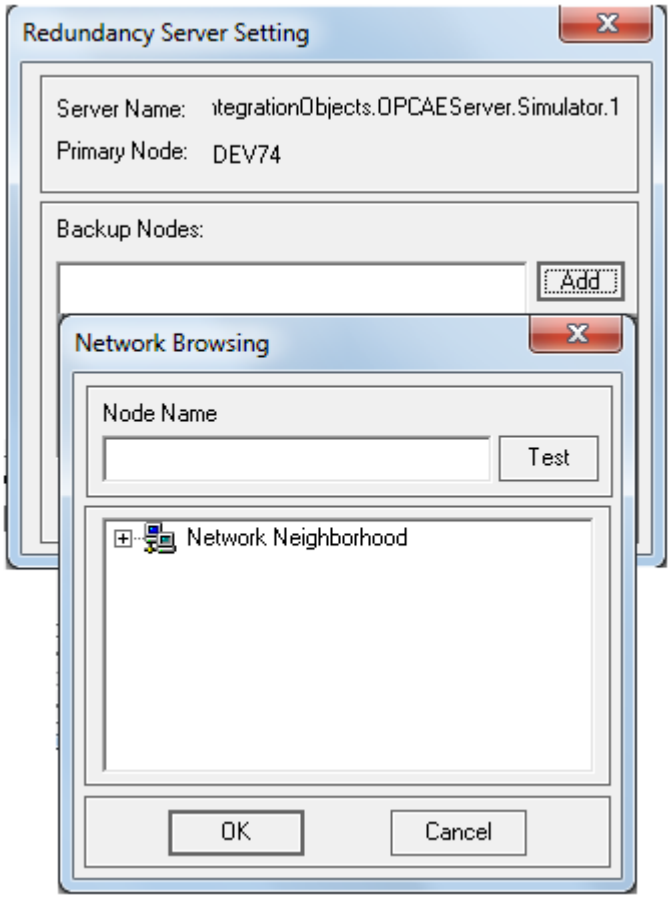


Figure 61: Add New Backup Node

2. Del button: used to remove an existing backup node.
3. Up/Down button: used to change the order of the backup nodes.

2.1.20. Creating a New event Subscription

To view the properties of an OPC AE server, right-click on the desired OPC server then select the **Create Event Subscription** menu item.

A similar dialog screen appears:

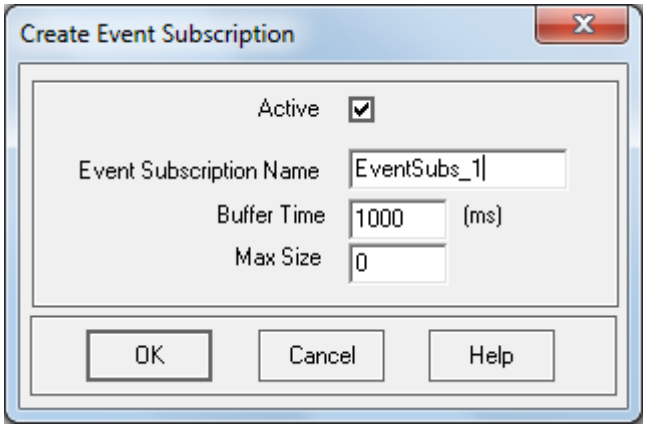


Figure 62: Create Event Subscription

This allows the user to create a new Event Subscription in the OPC AE server. The user has to fill out the different properties of the subscription:

- ***Active***: Checked if the Event Subscription is to be created active. Unchecked if the Event Subscription is to be created as inactive. If the subscription is inactive, then the server will not send event notifications to the client based on the subscription, and has no responsibility to buffer or maintain the event notifications. Thus, event notifications may be lost.
- ***EventSubscription Name***: The name to be associated with the event subscription.
- ***Buffer Time***: The requested buffer time. The buffer time is in milliseconds and tells the server how often to send event notifications.
- ***Max Size***: The requested maximum number of events that will be sent in a single callback. A value of 0 means that there is no limit to the number of events that will be sent in a single callback.

2.2. OPC Alarms and Events Subscription Management

2.2.1. Activate an Event Subscription

To activate an existing Event Subscription, the user should right-click on the desired OPC Event Subscription then select the **Activate Subscription** menu item.

This way, the user can activate the selected Event Subscription and thus receive the event notifications fired by the related OPC server.

2.2.2. Deactivate an Event Subscription

To deactivate an existing Event Subscription, the user should right-click on the target OPC Event Subscription then select the **Deactivate Subscription** menu item.

If the user deactivates the Event Subscription, then the server will stop sending the event notifications related to this subscription.

2.2.3. Viewing an Event Subscription State

To set the state of an existing Event Subscription, the user must right-click on the target OPC Event Subscription then select the **Subscription State** menu item.
A similar dialog screen appears:

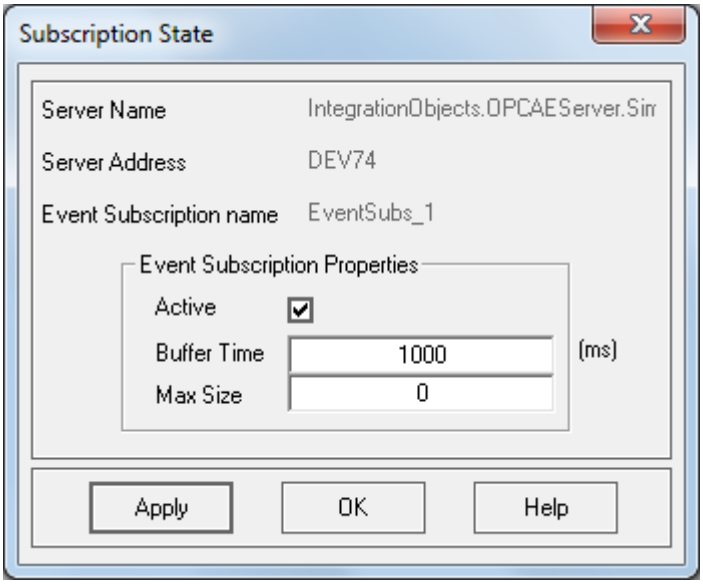


Figure 63: Subscription State

This screen plays two roles. During the initialization, this screen posts the current information related to the selected Event Subscription.

OPC AE Server Name: The name of the OPC Server that contains the Event Subscription.
OPC AE Server Address: The address of the machine hosting the underlying OPC Server.
Event Subscription Name: The name of the current Event Subscription.

Event Subscription properties:

- **Active:** Unchecked if the Event Subscription is to be created inactive. Checked if the Event Subscriptions are to be created as active. If the subscription is inactive, then the server will not send event notifications to the client based on the subscription.
- **Buffer Time:** The requested buffer time. The buffer time is in milliseconds and tells the server how often to send event notifications.
- **Max Size:** The requested maximum number of events that will be sent in a single callback. A value of 0 means that there is no limit to the number of events that will be sent in a single callback.

The second role of this screen is that it provides the user with the possibility of modifying this state. The user can modify the state of the Event Subscription

(Active or Inactive), the buffer Time or the Max Size, and press the **Apply** button to validate these changes.

2.2.4. Setting an Event Subscription Filter

To set a filter for an existing Event Subscription, the user should right-click on the target OPC Event Subscription then select the **Subscription Filter** menu item.

A similar dialog screen appears:

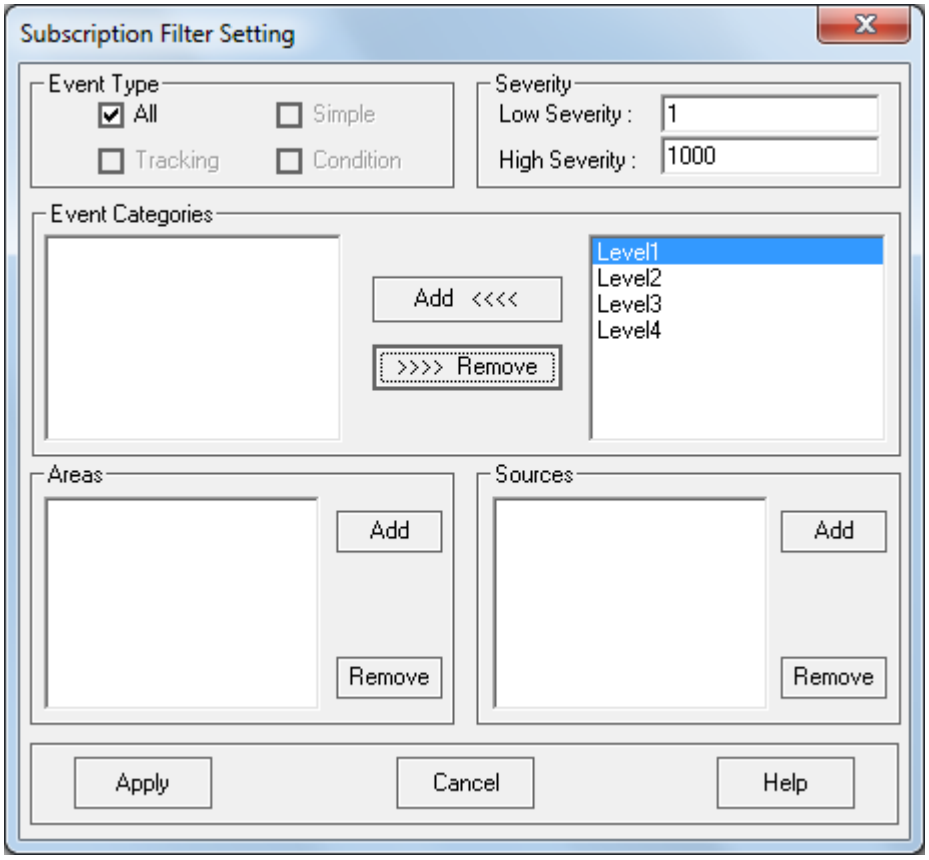


Figure 64: Subscription Filter Setting

This allows the user to set the filtering criteria to be applied to the event subscription. The following are the possible applicable criteria:

- Type of event (simple, condition, or tracking): the user must check the corresponding Check Box.
- Event categories: Using the **Add/Remove** button the user can add/remove event categories from the filter. The right list box contains the event categories supported by the current related OPC AE server. The left list box contains the event categories added to this filter.
- Lowest severity (i.e. all events with a severity greater than or equal to the specified severity): The user must type a value for the Low Severity in the Low Severity text box.

- Highest severity (i.e. all events with a severity less than or equal to the specified severity): The user must type a value for the Height Severity in the Height Severity text box.
- Process areas: to add an area to the current filter, the user must press the left **Add** button, a similar dialog screen appears:

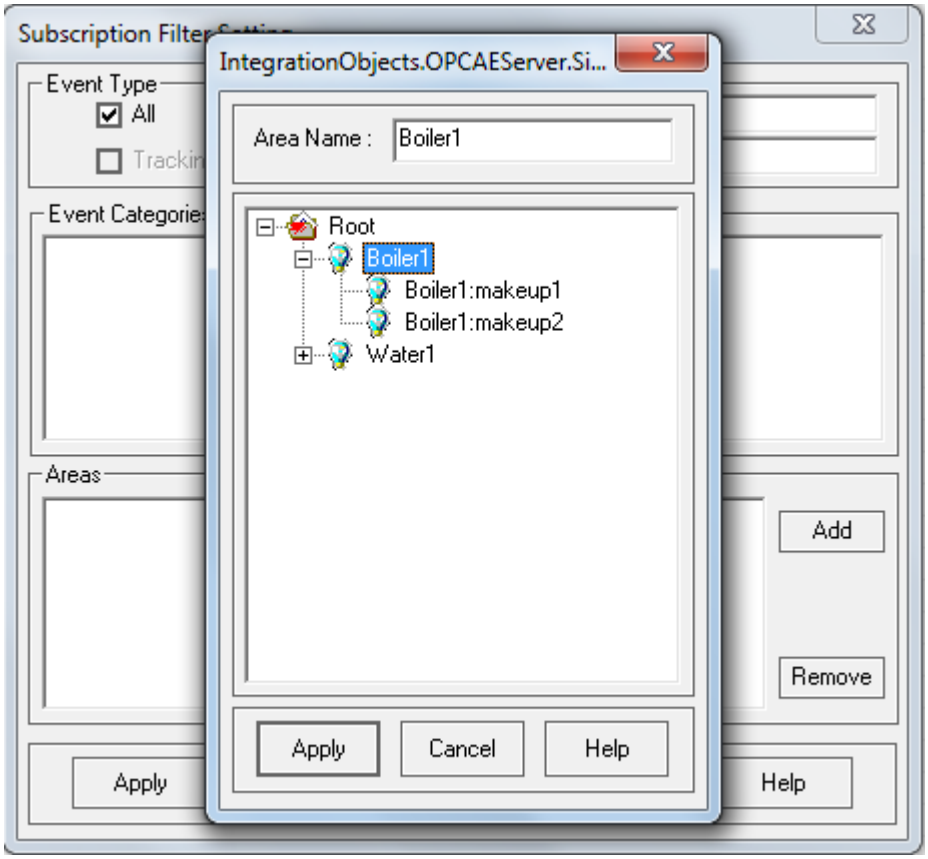


Figure 65: Add Process Area

After selecting an **area name**, press the **Apply** button to validate this operation: the selected **area name** is added to the **left list box**. This area is then added to the **filter**. If you want to remove it, select the **area name** and press the left **Remove** button.

- Event Sources: to add a source to the current filter, the user must press the right **Add** button. A similar dialog screen appears:

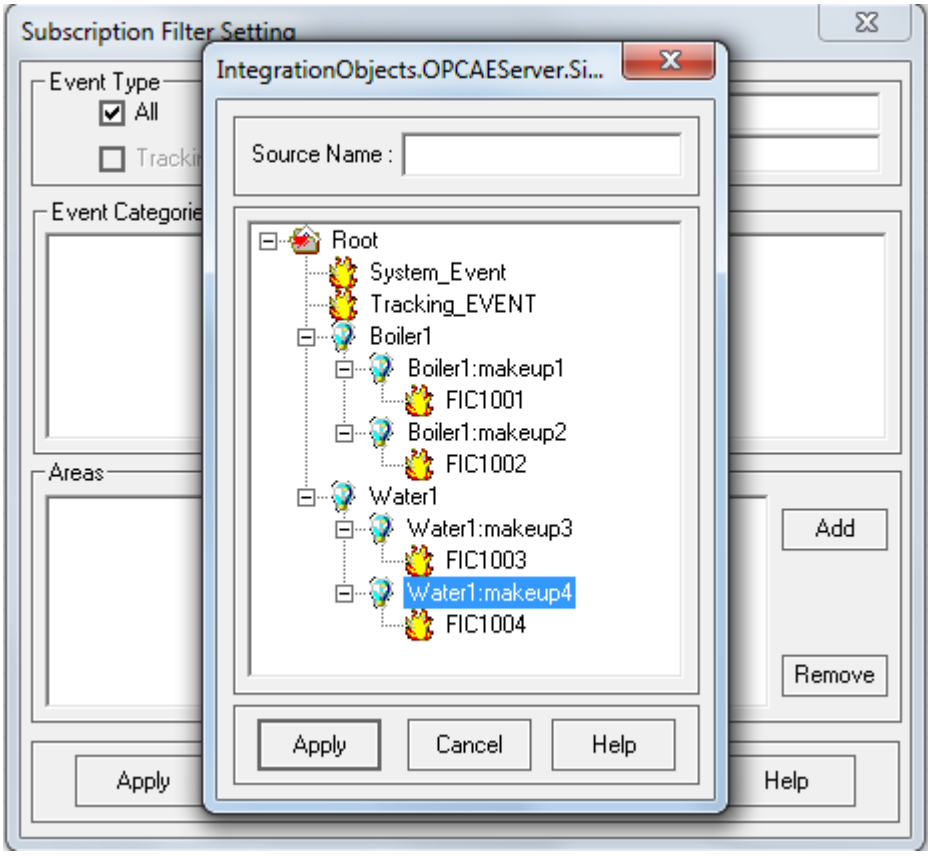


Figure 66: Add Source

After selecting a **source name**, press the **Apply** button to validate this operation: the selected **source name** is added to the **right list box.** This **source** is then added to the **filter**. If you want to remove it, select the **source name** and press the right **Remove** button.

A list of values for a single criterion are logically related together with the OR operator (e.g. if two event categories are specified, event notifications for both categories will be received). If multiple criteria are specified, they will be logically related using the AND operator, i.e. only events satisfying all criteria will be selected. For example, specifying both lowest severity and highest severity will result in the selection of events with severities lying between the two values.

2.2.5. Selecting Returned Attributes

To retrieve the attributes of an existing Event Subscription, the user should right-click on the target OPC Event Subscription then select the **Select Returned Attributes** menu item.

Before selecting the returned Attributes, the user should select the OPC AE Server attributes from Configure Attributes Mapping window.

For each event category, SelectReturnedAttributes picks out the attributes to return with event notifications. This method can be called many times in order to specify the attributes to return for each unique event type and event category pair. If this is called multiple times for the same event type and event category pair, then it is the latest call that will be taken into account.

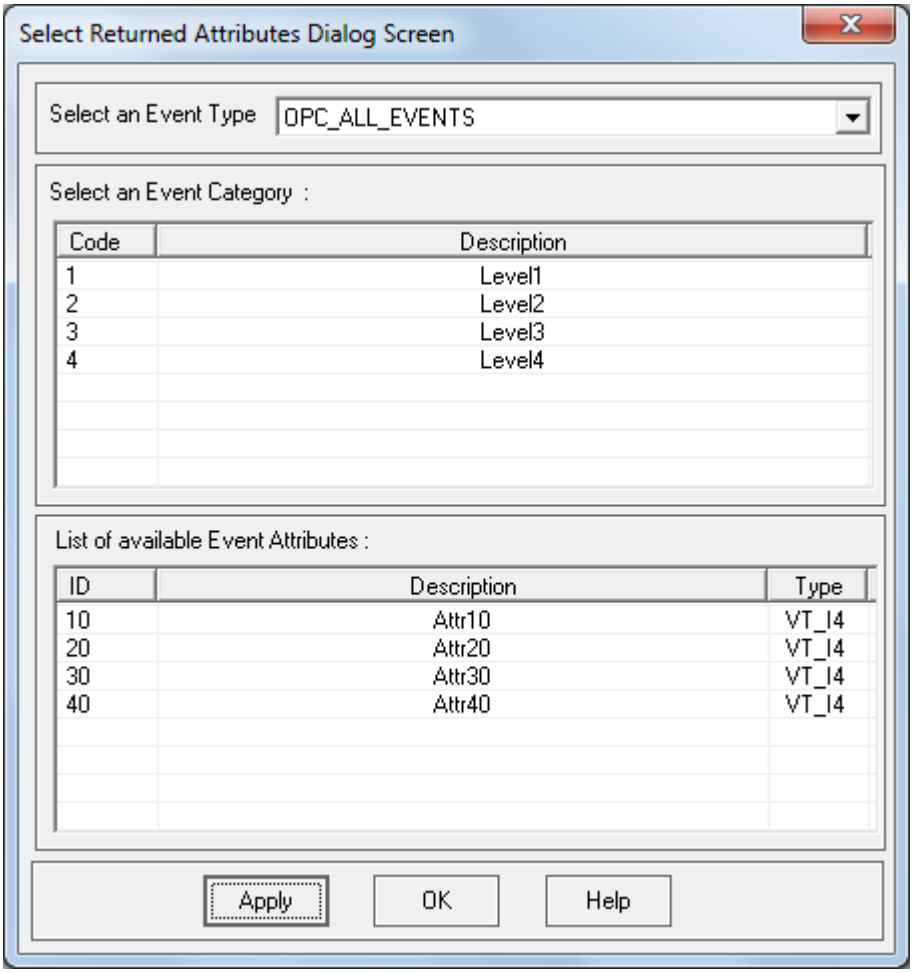


Figure 67: Select Returned Attributes

2.2.6. Getting Returned Attributes

To get the attributes of an existing Event Subscription, the user should right-click on the target OPC Event Subscription then select the **Get Returned Attributes** menu item.

For each event category, GetReturnedAttributes retrieves the attributes previously specified by the user on the SelectReturnedAttributes dialog.

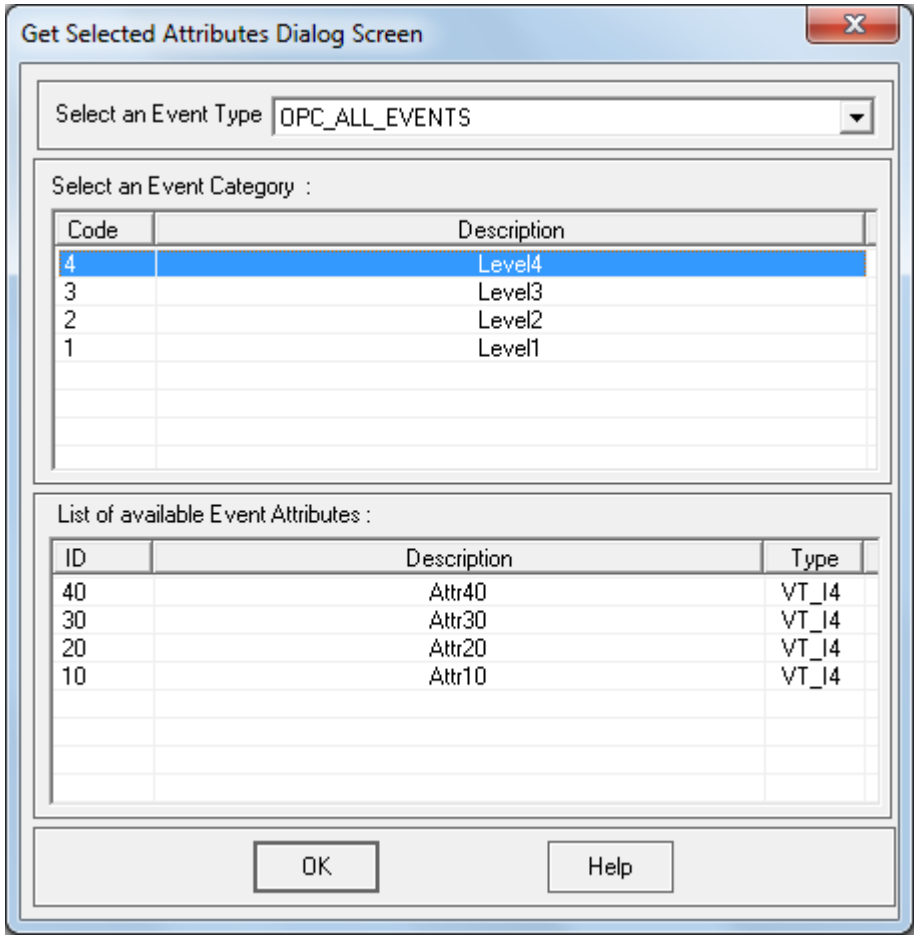


Figure 68: Get Selected Attributes

2.2.7. Refreshing an Event Subscription

To refresh an existing Event Subscription, the user should right-click on the target OPC Event Subscription then select the **Refresh Subscription** menu item.

This operation forces the refresh of all active and inactive conditions related to the selected Event Subscription.

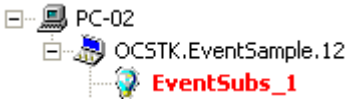
2.2.8. Canceling Refresh for an Event Subscription

To cancel the refresh for an existing Event Subscription, the user should right-click on the target OPC Event Subscription then select the **Cancel Refresh Subscription** menu item.

2.2.9. Configure Subscription Historian Table

In the historian configuration step, the user can store alarms in one table per event subscription. The existence of this historian table is marked by the “red” color (“black” for non-configured subscription) as follows:

- A **red** color for configured subscription



- A **black** color for non-configured subscription

If the user chooses the option to store all alarms in the same historian table, this option will be hidden.

To configure a subscription historian table:

- Right-click on the target OPC Event Subscription.
- Select the **Settings → Configure Subscription Historian Table** menu item.

  A dialog screen appears as follows:

Figure 69: Configure Subscription Historian Table

- If you want to use the primary key when the table is created, you check the "Use Primary Key" button (uncheck this button to deactivate this option).

- If you choose to use the “Use Primary Key” option, you have to select the list of fields that compose the primary key.
- To configure the subscription table, you can:
  - Configure a new table: In this case, you can set table and field names using one of the following methods:
    - Use the default table and field names. (“**Use default table and fields names**” option should be checked).
    - Set your own table and field names. (“**Setting table and fields names**” and “**New table**” options should be checked).
  - Use an existing table. (“**Setting table and fields names**” and “**Existing table**” options should be checked).

When mapping your fields, if you check “Use separate attributes columns” check button, the AE Archiver will create separate columns in the designated historian table to store the vendor specific attributes.

When mapping the AE Archiver fields with the existing table fields, you should respect the following table:

Field Name	Required SQL Type
Machine name	Varchar
Server name	Varchar
Server address	Varchar
Event Subscription name	Varchar
Source name	Varchar
EventTime	Date/ time
EventTime millisecond	Integer
Severity	Integer
Message	Varchar
Quality	Varchar
Condition	Varchar
SubCondition	Varchar
Mask	Varchar

New state	Varchar
EventType	Varchar
Event Category	Varchar
Ack required	Varchar
ActiveTime	Date/ time
ActiveTime_MS	Integer
Cookie	Varchar
ActorID	Varchar
Attributes	Varchar

Table 2: Table Fields

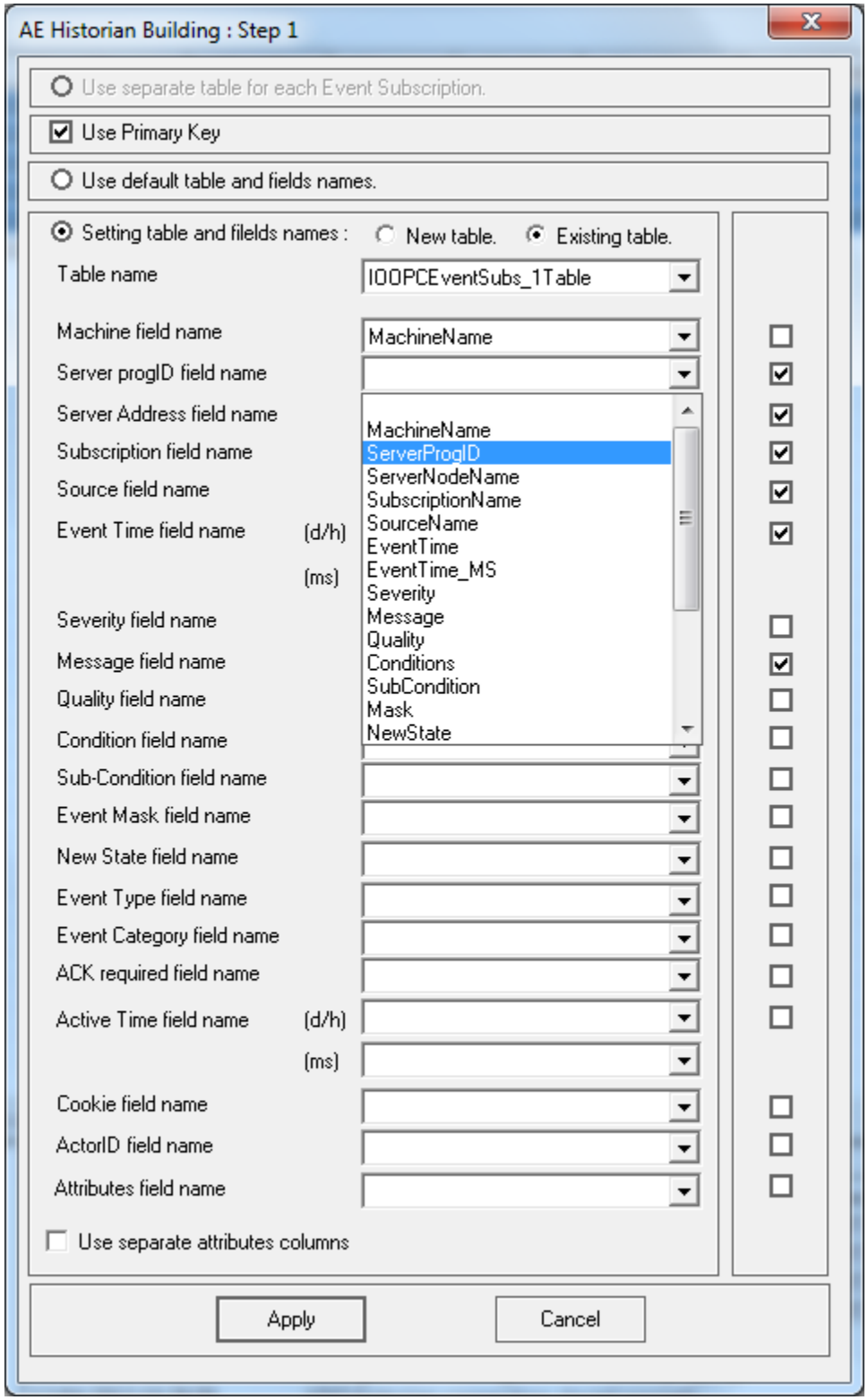


Figure 70: Fields Setting

If the user checks the "Use Primary Key" option, the list of fields to be used as primary key must define a unique row for each alarm.

Example: If the user uses just a "SourceName" as Primary Key, he will get a database error that mentions that a duplicate value in Primary Key is detected.

2.2.10. View Subscription Historian Table

This functionality is active if the subscription already has a configured historian table. It's used to view the table settings related to the selected subscription from the historian.

So, to view the configured subscription table settings, the user should right-click on the target OPC Event Subscription then select the **Settings → View Subscription Historian Table** menu item. A similar dialog screen appears:

Figure 71: View Table Settings

2.2.11. Removing an Event Subscription

To remove an existing Event Subscription, the user should right-click on the target OPC Event Subscription then select the **Remove Subscription** menu item.

This operation removes the selected Event Subscription from the context of the related OPC AE server and from the current configuration setting.

3. Historian Management

3.1. Adding ADO Historian

To add a new ADO Historian, the user can select:

- Transfer, Config New Historian, then ADO in Menu bar.
- **Create ADO Historian** button in Toolbar.

A dialog screen appears: **(OLE DB Data Link)**

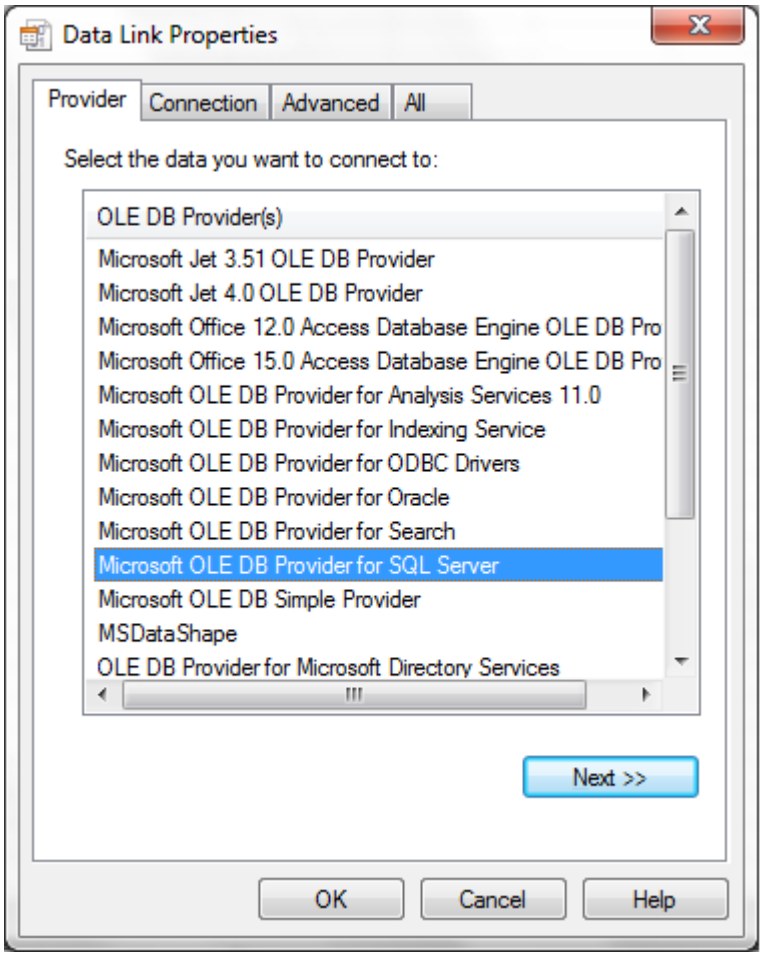


Figure 72: Add New Historian

To add a new ADO Historian, the user must start by choosing the provider to use, and then pressing the **Next** button. A dialog screen appears:

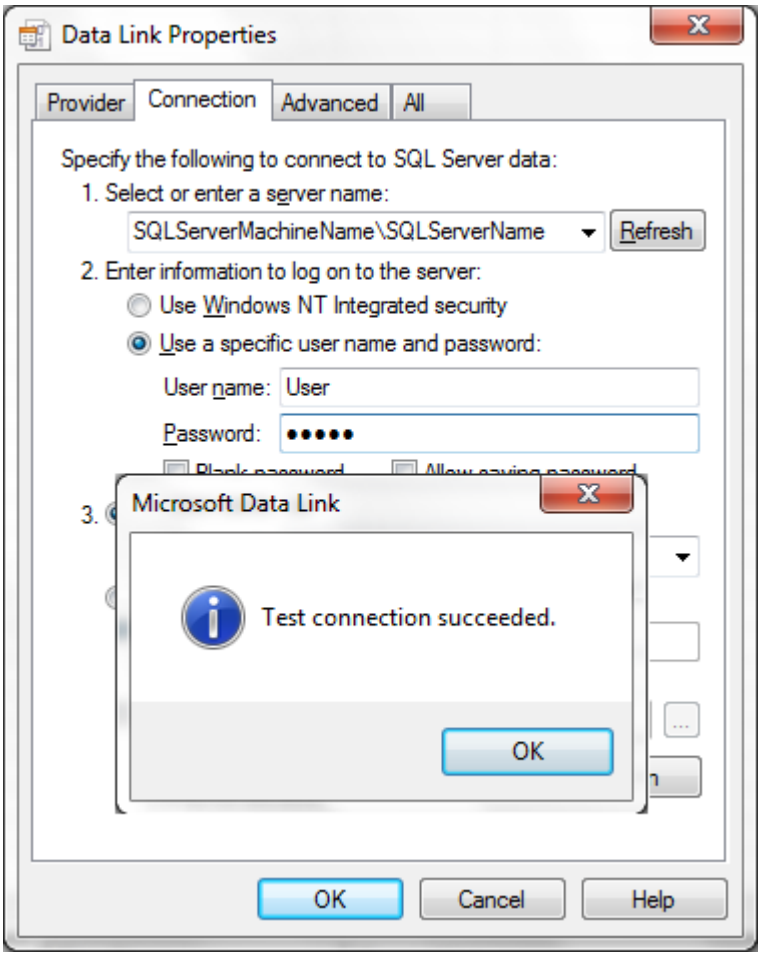


Figure 73: Testing New Historian

After selecting the type of provider to use, the user must configure the connection string to be used by entering the necessary information. (The user can press the **Test Connection** button to test this connection string). After this, press the **OK** button and a dialog screen will appear:

Figure 74: New Historian

At this stage, this dialog screen allows users to:

1. View the connection string already configured at the **Connection String Text Box.**
2. Type the login name and password to be used with this Ado Database.
3. A name to identify this new Ado Database. This name must be unique.

When the user presses the **OK** Button, a dialog screen will appear:

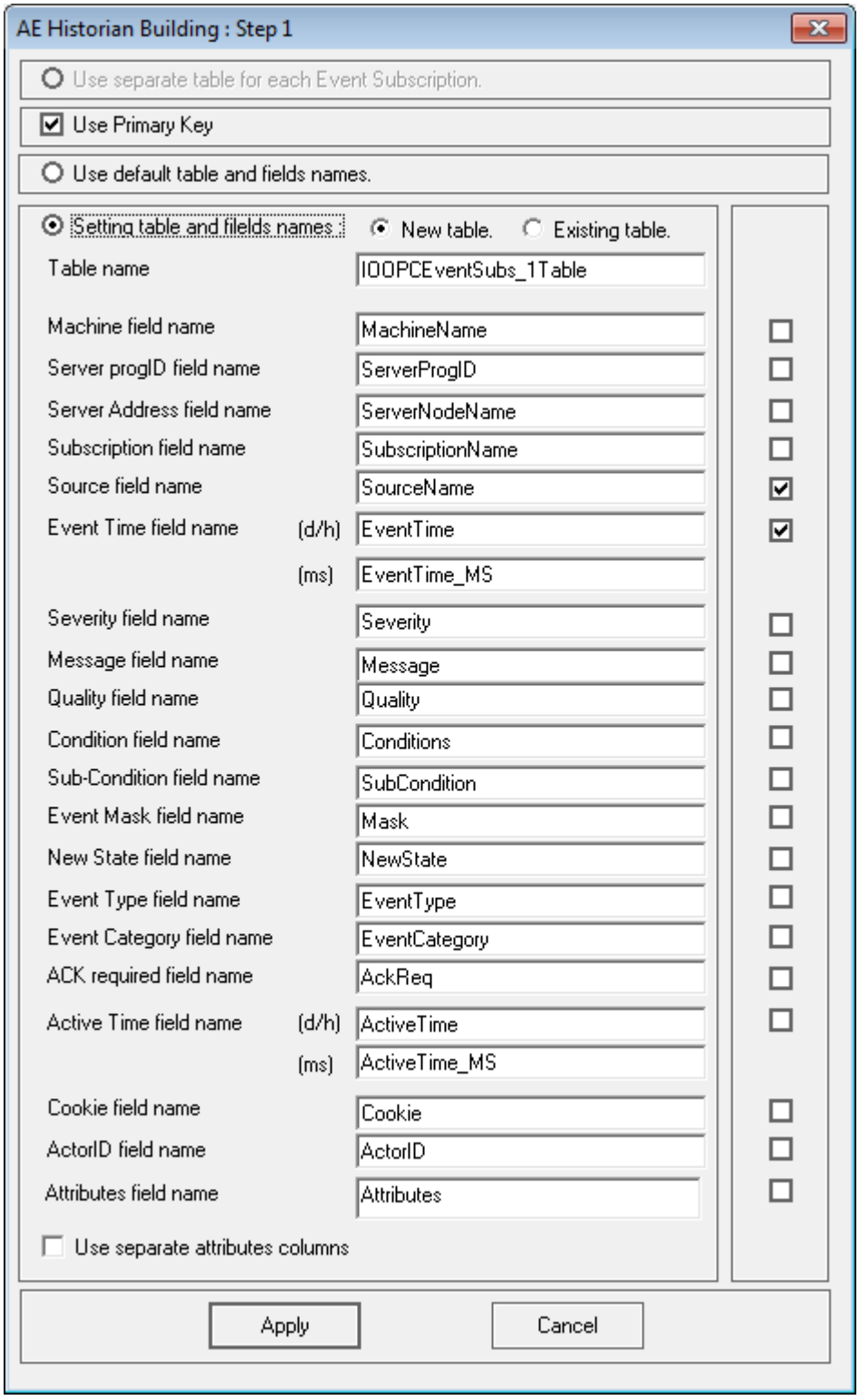


Figure 75: Configuring New Historian

This dialog screen provides the user with the ability to manage the table and field names for the newly created ADO connection.

At this step, the user has to choose the storage mode to be used by the Archiver:

- Use one historian table for each event subscription: To use this option, the user has to select the "**Use separate table for each Event Subscription**" option. Then, click the **Apply** button.
- Store all alarms in the same historian table: In this case, the user can choose one of the following methods-
  - Configure a new table: To configure the new table to be created, the user can-
    - Use the default table and field names. ("**Use default table and field names**" option should be checked).
    - Set its own table and field names. ("**Setting table and fields names**" and "**New table**" options should be checked).
  - Use an existing table. ("**Setting table and fields names**" and "**Existing table**" options should be checked).

When mapping your fields, if you check "Use separate attributes columns" check button, the AE Archiver will create separate columns in the designated historian table to store the vendor specific attributes.

When mapping the AE Archiver fields with the existing table fields, you should respect the following table:

Field Name	Required SQL Type
Machine name	Varchar
Server name	Varchar
Server address	Varchar
Event Subscription name	Varchar
Source name	Varchar
EventTime	Date/ time
EventTime millisecond	Integer
Severity	Integer
Message	Varchar

Quality	Varchar
Condition	Varchar
SubCondition	Varchar
Mask	Varchar
New state	Varchar
EventType	Varchar
Event Category	Varchar
Ack required	Varchar
ActiveTime	Date/ time
ActiveTime_MS	Integer
Cookie	Varchar
ActorID	Varchar
Attributes	Varchar

Table 3: Table Fields and Types

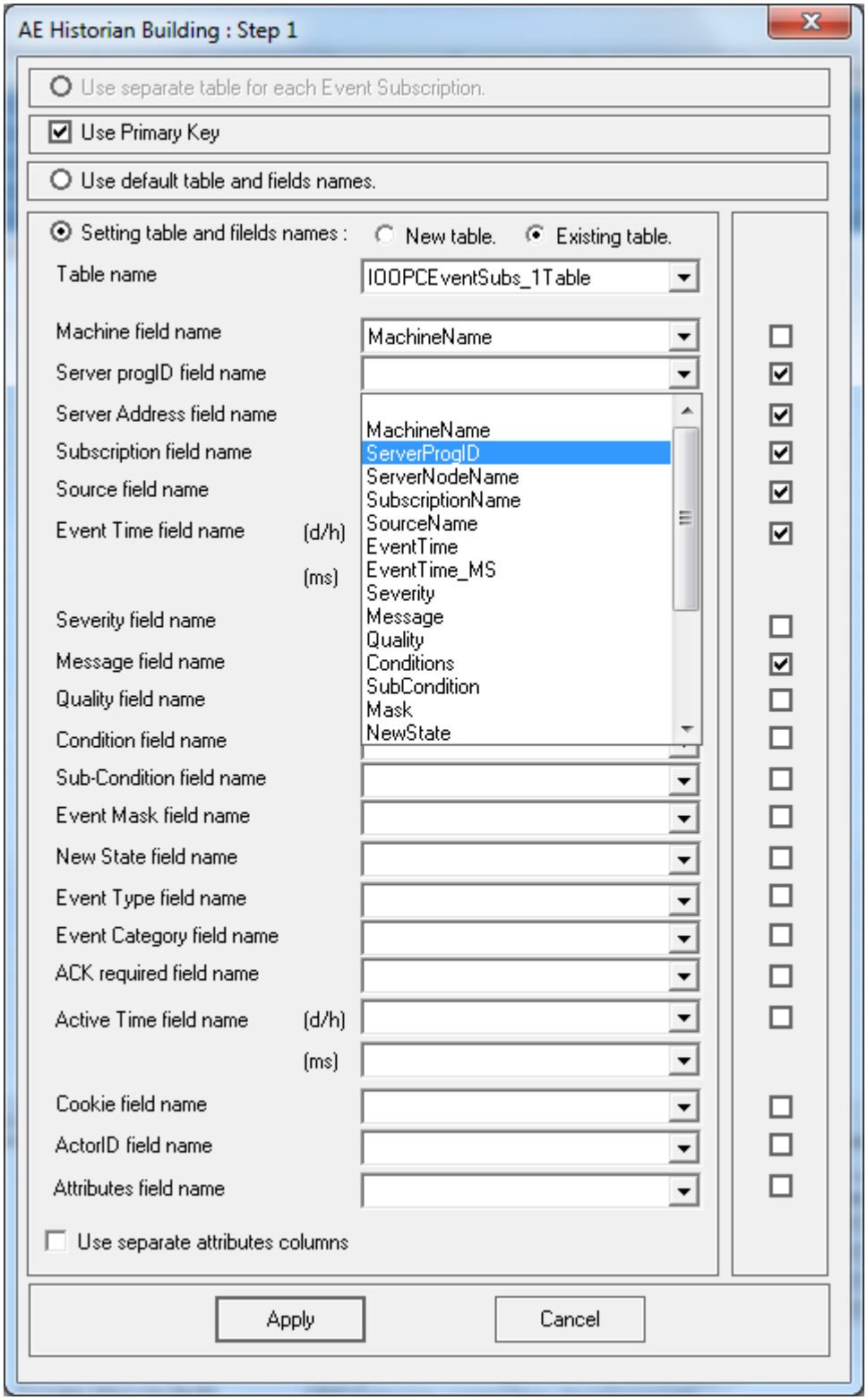


Figure 76: Setting Table and Field Names- Step 1

- If you want to use the primary key when the table is created, check the **Use Primary Key** button (uncheck this button to deactivate this option).

- If you choose to use the "**Use Primary Key**" option, you have to select the list of fields that compose the primary key.

If the user checks the "Use Primary Key" option, the list of fields to be used as the primary key must define a unique row for each alarm.

Example: If the user uses just a SourceName as a Primary Key, he will get a database error that mentions that a duplicate value in Primary Key is detected.

- Finally, click the **Apply** button.

At this stage, the new Ado Archiver is created and the Storage table will be installed.

The second step consists of the set-up of the AE Server static information tables:

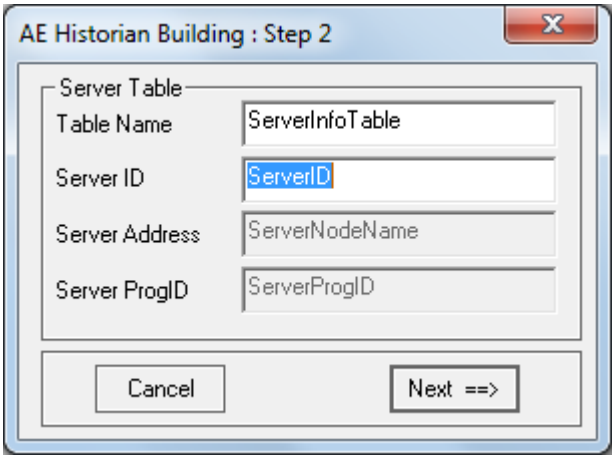


Figure 77: Setting Up Tables- Step 2

This table will contain all connected AE Servers.

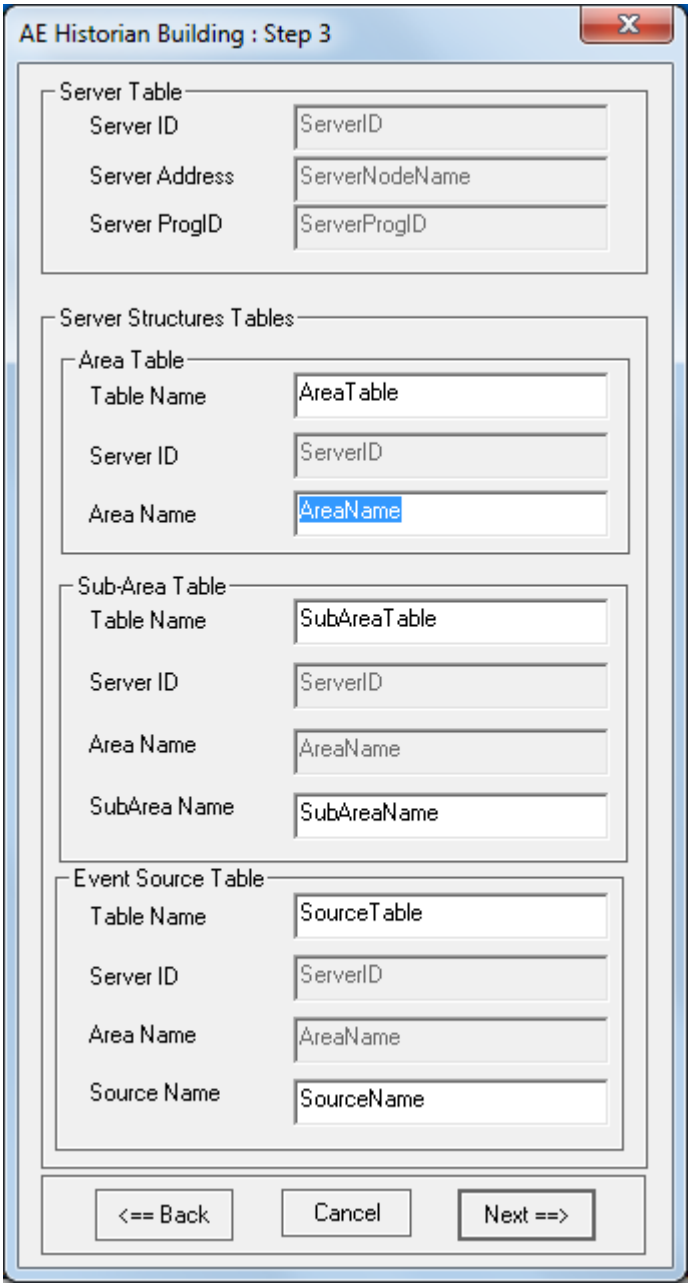


Figure 78: Setting Up Tables- Step 3

These tables will contain the server structure (area, sub area and sources) for each connected AE Server.

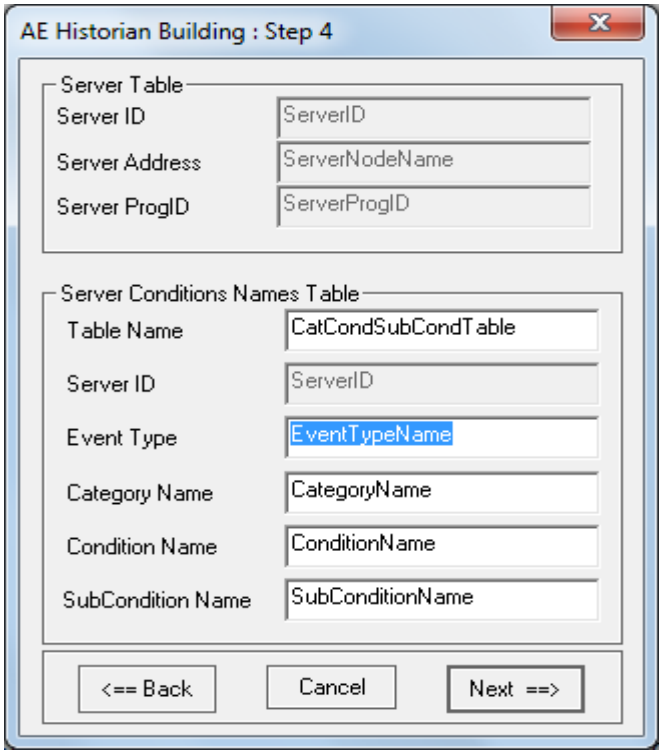


Figure 79: Setting Up Tables- Step 4

This table will contain the list of available categories, condition names and SubCondition names for each connected AE Server.

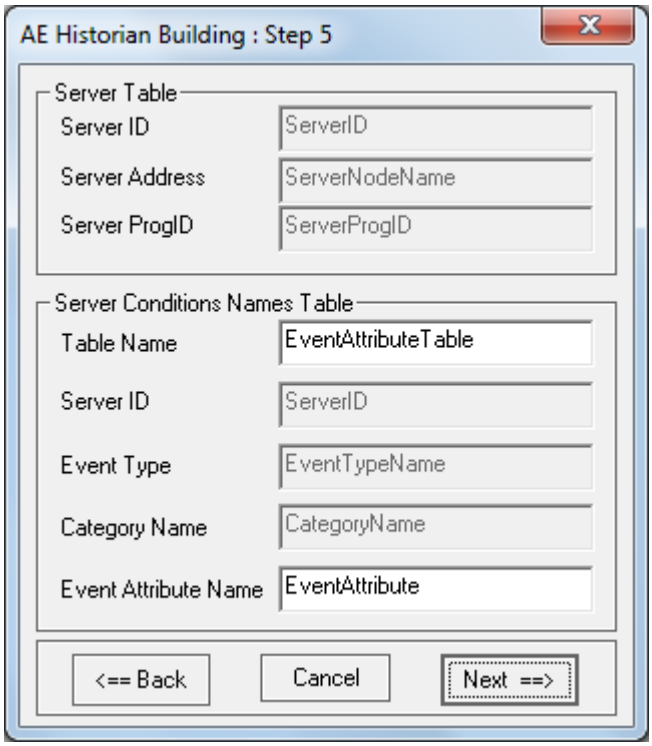


Figure 80: Setting Up Tables- Step 5

This table will contain the list of available event attributes.

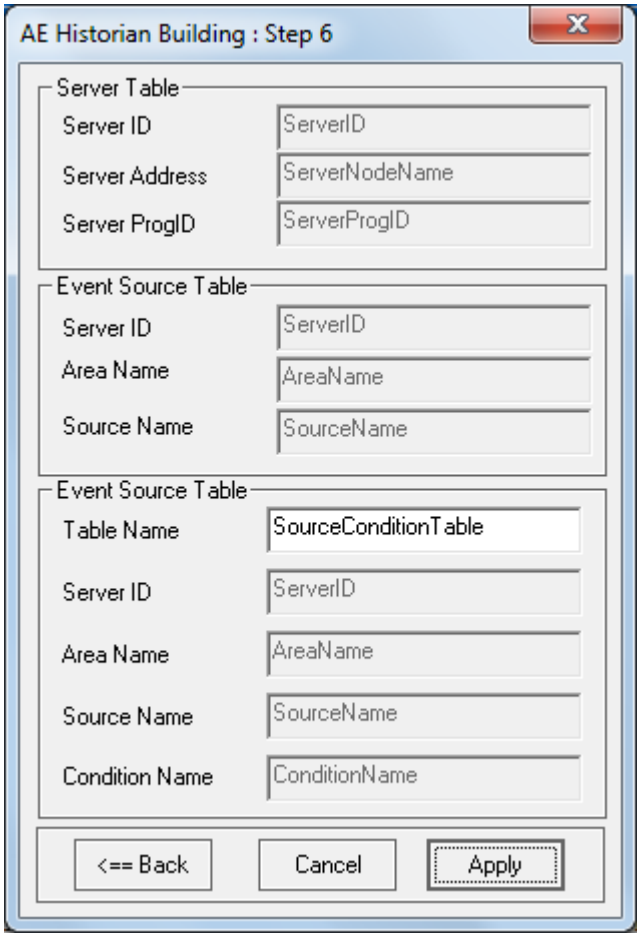


Figure 81: Setting Up Tables- Step 6

This table will contain the list of available Source condition names for each connected AE Server.

3.2. Adding ODBC Historian

To add a new ODBC Historian, the user can select:

- **Transfer, Config New Historian** and **ODBC** in the Menu bar.
- **Create ODBC Historian** button in the Toolbar.

A dialog screen will appear:

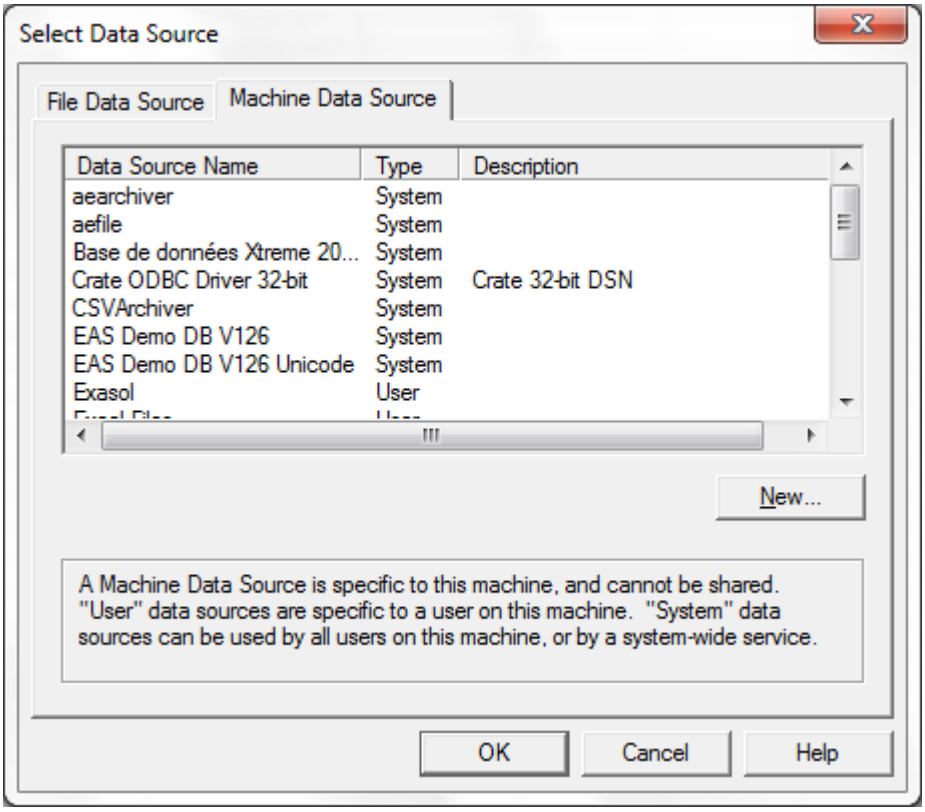


Figure 82: Select Data Source

To add a new ODBC Archiver, the user must start by choosing the Data Source Name to use with this new database, and then the user must press the **Next** button. A dialog screen appears:

Figure 83: Logging into New ODBC Historian

At this stage, this dialog screen allows the user to:

1. View the connection string already configured at the **Connection String Text Box.**
2. Type the login name and password to be used with this ODBC Database.
3. Create a name to identify this new ODBC Database. The name must be unique.

The connection to Cassandra DB can be successfully established via ODBC using the "ODBC;DSN=Cassandra;" connection string.

Figure 84: Logging into Cassandra Historian

When the user presses the **OK** Button, a dialog screen will appear:

Figure 85: Manage Table and Field Names

This dialog screen provides the user with the ability to manage the table and field names for the newly created ODBC Connection.

In this step, the user has to choose the storage mode to be used by the Archiver:

- Use one historian table for each event subscription: To use this option, the user has to select the "**Use separate table for each Event Subscription**" option. Then, click the **Apply** button.
- Store all alarms in the same historian table: To use this option, the user can choose one of the following methods-
  - Configure a new table: the user can-
    - Use the default table and field names. ("**Use default table and fields names**" option should be checked).
    - Or set its own table and field names. ("**Setting table and fields names**" and "**New table**" options should be checked).
  - Use an existing table. ("**Setting table and fields names**" and "**Existing table**" options should be checked).

When mapping your fields, if you check "Use separate attributes columns" check button, the AE Archiver will create separate columns in the designated historian table to store the vendor specific attributes.

When mapping the AE Archiver fields with the existing table fields, respect the following table:

Field Name	Required SQL Type
Machine name	Varchar
Server name	Varchar
Server address	Varchar
Event Subscription name	Varchar
Source name	Varchar
EventTime	Date/ time
EventTime millisecond	Integer
Severity	Integer
Message	Varchar
Quality	Varchar
Condition	Varchar
SubCondition	Varchar

Mask	Varchar
New state	Varchar
EventType	Varchar
Event Category	Varchar
Ack required	Varchar
ActiveTime	Date/ time
ActiveTime_MS	Integer
Cookie	Varchar
ActorID	Varchar
Attributes	Varchar

Table 4: Fields Names and Types

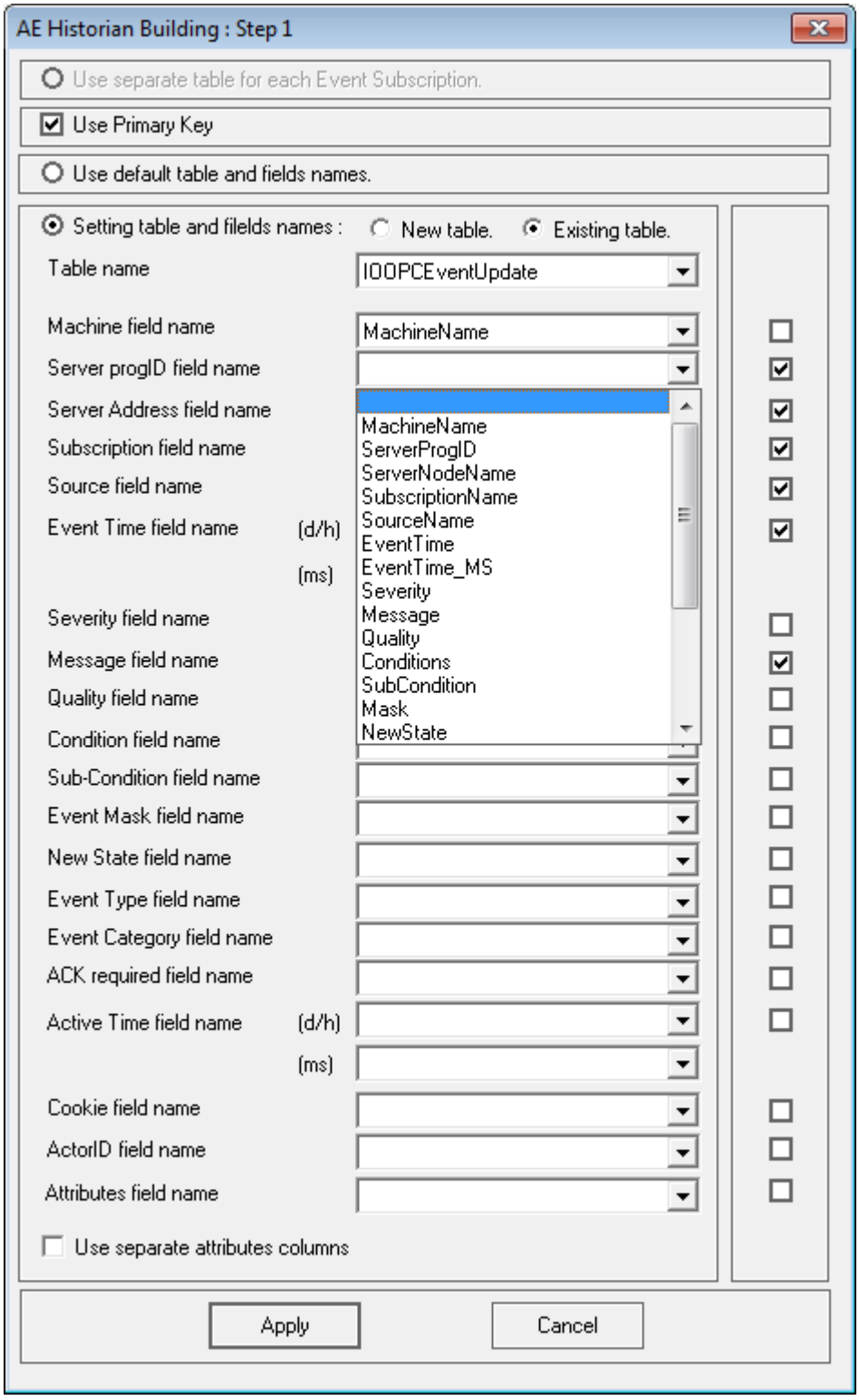


Figure 86: Setting Table Fields

- If you want to use the primary key when the table is created, check the **Use Primary Key** button (uncheck this button to deactivate this option).

- If you choose to use the "**Use Primary Key**" option, select the list of fields that compose the primary key.

If the user chooses to use the Primary Key option, the list of fields to be used as the primary key must define a unique row for each alarm.

Example: If the user uses just a SourceName as the Primary Key, he will get a database error that mentions that a duplicate value in the Primary Key is detected.

- Finally, click the **Apply** button.

At this stage, the new ODBC Archiver is created and the Storage table will be installed. The second step, like with the Ado Archiver, consists of setting the server static information's tables.

3.3. Adding CSV Historians

To add a new CSV Historian, the user should follow these steps:

- Select **CSV** from (**Transfer-> Config New Historian**) Menu.

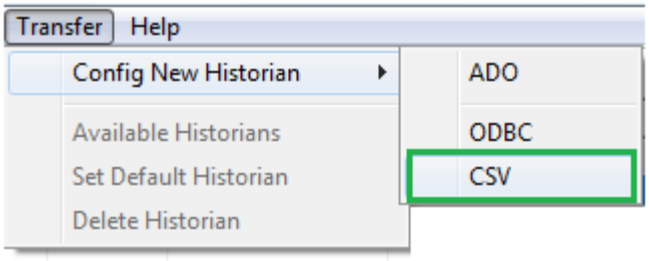


Figure 87: Select CSV Archiver

- Select Machine Data Source from **Select Data Source** window then click **New** button.

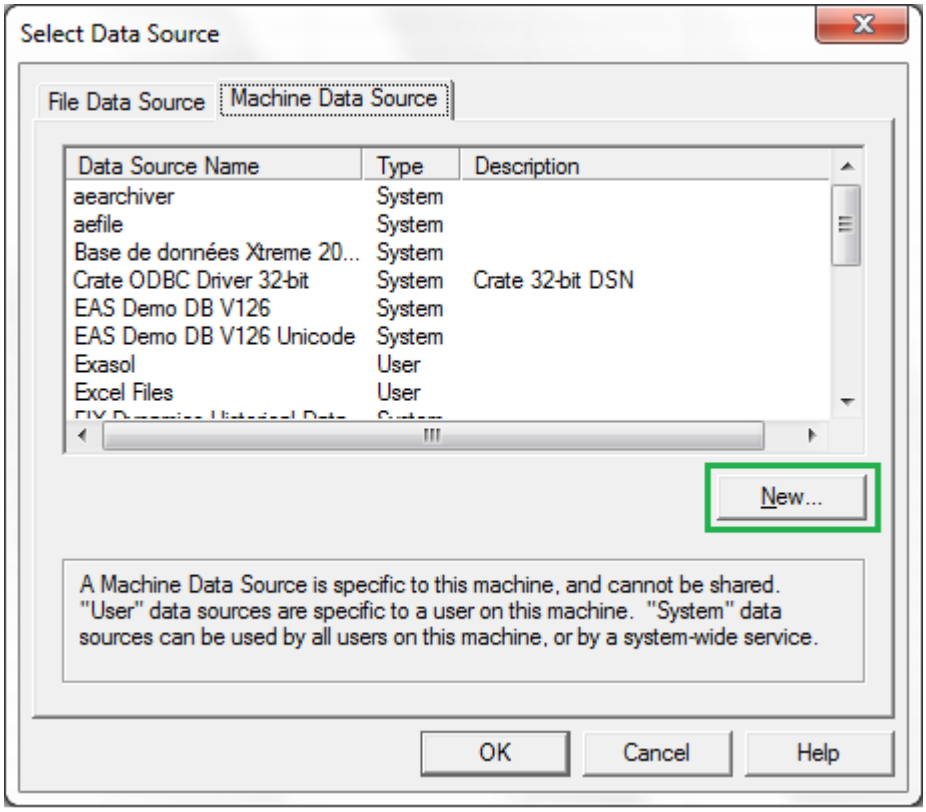


Figure 88: Create New Data Source

- Create a new **System Data Source** using **Microsoft Access Text Driver (*.txt, *.csv)**.

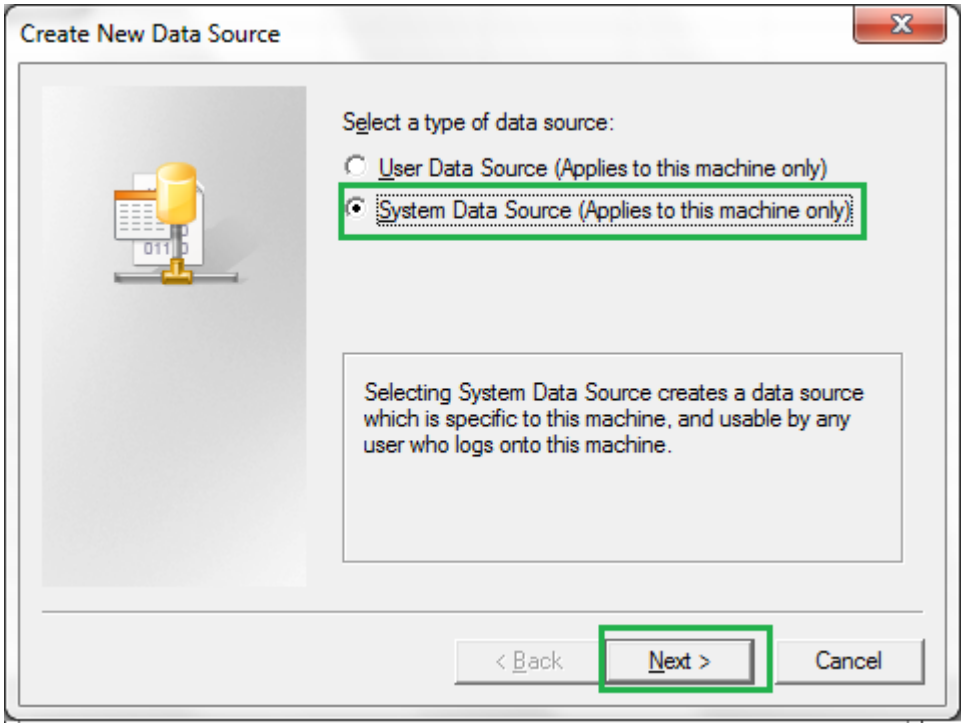


Figure 89: Select System Data Source

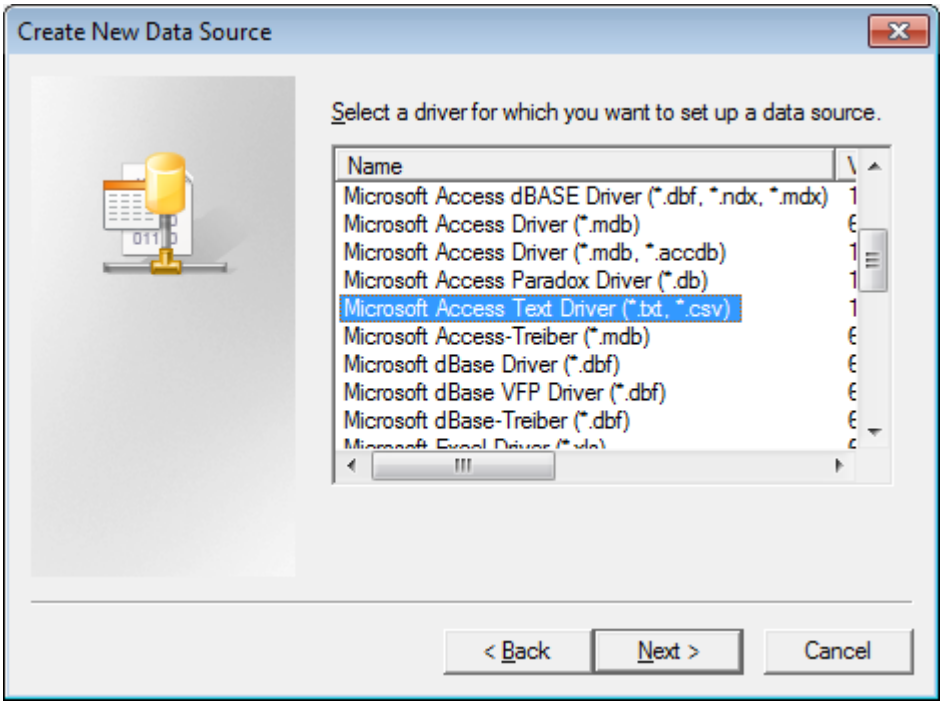


Figure 90: Select the CSV Data Source

- Click **Next** then **Finish** button.
- Enter the Data Source name and uncheck the “User Current Directory” checkbox to specify the CSV file directory in **ODBC Text Setup** window then click **OK** to save the changes.

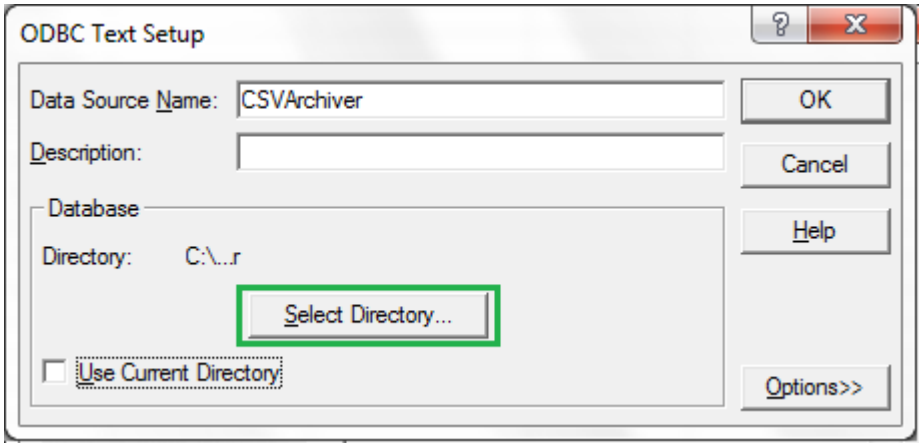


Figure 91: Data Source Parameters

- Select the CSV file directory

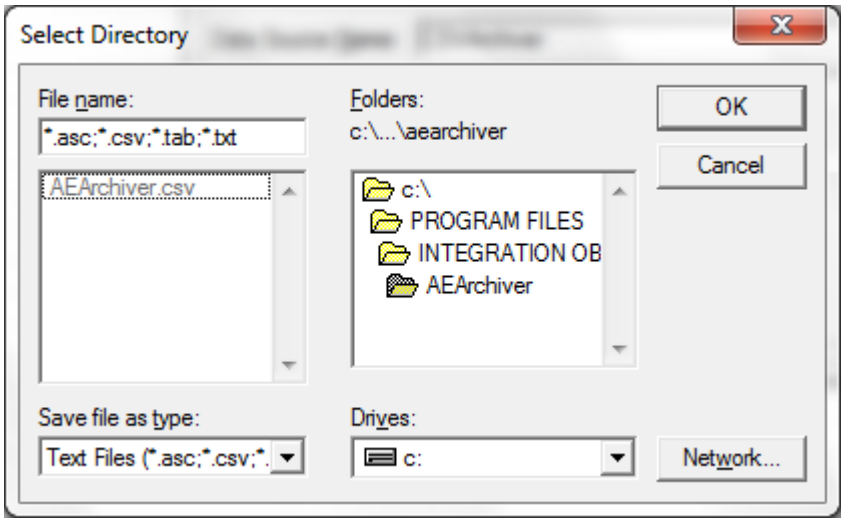


Figure 92: Select the CSV File Directory

- Once the Data Source is configured, the user needs to select it and click **OK** button.

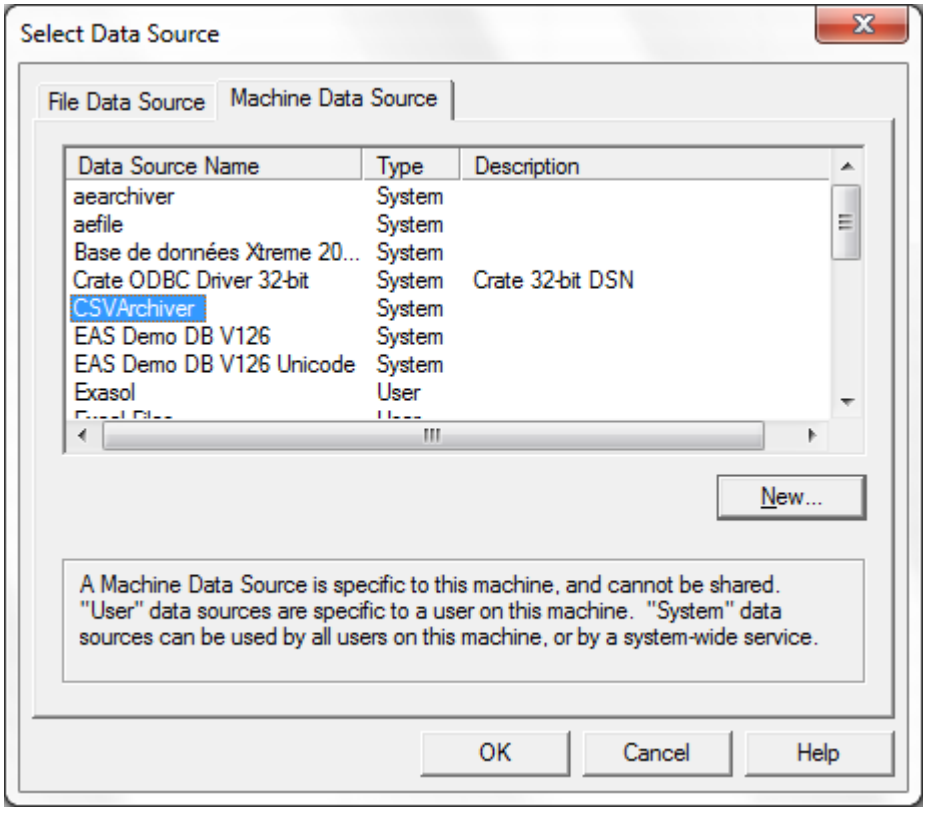


Figure 93: Select the Data Source

- Select the CSV file from the displayed window

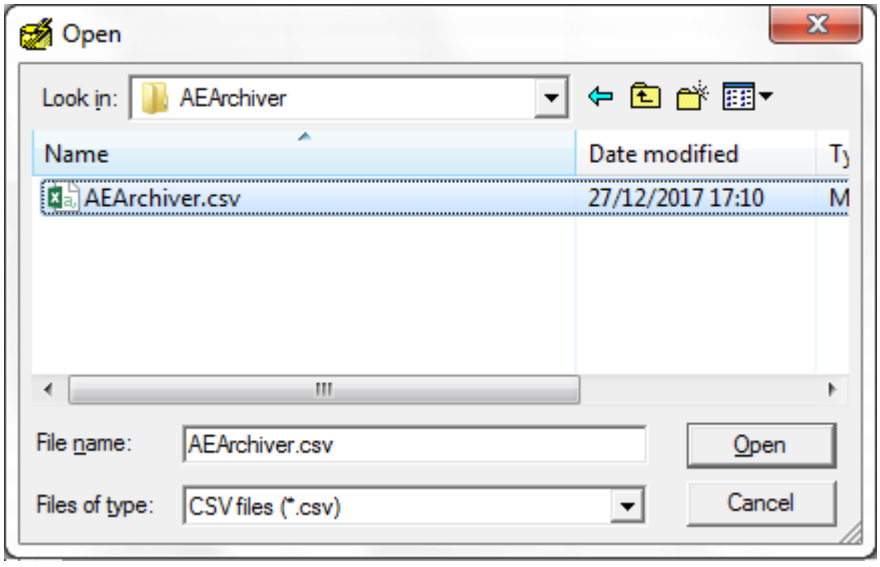


Figure 94: Select the CSV File

After specifying the CSV file, the user should in this case configure the archive process from the displayed **CSV Archiver Configuration** window:

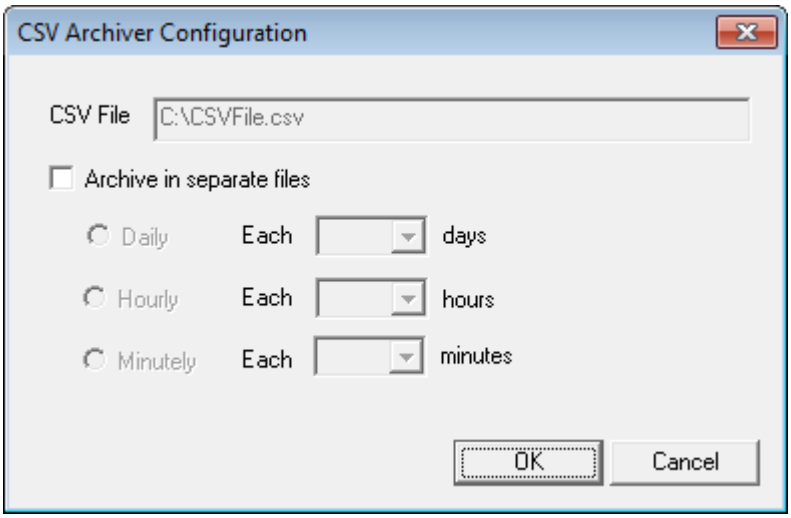


Figure 95: CSV Archiver Configuration

Parameter	Description	Default Value
CSV File	The CSV file full path	
Archive in separate files	Checked: Archive OPC alarms in separate CSV files according to the defined periodicity(Daily or Hourly or Minutely) Unchecked: the OPC alarms are stored in the specified CSV file. Once the size limit is reached the old CSV file is copied to an intermediate CSV file with incremental extension, before being overwritten.	Unchecked
Daily	A new CSV file is created for each defined day period.	0 (day)
Hourly	A new CSV file is created for each defined hour period.	0 (Hour)
Minutely	A new CSV file is created for each defined minute period.	0 (Minute)

Table 5: CSV Archiver Configuration Parameters

- Once the CSV Configuration is done, the user should click OK to proceed.
- Uncheck **Use Primary Key** from AE Historian Building: Step 1 window then click **Apply** button then proceed with the configuration steps.

Figure 96: Uncheck the User Primary Key Check Box

The OPC AE Archiver incorporates a configuration file “ConfigCSVFile.ini” which includes several parameters. These parameters have default settings and can be changed at start-up by editing the configuration file.

To change this file:

1. Open ConfigCSVFile.ini in a text editor.
2. Edit any of the parameters listed in the following tables:

File Setting	Description	Default Value
CSVFileMaxSize	The maximum CSV file size, in bytes. Once this size is reached during run-time, the CSV file is overwritten.	1048576*2 ~ 2 Mb (MegaByte)
ArchiveLast	TRUE: Old file is copied to an intermediate file with incremental extension, before being overwritten. FALSE: Any pre-existing CSV file is erased and overwritten at start-up.	FALSE
CSVListMaxSize	The maximum number of alarms to be collected before archiving them in the csv file	10

Table 6: INI CSV Configuration File Parameters

3.4. Available Historians

To view the list of available Historians, the user can select:

- **Transfer,** then **Available Historians** in Menu bar
- **View Available Historians** button in Toolbar.

A dialog screen will appear:

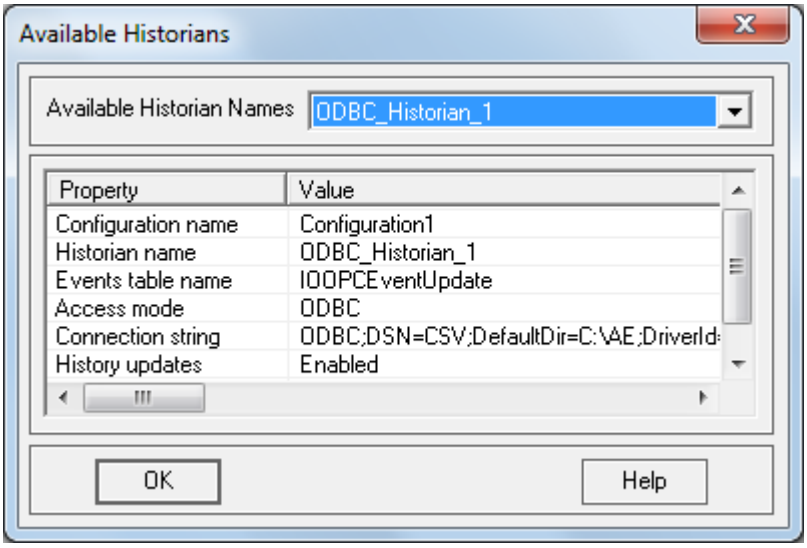


Figure 97: Available ODBC Historians

This screen gives the user the possibility of consulting the different available historians in the context of the currently open configuration. So, the user can select one historian name from The Combo Box (This Combo Box contains all available historian names for the currently opened configuration) to view the properties related to this historian.

3.5. Set Default Historian

To set the default Historian, the user can select:

- **Transfer, Set Default Historian** in Menu bar
- **Set Default Historian** button in Toolbar.

A dialog screen will appear:

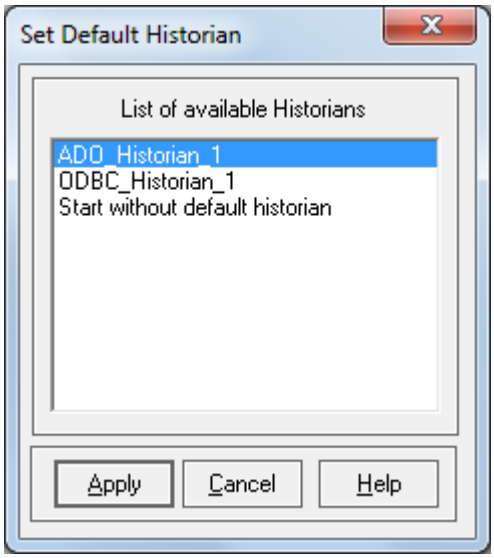


Figure 98: Set Default Historian

This screen gives you the ability to change the default historian related to the current configuration (the default configuration is the configuration, which launches automatically after the initialization of the software). To change the default, you must choose a historian name from the list mentioned.

When the user chooses "Start without default historian", the related configuration will start without the archiving process.

3.6. Remove Historian

To remove an existing Historian, the user can select:

- **Transfer**, then **Delete Historian** in the Menu bar.
- Then the **Delete Historian** button in the Toolbar.

A dialog screen will appear:

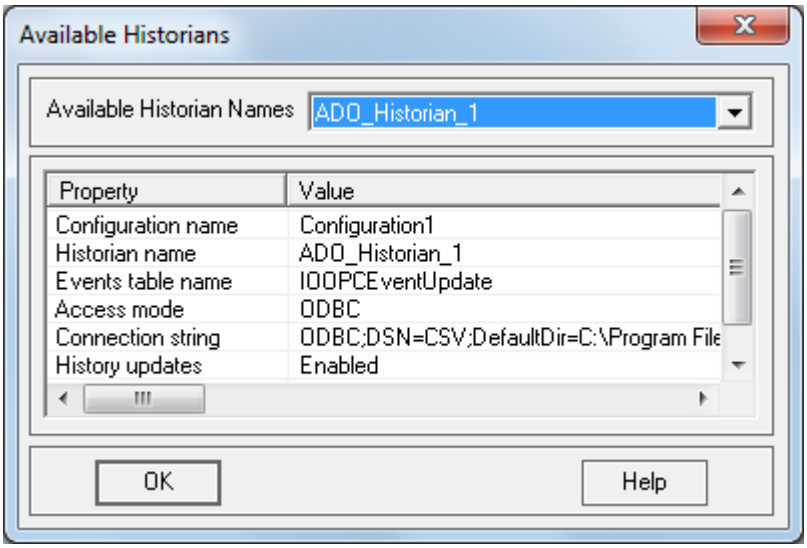


Figure 99: Delete Historian

This screen gives you the possibility to delete an existing historian "***ADO or ODBC***".

Historian Name: In the Combo Box, you find all historian names existing in the current open configuration. You must choose a name and press **Delete** in order to delete the historian.

3.7. Start Historian

To start the Historian, the user can click the **Start Historian** button in the Toolbar.

3.8. Stop Historian

To stop the Historian, the user can click the **Stop Historian** button in the Toolbar.

3.9. History Updates

Similar to the idea of Historical Data Access, the ***Alarms and Events Archiver*** can be used to store the history of variations in alarm characteristics. This enables clients to use this historic information in other applications like static applications.

To configure this option, the user must select:
Configuration Management, Default Historian Configuration, History Updates.

The **History Updates item** will be **checked**: The AE Archiver will work like an archiver for the Alarm characteristic changes.

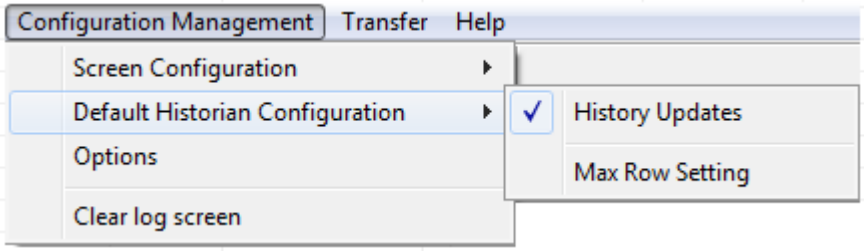


Figure 100: Enable History Updates

The user can remove the Explorer option by selecting:
Configuration Management, Default Historian Configuration, History Updates.

The **History Updates item** will be **unchecked**: ***The Alarms and Events Archiver*** option will be removed and the event notification recovered from the OPC Alarms and Events Server will not be stored in the Database.

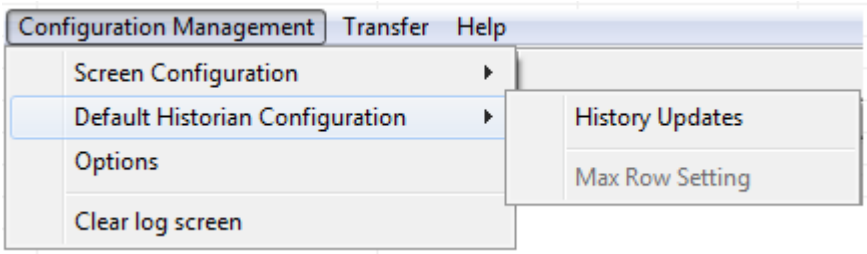


Figure 101: Disable History Updates

When the *History Updates* item is checked, the user can set the max row to use during the historic archiving. When the number of storage rows reaches the max row value specified by the user, a new Archiver will be created and will store the list of old alarm characteristics. If the max row is equal to 0, this option will be ignored.

4. DCOM Configuration

In order to retrieve data from OPC Servers in real time, the AE Archiver can be used in different configurations, including local and distributed configurations.

In local configurations, the ***AE Archiver*** and OPC Server(s) all run on the same computer. In that case, the installation process does not need any specific settings. **In distributed configurations, these components are executed on two or more computers cooperatively: the AE Archiver initially resides on a remote computer (Client Computer) and uses the DCOM mechanism to directly access servers.**

To enable this functionality, some settings are needed on both the remote server and the local client computer.

This section is intended to provide general guidance on proper DCOM Config Utility settings for computers on which the ***AE Archiver*** and OPC server(s) are running.

4.1. Client Side DCOM Configuration

Step 1: Setup Client machine with these instructions

1. Login as Administrator.
2. Choose the **Run** option from the Windows Start menu and type DCOMCNFG then click **OK** to run it.

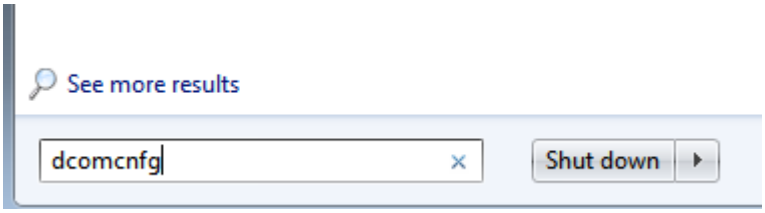


Figure 102: Initial DCOM Config

3. DCOM Configuration Properties- Default Properties tab:
   a. The **Enable Distributed COM on this computer** MUST be checked.
   b. The **Default Authentication Level** should be set to **Connect**.
   c. The **Default Impersonation Level** should be set to **Identify**.

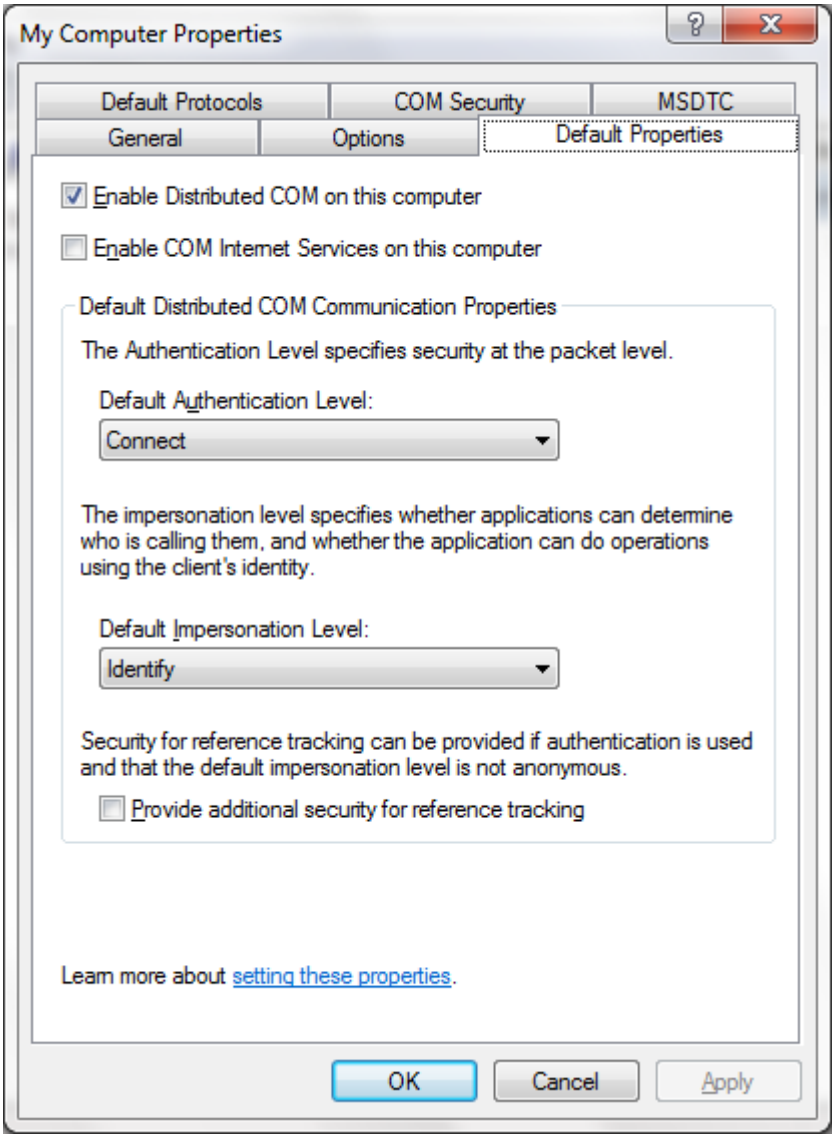


Figure 103: Default Properties Tab

4. DCOM Configuration Properties- Default Security Tab:

   It is on this tab that you tell the operating system who you will allow to access the **AE Archiver** from remote OPC servers. **Default Access Permissions** is the only setting we are concerned with on the client side of this tab.
   On the Default Access Permissions Dialog, you set who (users whose remote OPC servers are running here) will have access to make callbacks to this machine when subscription based reads are being done.

   No changes are normally required on the **Default Launch Permissions** and **Default Configuration Permissions** dialogs.

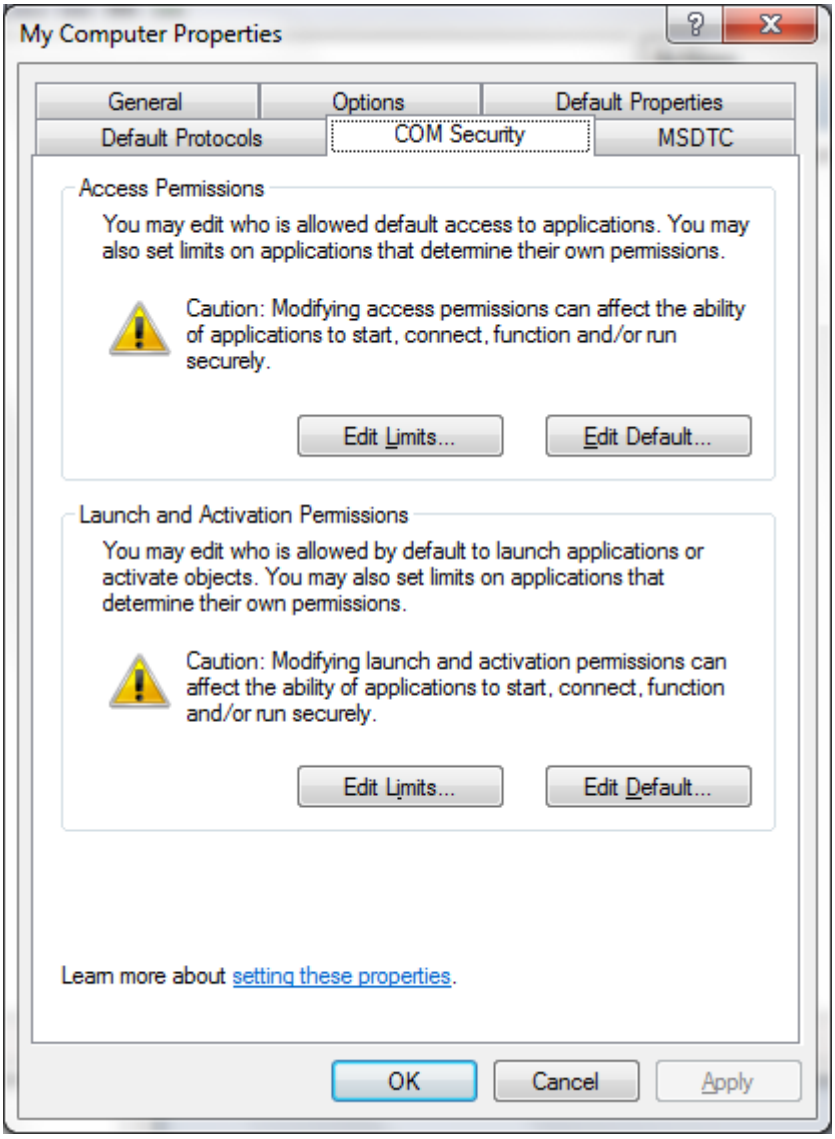


Figure 104: Default Security Tab

5. DCOM Configuration Properties- Default Protocols Tab:

   In this tab, you set which of the installed network protocols on the client computer to use for DCOM. You should use **Connection-oriented TCP/IP**.

Figure 105: Default Protocols Tab

Step 2: You need to register your OPC Server on the client computer by indicating its location on the named remote machine.

There are two ways of registering your OPC server on your client machine, depending on the client environment. Here are two methods:

1. Prepare and apply a customized **.reg** file on the client computer (See Microsoft registry documentation for details). We recommend this method only for users experienced with Windows Registry.
   You have to *export* the entries of your OPC server from the server machine registry to the client machine registry.

4.2. Server Side DCOM Configuration

There are 2 areas you will need to setup:

Step 1: Follow these instructions to make a default DCOM Configuration for your OPC Server Computer.

1. Launch the DCOM Config Utility on the computer where your target OPC Server is running.
2. Configure the Default Properties Tab as you did on the Client side.
3. DCOM Configuration Properties- Default Security Tab:
4. This tab has the most settings to make. It is on this tab that you tell the operating system who you will allow to access OPC servers on this machine (Default Access Permissions), who you will allow to launch OPC Servers on this machine (Default Launch Permissions), and who you will allow to configure OPC Servers on this machine (Default Configuration Permissions).
5. DCOM Configuration Properties- Default Security Tab- Default Access Permissions Dialog:
6. In the dialog on the right, when you click **Add,** you will be presented with a dialog that lets you browse the local machine and domain (if applicable and logged into a domain) for users and groups to grant permission to.
7. DCOM Configuration Properties- Default Security Tab- Default Launch Permissions Dialog:
8. It is here where you define who can actually start your OPC server on this computer. Adding of users/groups is done the same way as was done for Access Permissions.
9. DCOM Configuration Properties- Default Security Tab- Default Configuration Permissions Dialog: If you are setting up DCOM for the first time, it is not recommended to change the settings.
10. Configure the Default Protocols Tab as you did on the Client side.

Step 2: To make DCOM settings that are specific to your OPC Server, go to the Application Tab in DCOM Config and browse until you find the OPC Server of your choice. Highlight it and either double click on it or click **Properties** to enter the server specific settings.

1. On the General Tab, we recommend that you leave the **Authentication Level** to **Default**.

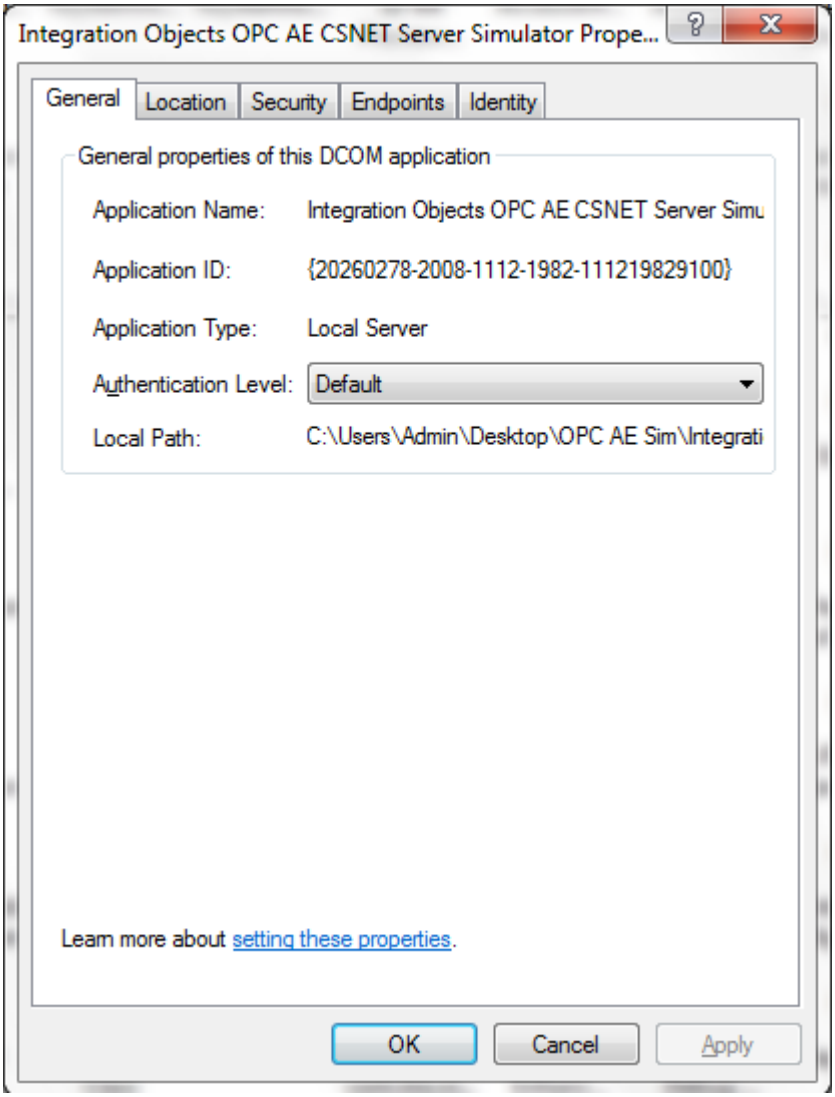


Figure 106: Server Side General Tab

2. On the Location Tab, make sure that **Run application on this computer** is the ONLY check box checked.

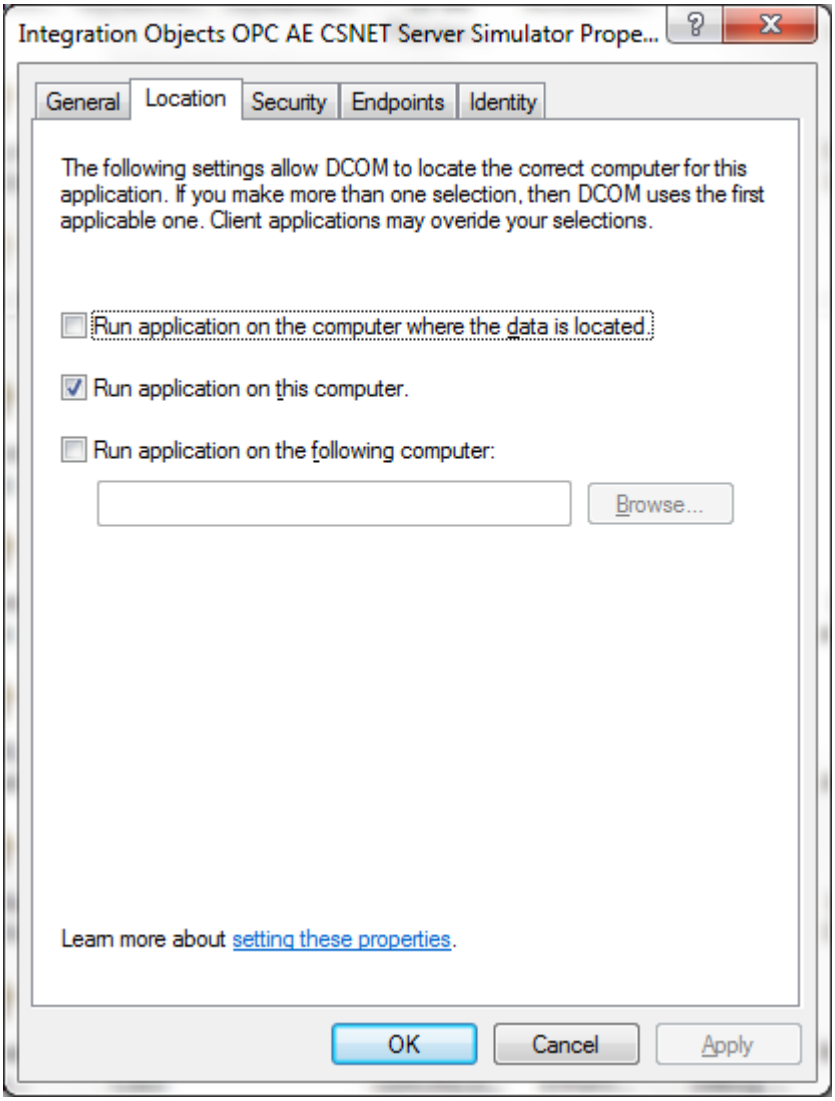


Figure 107: Server Side Location Tab

3. On the Security Tab, we suggest you select "Use Default access permissions" which means users/groups shown under the Default Security Tab in the DCOM Config utility will have access to connect to this specific OPC server. If you choose to use the custom permissions to override the defaults, specify which users/groups you wish to grant permission to.

   We also suggest that you use the Default Launch permissions. The same rules apply about using custom launch permissions here as they do for custom access permissions.

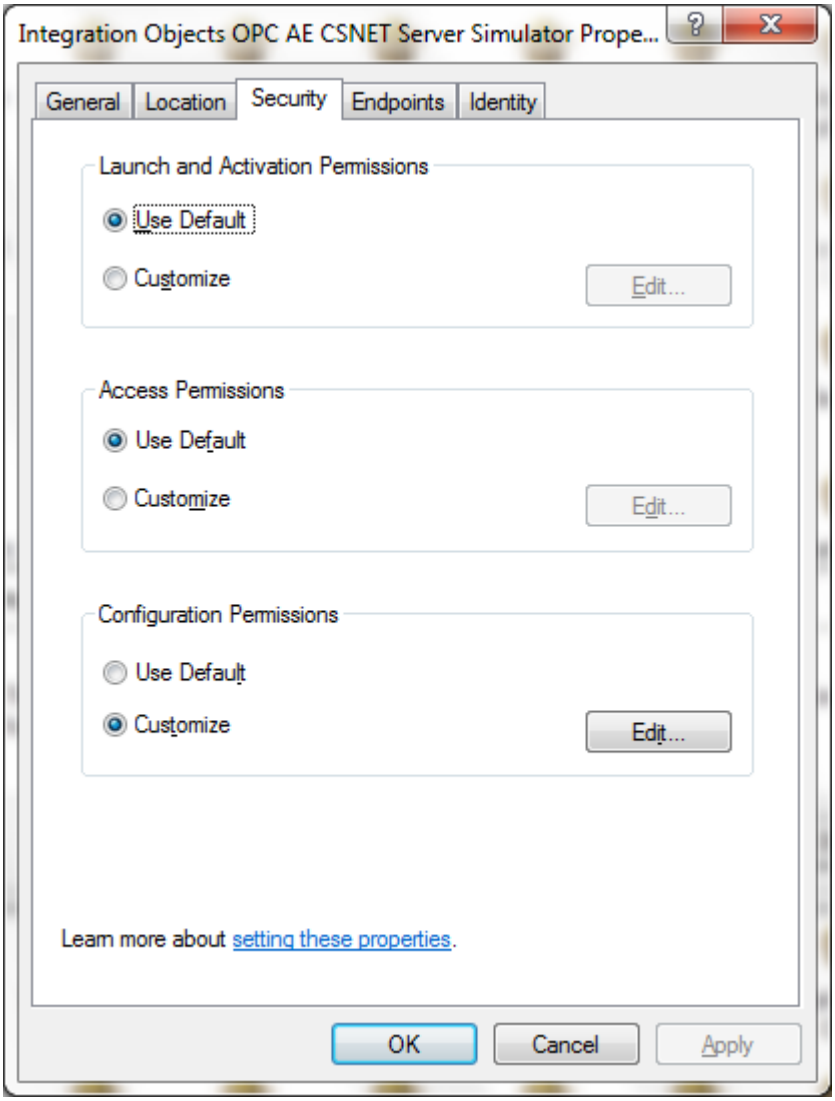


Figure 108: Server Side Security Tab

4. On the Identity Tab, specify under what user account you want the OPC server to run. This is probably one of the most important settings for the OPC server. The answer is very dependent on how you will be using your system.

No changes are required on the Endpoints Tab.

USING OPC AE ARCHIVER

1. Overview

The installation program for the **Archiver** is downloadable from the Integration Objects website. Run the installation program following these steps:

- Open Windows Explorer,
- Double-click on the program **setup.exe,**
- Follow the instructions presented by the installer.

To start the OPC AE Archiver: Click Start ➔ Programs ➔ Integration Objects ➔OPC Archiver ➔ OPC Alarms and Events Archiver

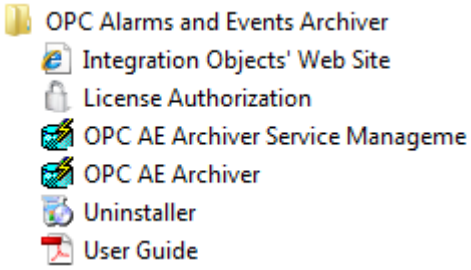


Figure 109: Launching OPC AE Archiver

2. Required Steps

In this section, we are going to provide a global view of the OPC Alarms and Events Archiver usage.

2.1. Step N°1: Create a New Configuration.

In order to create a new configuration, as it is mentioned in the section “Create New Configuration”, the user must start by creating the configuration, by attributing a unique name to it and by choosing the mode of authentication to use with this configuration.

2.2. Step N°2: Adding Servers to Control

After the configuration is installed, the user must add the servers to supervise. These servers will be stored in the context of the current open configuration.

2.3. Step N°3: Subscription Installation

After adding the servers to be controlled, the user can move to subscription installation and the setting of filters to be associated with these. At this stage, the user can see the event notifications returned by all added servers in the screen.

2.4. Step N°4: Historian Configuration

The storage of the event notifications are possible if the user configures the Historian to be used for the storage of this information. This configuration can be performed in two modes ADO or ODBC.

TROUBLESHOOTING

Case 1: Cannot launch the OPC AE Archiver

If you are using an evaluation license, you should check the license validity by launching the “LicenseAuthorization.exe” existing under the OPC AE Archiver installation folder.

You can also start it directly from the startup menu:

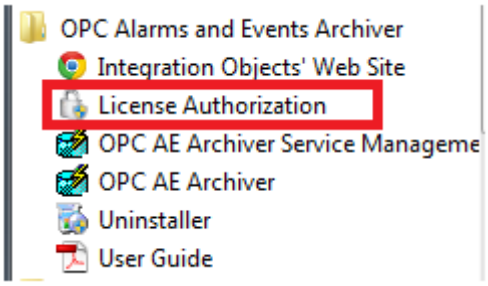


Figure 110: OPC AE Archiver Startup menu

If the License Authorization tool shows that, the demo has expired and you want to activate it using your full activation license, you should in this case follow these steps:

- Click on the Activation Codes button from the LicenseAuthorization.exe form

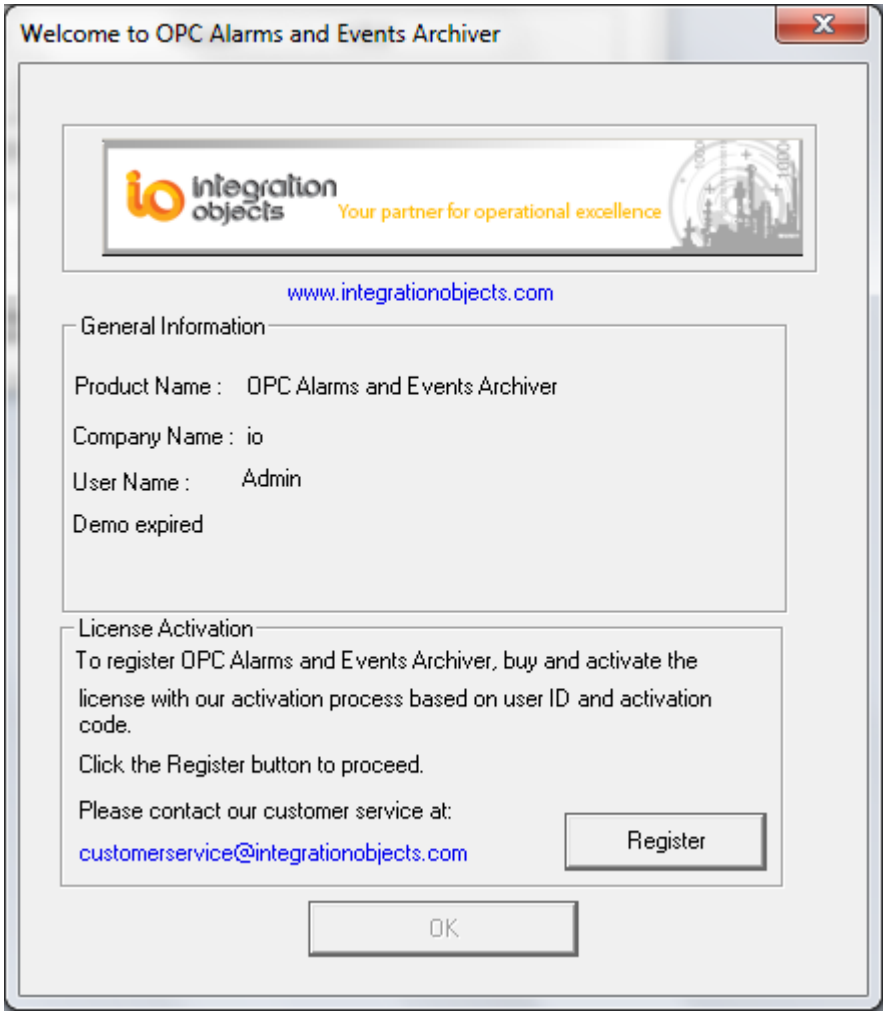


Figure 111: License Authorization (Demo Expiration Case)

- Copy and send the User ID to the sales team so they can generate the dedicated activation code.

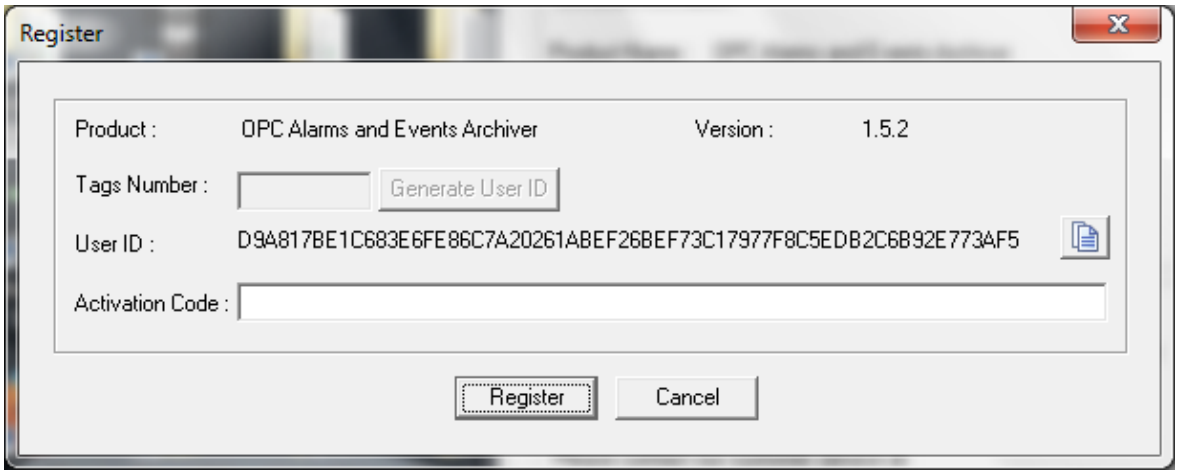


Figure 112: License Registration

Case 2: Cannot connect to a local OPC Server

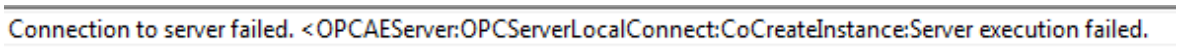


Figure 113: Connection to OPC AE Server error

You should check if the OPC Core Components are installed in your machine.
If they are already installed you should use the regsvr32 command as shown below to register them again:

Example (Windows XP)
/regsvr32 "C:\WINDOWS\system32\opcproxy.dll" (if your system drive is “C:”)
/regsvr32 "C:\WINDOWS\system32\opccomn_ps.dll"
/regsvr32 "C:\WINDOWS\system32\ opc_aeps.dll”.

You can also repair the installation OPC Core Components by running the setup for the second time.

Case 3: Cannot identify the OPC AE alarm status (ON or OFF)

The OPC AE alarm is considered ON when the New State value is equal to 1, 3, 5 or 7. For more details, refer to the OPC A&E specification.

Case 4: Unable to retrieve alarm attributes

To retrieve the attributes of an existing Event Subscription, you should right-click on the target OPC Event Subscription then select the **Select Returned Attributes** menu item.

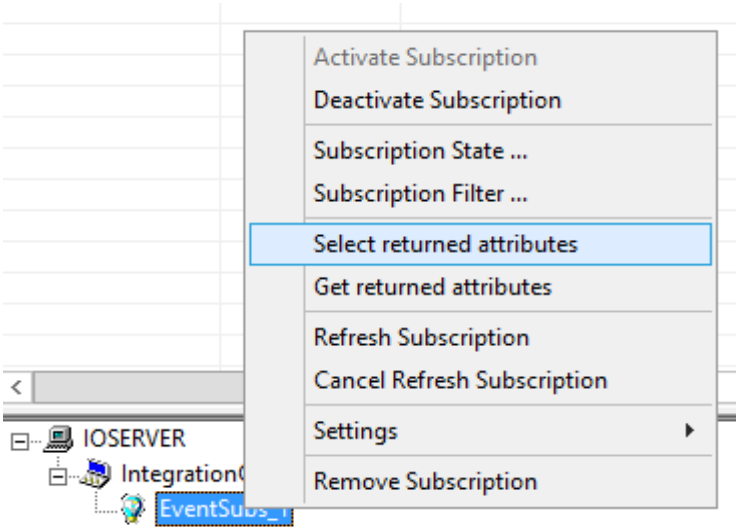


Figure 114: Select Returned Attributes

A dialog screen similar to the figure below appears:

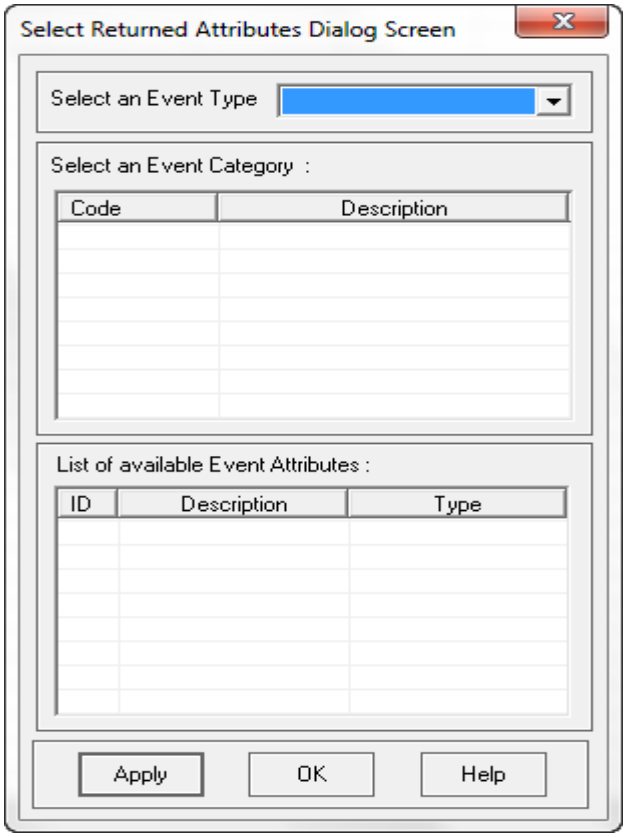


Figure 115: Select Returned Attributes Dialog (1/3)

Select an Event type from the drop down list. The list of related Event Categories will be displayed.

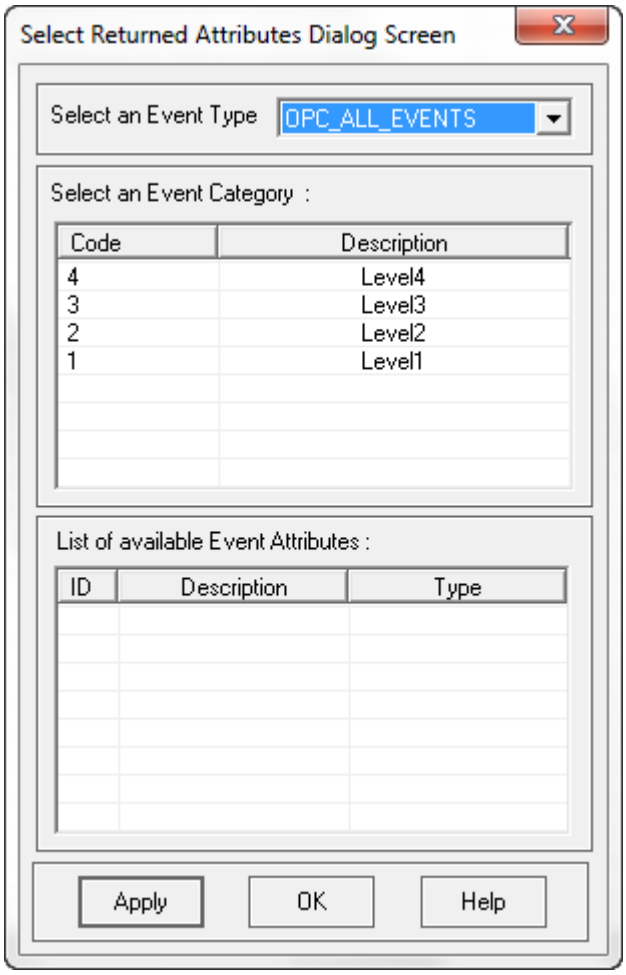


Figure 116: Select Returned Attributes Dialog (2/3)

When you select an Event category and double click on it, the list of available event attributes will be displayed.

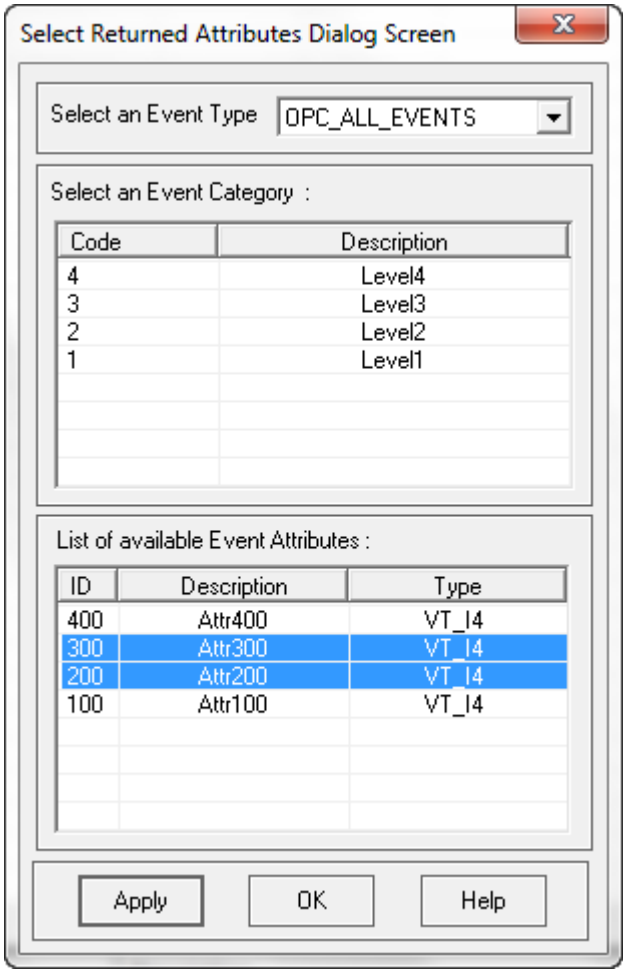


Figure 117: Select Returned Attributes Dialog (3/3)

You can select one or more attributes by pressing the "ctrl" or “shift” key from the keyboard and select your attributes. Then, click the Apply button.

Case 5: Unable to create an archiver

If you are not able to create an archiver, check that you:

- Installed the required client and SGBD driver,
  For example, in order to connect to the Oracle database, you need to install oracle client in the client machine where you installed the OPC AE archiver.
- Entered the correct connection string,
- Entered a historian name that is not already in use,
- Entered a table name that does not already exist in the database.

Case 6: You need to archive vendor specific alarm attributes under the same attributes column

Starting from the 1.1.0 version, we included a new feature for vendor specific attributes.

This feature allows archiving the retrieved OPC AE Server attributes in different attributes columns.
When you uncheck “Use separate attributes columns” in the AE Historian configuration step, all the AE attributes will be archived in the same “Attributes” column separated with “;” character.

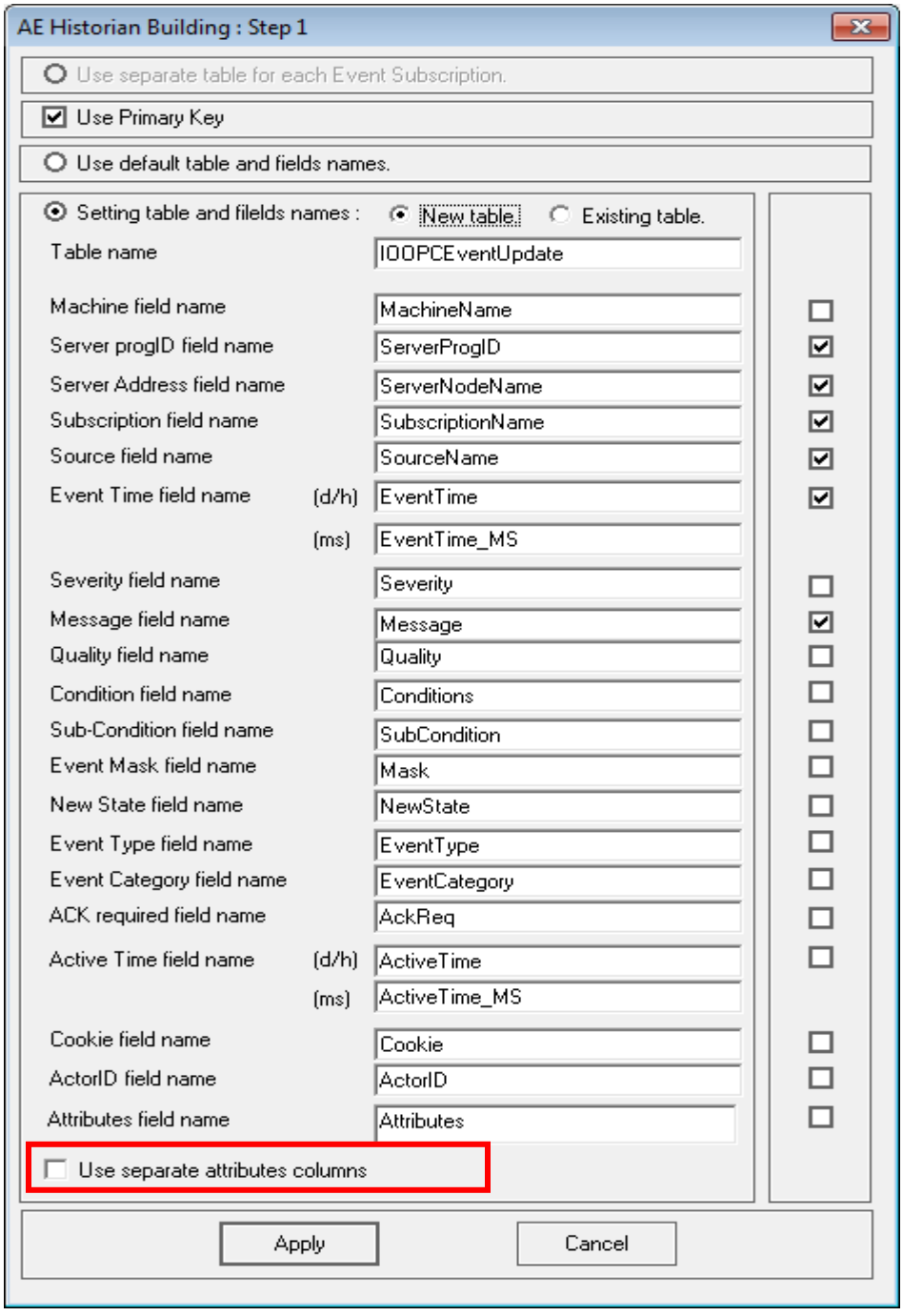


Figure 118: Configure AE Historian

When check the highlighted check button, the OPC AE Archiver will create in this case n separate columns.

n represents the selected returned attributes number.

Case 7: The OPC AE Archiver is not archiving AE alarms data after log off or machine restart

Check the following:

1. Make sure that the OPC AE Archiver service is installed and running
2. Configure the default configuration. To do this you should follow these steps:
   - Select File then Set Default Configuration in the Menu bar.
   - Or click the Set Default Configuration icon in the Toolbar.

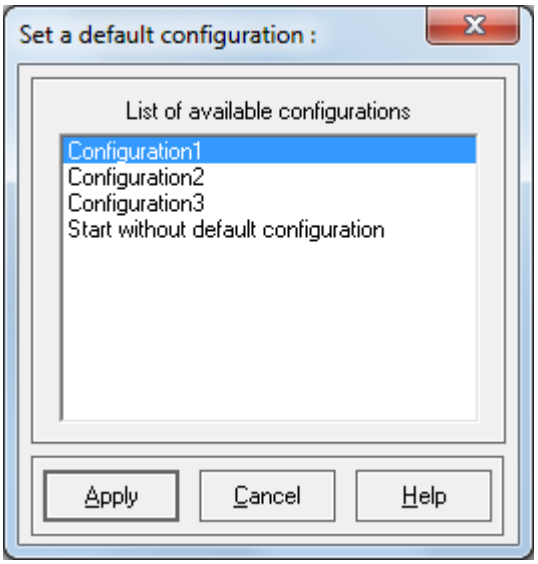


Figure 119: Set Default Configuration

3. Select the configuration to be set as default and click the **Apply** button.

4. Select the suitable **Configuration Name** from the “Set a default configuration” window.
5. Restart the OPC AE Archiver service.

Case 8: Data are not archived in the new configured historian table.

You need to set the new configured historian as default in order to archive data. To do so, follow these steps:

1. Go to the Transfer menu and select set default historian

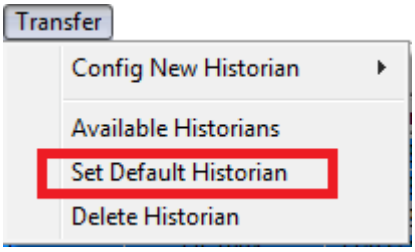


Figure 120: Set Default Historian Menu Item

2. Select the historian from the displayed window and click the apply button to save your changes.

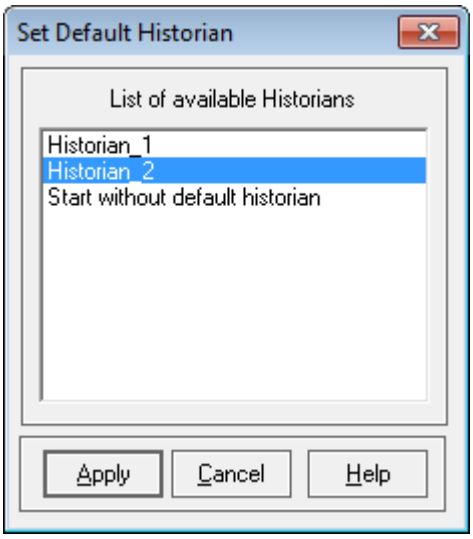


Figure 121: Set Default Historian Dialog

FREQUENTLY ASKED QUESTIONS

1. How can I acknowledge an event?

You can acknowledge automatically one or more conditions. To do this, you should proceed as following:

- Double-click on the specified source name from the screen browser (The AE Archiver will acknowledge the related condition with the "**AEArchiver**" ActorID).

Condition	SubCondition	Mask	NewState	Event Type	Event Category	AckReq	Active Time	Cookie	Actor ID
PVLEVEL	LOLO	OP...	2	OPC_CONDITIO...	Level1	FALSE	21/05/2018 15:41...	138709...	AEArchiver
DEVIATION	DEVIATION	OP...	2	OPC_CONDITIO...	Level2	FALSE	21/05/2018 15:41...	138714...	AEArchiver

Figure 122: Event Acknowledgment

- Right-click on the specified source name from the screen browser, a menu will appear:

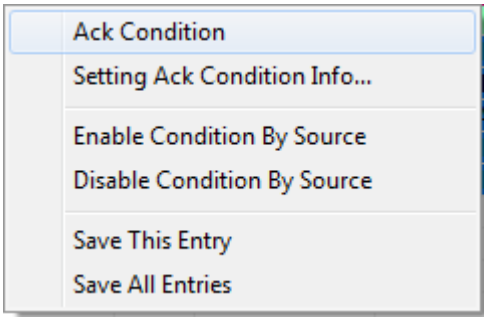


Figure 123: Acknowledgment Strip Menu

- Choose Ack Condition, a dialog screen will appear:

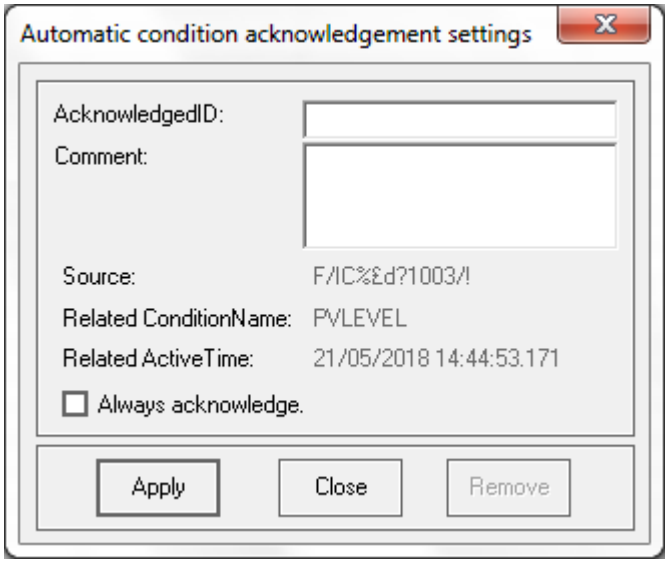


Figure 124: Automatic Condition Acknowledgment Settings

AcknowledgedID: A string passed in by the client, identifying who is acknowledging the conditions.
Comment: Comment string passed in by the client associated with acknowledging the conditions.
Source: Identifies the source of each condition that is being acknowledged.
Related ConditionName: Identifies each condition that is being acknowledged.
Related ActiveTime: This parameter uniquely identifies a specific transition of the condition to the active state or into a different sub-condition and is the same as the SubCondLastActive condition attribute.
Always acknowledge: If this option is checked, the AE Archiver will automatically acknowledge the related condition name when it is necessary.

2. Do I lose my history if I stop or uninstall the AE archiver?

No, your Alarms and Events history will not be lost, when you stop or uninstall the AE archiver.

3. Can I connect to multiple servers using OPC AE archiver?

Yes, the OPC AE archiver gives you the opportunity to connect to multiple servers.

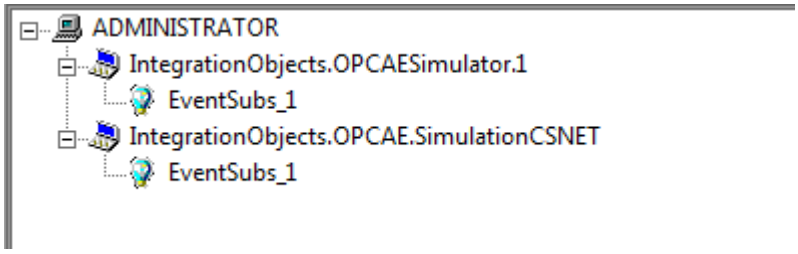


Figure 125: Connect to Multiple Servers

4. Can I archive real-time data using this archiver? If not, how can I do it?

The OPC AE archiver is designed to archive Alarms and Events. If you want to archive real-time data using an OPC DA interface, you can use the OPC DA Archiver or OPC EasyArchiver.
You can find more details about our archivers under the following URL:
https://integrationobjects.com/opc-products/opc-data-archiving/

5. Does the AE archiver support ODBC?

Yes, the OPC AE archiver supports ODBC. To connect to a database using ODBC, follow these steps:

- Select Transfer, Config New Historian and ODBC in the menu bar.
- Create ODBC Historian button in the toolbar.

6. How can I setup filters on the received events?

To setup a filter for an event subscription, right-click to the subscription and select "Subscription Filter" menu item.
A similar dialog screen appears:

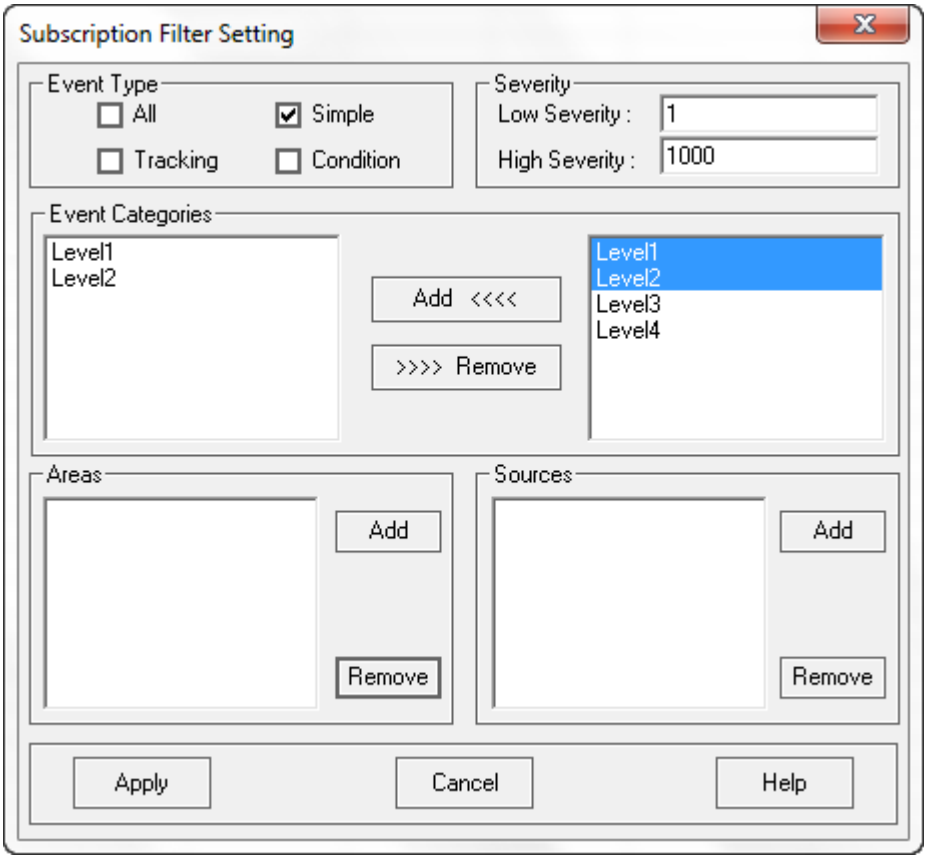


Figure 126: Subscription Filter Setting Dialog Screen

In the Subscription Filter Setting window, you can select multiple criteria to setup the filter.

To add an event Category, select it and click the Add button in the Event Categories section.

To add an area, click the Add button in the Areas section, a dialog similar to the below appears:

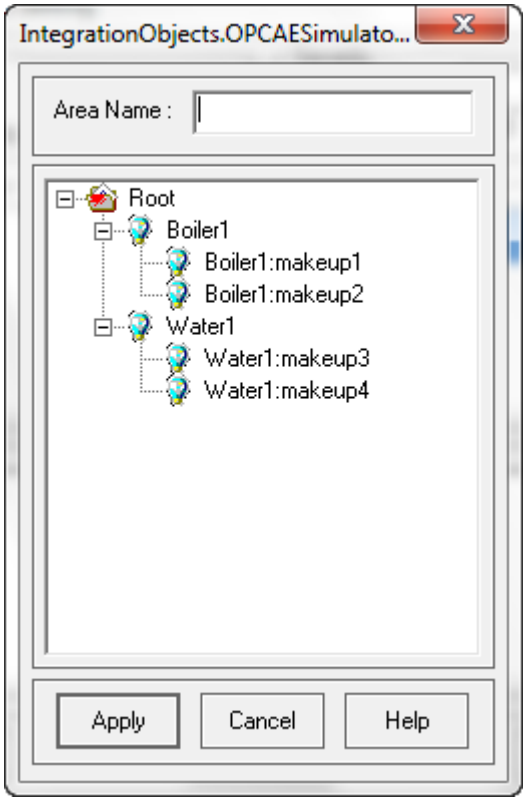


Figure 127: Area Browser

You can add an area manually by entering the area name or by selecting one from the areas tree.

To add a source, click the Add button in the Sources section, a dialog similar to the below appears:

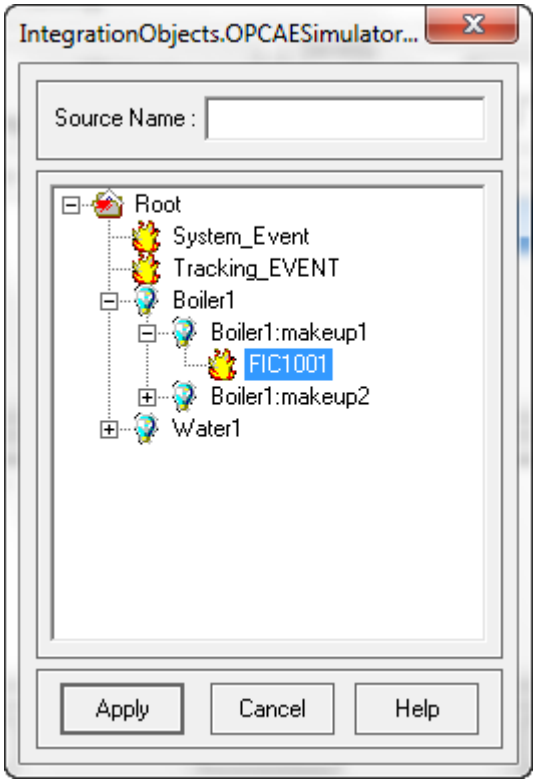


Figure 128: Sources Browser

You can add a source manually by entering the source name or by selecting one from the sources tree.

Finally, click the Apply button to save the changes. All events satisfying all the configured criteria will be returned.

7. What filtering criteria does the OPC AE Archiver support?

The OPC AE archiver supports filtering on the following criteria:

- **Event Type**
- **Event Categories**
- **Areas**
- **Sources**
- **Severity**

8. How can I delete a historian without losing archived data?

If you want to delete a configuration without losing the archived data, follow these steps:

- From the menu bar, select Transfer then Delete historian. A dialog similar to the below appears:

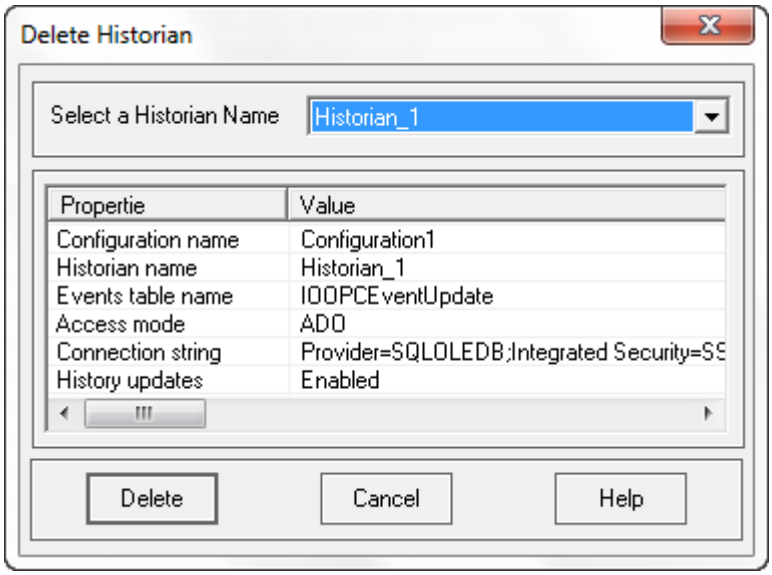


Figure 129: Delete Historian Dialog

- Select the historian to be deleted then click the Delete button. A dialog screen will appear to confirm the removal of the historian.

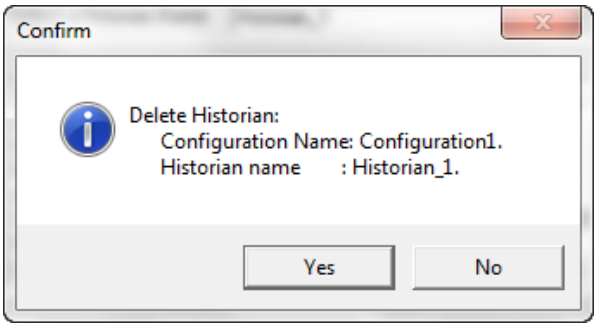


Figure 130: Confirm Delete Historian Message Box

- Click the Yes button to proceed. The message box below will be prompted.

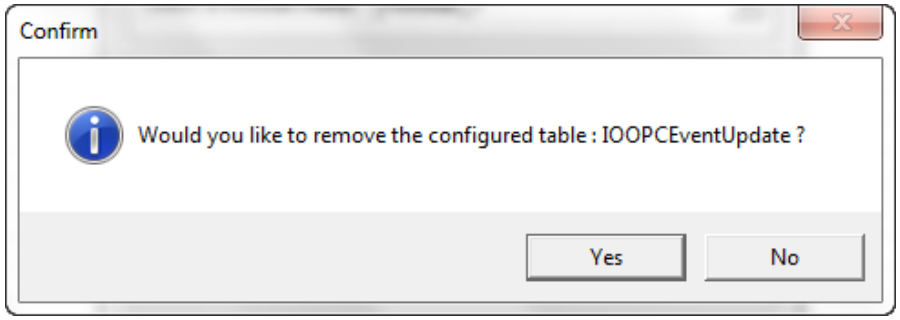


Figure 131: Confirm Delete Archived Data Message Box

If you want to keep the archived data, click the No button.

APPENDIX A: LOGGING

The AE Archiver produces a log file named “LogEvent.LOG” that records errors and debugging information. If difficulties occur with the AE Archiver, the log file can be extremely valuable for troubleshooting. Under normal operations, the client logs very little information.

This log file is generated at start-up under the setup folder, where AE Archiver.exe is located.

The AE Archiver incorporates a configuration file “ConfigFile.ini” which includes several logging parameters. These parameters have default settings and can be changed at start-up by editing the configuration file.

To change this file:

1. Open ConfigFile.ini in a text editor.
2. Edit any of the parameters listed in the following tables:

Log Setting	Description	Default Value
LogFileMaxSize	The maximum log file size, in bytes. Once this size is reached during run-time, the log file is overwritten.	1048576*2 ~ 2 Mb (MegaByte)
ArchiveLastLog	TRUE: Old file is copied to an intermediate file with incremental extension, before being overwritten. FALSE: Any pre-existing log file is erased and overwritten at start-up.	FALSE
LogLevel	Level related to the LogFile.	0

Table 7: INI Configuration File Log Parameters

3. Save the file for the log settings and performance parameters to take effect.
   Sample Configuration File:

```
[LogSetting]
LogLevel=0
LogFileMaxSize=2097152
ArchiveLastLog=False
Investigate=1
Reconnection-TimeOut=30
Maximum Subscription Failure=5
Query Execution Timeout=30
Query Execution Timeout Number=10
[ArchiverSetting]
CheckAlarmListSize =5000
AttributesValueSize=200000
DateTimeArchiverSeparator= -
```

The config ini file also includes the following parameters :

Parameter	Description	Default Value
Investigate	Set investigate to 0 to disable the reconnection in the OPC AE Archiver.	1
Reconnection-TimeOut	If Reconnection TimeOut is set to 0, OPC AE Archiver will not initiate the reconnect if there are no new alarms received from the OPC server. It will reconnect only if there is connection problem with the OPC AE server. If Reconnection TimeOut value is higher than 0, the OPC AE Archiver will reconnect if there are no new alarms during the configured period	30 (minutes)
Maximum Subscription Failure	The maximum number of the get subscription state before reconnection to the server	5
Query Execution Timeout	The command timeout when executing the query in the ADO database	30 (seconds)
Query Execution Timeout Number	The maximum number of the timeouts returned when executing a query before reconnecting to the database	10
CheckAlarmListSize	This parameter allows to configure the size of the alarm buffer used to detect	5000

	duplicated alarm messages. Its value is set to 5000 messages by default and should not exceed the maximum size which is 10000 messages.	
AttributesValueSize	This parameter allows to configure the size of the attributes values.	200000
DateTimeArchiverSeparator	The DateTime archiver separator	-

Table 8: INI Configuration File Parameters

APPENDIX B: SQL BACKUP

The AE Archiver produces a backup file named “SqlBackup.Sql” that records Sql queries. If an error occurs with the storage process, (Network problems, Database Server problems, etc.) the backup file can be used to store data that should be archived. When the user successfully repairs the database server problem, he can store the backup data in the database.

This file is generated at start-up under the Setup folder, where the AE Archiver.exe is located.

The AE Archiver incorporates a configuration file “SqlBackupConfigFile.ini” which includes several parameters. These parameters have default settings and can be changed at start-up by editing the configuration file.

To change this file:

1. Open *SqlBackupConfigFile*.ini in a text editor.
2. Edit any of the parameters listed in the following tables:

Backup Setting	Description	Default Value
BackupFileMaxSize	The maximum backup file size, in bytes. Once this size is reached during run-time, the backup file is overwritten.	1048576*2 ~ 2 Mb (MegaByte)
ArchiveLastBackup	TRUE: Old file is copied to an intermediate file with incremental extension, before being overwritten. FALSE: Any pre-existing Sql Backup file is erased and overwritten at start-up.	FALSE
IgnoreDuplication	TRUE: The duplicated SQL queries will be not kept in the SQL backup file FALSE: The duplicated SQL queries will be recorded in the SQL backup file.	TRUE

Table 9: SQLBackup Configuration File Parameters

3. Save the file.

Sample Sql Backup Configuration File:

```
[BackupSetting]
BackupFileMaxSize =2097152
ArchiveLastBackup =False
IgnoreDuplication=True
```

APPENDIX C: TIPS FOR CONFIGURING DCOM SERVERS

Here are four tips for configuring DCOM Servers.

1. Users on Trusted Domains need to have an account created for them with matching usernames and passwords on the DCOM server's domain. The purpose of this is to set up a matching SID (Security ID). Trusted Domain group members need to have remote DCOM servers initiated for them by a Primary Domain member.

A Trusted Domain is a setup that allows resources from one domain to access resources on another domain. Trusted Domains typically go in one direction, although they can be bi-directional. The process of one domain trusting another domain and passing user authentication to another domain is called pass-through authentication.

2. Workgroup machines are individual domains, so you must set up matching SIDs (usernames and passwords) to establish connections between the machines.
3. Always create a Global Group through NT Server's User Manager and add the members for whom you want to provide access to specific DCOM servers. Then, use DCOMCnfg to set the launch permissions to that group. This makes administration easy to manage, even if you have a group that contains everyone.
4. If the client application implements a sink (callback), the server must be able to call back to the client. You must configure the client to accept calls from the server. Just because the client can connect to the server doesn't mean the server can call back to the client.

For additional information on this guide, questions or problems to report, please contact:

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