

OPC and EasyView 5

Manual
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OPC – Ole for Process Control

OPC in general

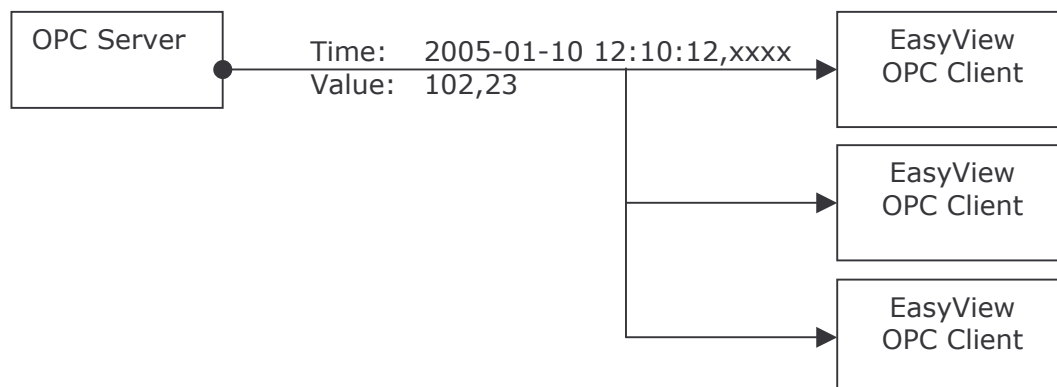
Exchanging measurement data between different computers in a network environment has always been a problem. The problem concerns both security and performance as well as ease of use. In order to resolve these issues, OPC (Ole for Process Control) was developed by a group of companies that worked together in what is known as the OPC Foundation.

How does OPC work?

In order to record OPC-data there has to be an OPC-server (a Windows application) available on the local machine or in the network. An OPC-server transmits data to an OPC-client. The purpose of an OPC-server is to make data available to OPC-clients. The OPC-server itself gets data from a physical device through a serial port, a CAN-bus or by some other means, usually involving some kind of hardware.

In practice, OPC-data are binary packages of information containing information such as a timestamp, a value and state (quality) information.

An OPC-server decides to transmit values based on change of value detection, not change of time. There is a way to control what should be considered a change by specifying a least amount of change required. This is expressed as a percentage of the possible value span. This is called a "dead-band". Only OPC-data that has minimum and maximum value properties specified and thus have a span allow the specification of a "dead-band". "Dead-band" is primarily used to reduce network traffic and storage requirements. It is an alternative to the reduction of a sample frequency.

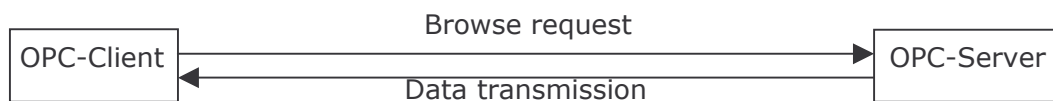


Enabling communication between a server and a client in a network

The user account that the client (EasyView) is running in must be *known* by the server computer on which the OPC-server is running, in order for browsing to work. This is because browsing is initiated by the client; the client accesses the server.

The account that the OPC-server is running in must be *known* by the client, in order for data transmission from the server to the client to work. This is because data transmission is initiated by the server; the server accesses the client.

The reason for this is windows security, a good thing that sometimes seem to complicate our daily lives. You cannot login on a computer without specifying an account that is known by the computer.



There are primarily two ways to make an account known to a computer. The easiest is to use what is known as a domain environment. If both computers belong to the same domain, they both know the same accounts, through their domain membership. The accounts are managed and stored on the domain controller computer/server.

Somewhat more difficult is the workgroup environment. In this environment, each computer stores it's own set of accounts. In order to make an account known to both computer, the account must be stored/managed on both computers. Both username and password (=account) must be declared identically on both computers. This is why it's more difficult. One may forget this or one may misspell slightly. Thus it may not work. Be sure to check the accounts on both computers!

The second trick above can also be used if the server and the client are part of different domains, or if one computer is a member of a domain and the other is not. The important thing to remember is that the account used for the access is *known* on both systems, either through the domain or through duplicate declarations on both computers.

Installing the EasyView OPC-Server

The OPC-server plug in is installed together with EasyView. If needed, the installation will ask if you want to install the "OPC Data Access 2.0 Components". You should confirm that you want to this.

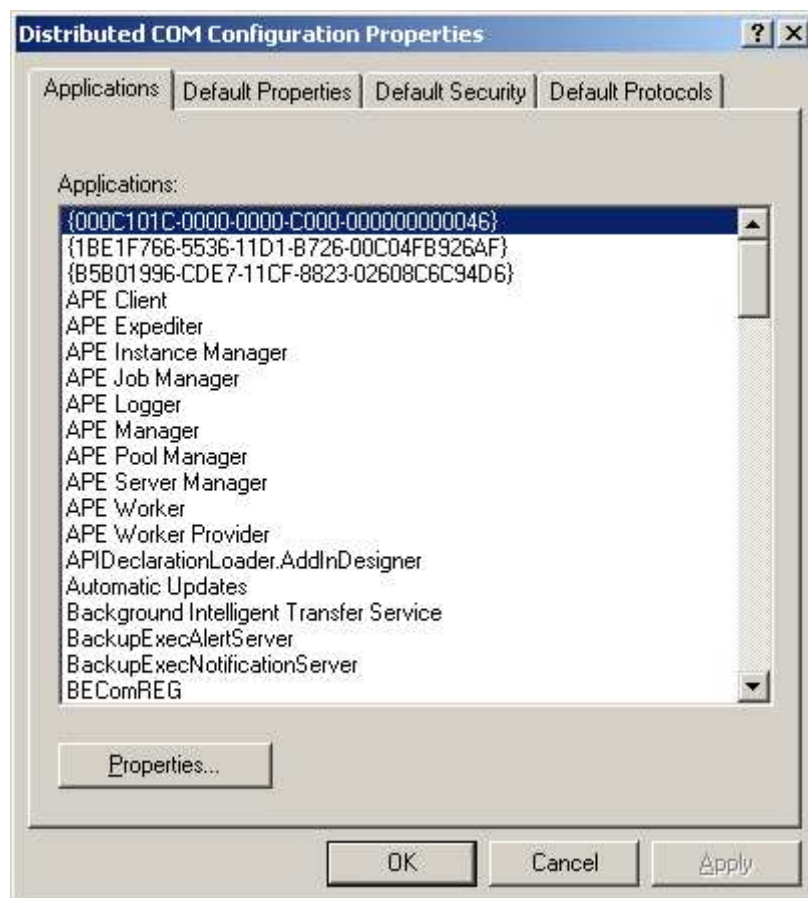
When the installation has completed, two things must be taken care of:

- Network accounts. (See the following sections)
- DCOM (Distributed COM) settings.

DCOM settings

DCOM is an acronym for "Distributed Component Object Model". OPC uses this technology to transfer data between a server and a client. EasyView requires that three aspects of DCOM settings are correct:

1. Default Properties
 2. "INTAB EasyView Recording" application properties.
 3. "OPCEnum" application properties.
- Log in as administrator
 - Launch C:\<WINDOWS>\System32\DCOMCNFG.EXE

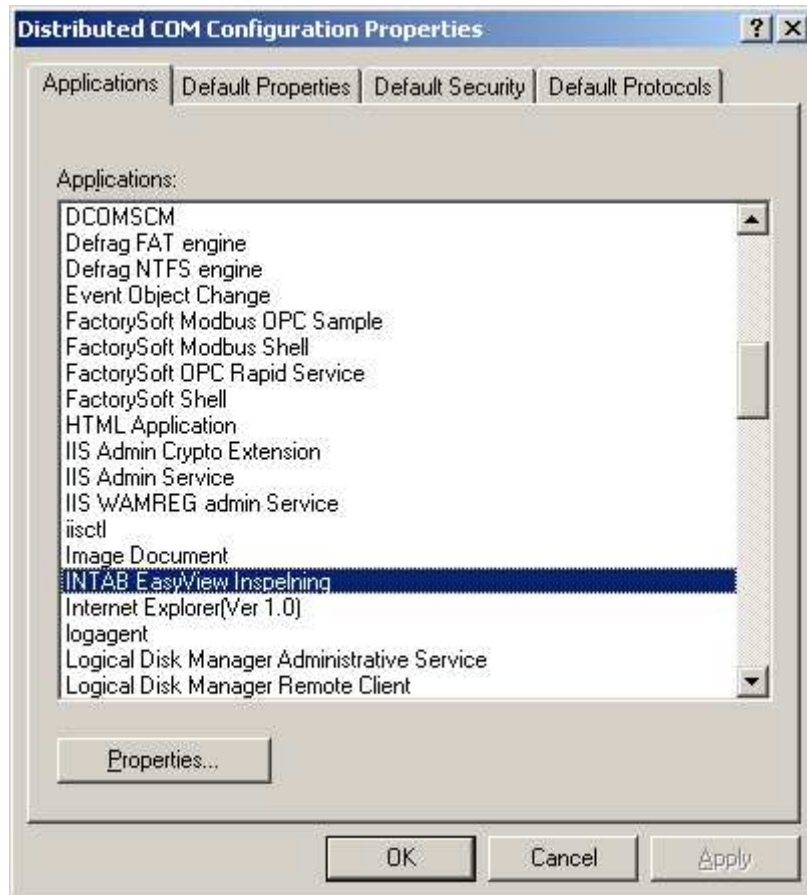


DCOM Settings for EasyView and OPCEnum

The properties applied in the dialog boxes shown below should be the same for both EasyView and OPCEnum. Only EasyView will be handled here but the same procedures should be applied to OPCEnum as well.

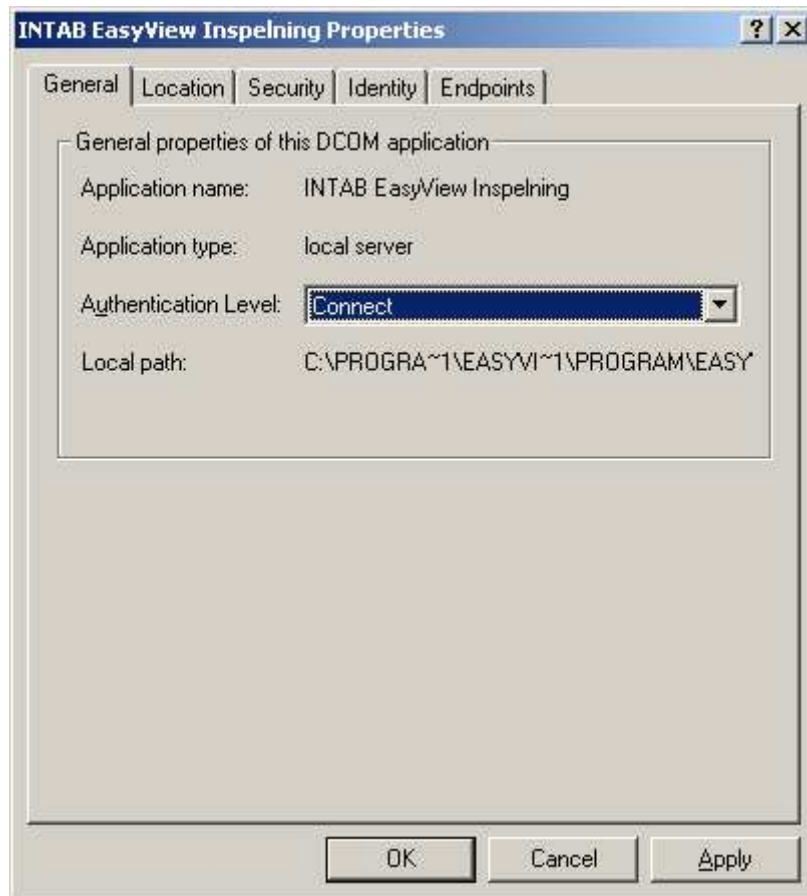
Application specific properties

- Select "INTAB EasyView Inspelning". Click on Properties. (Please note that the image below shows the entry for a swedish version. Actual entry text in your environment should read "INTAB EasyView Recording".)



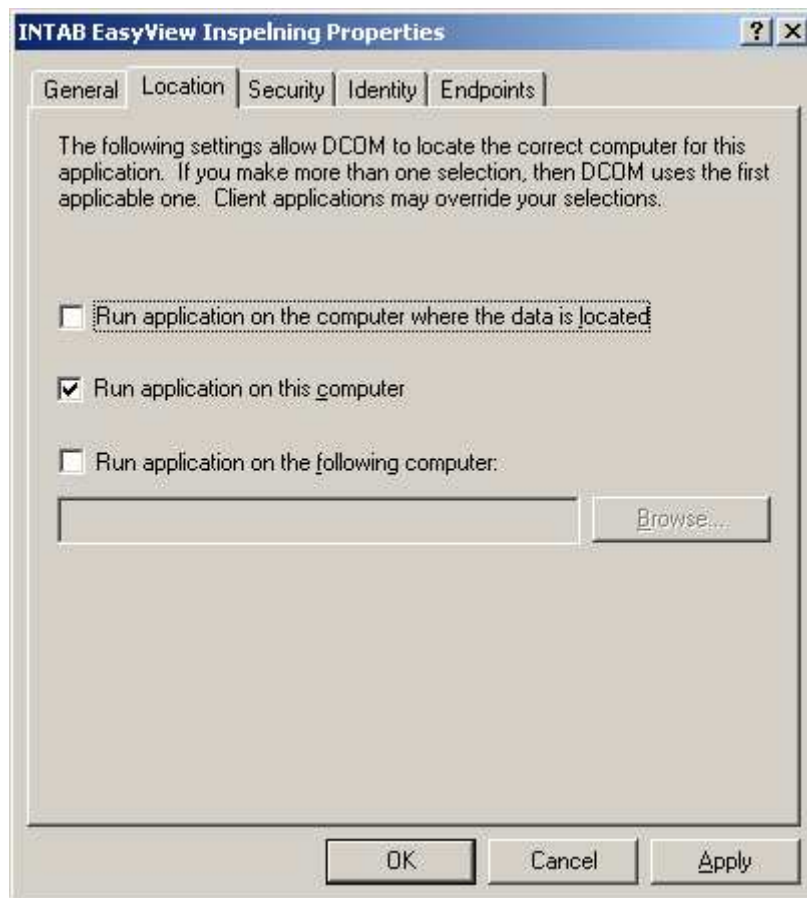
INTAB EasyView Recording Properties – General

- Select authentication level "Connect".



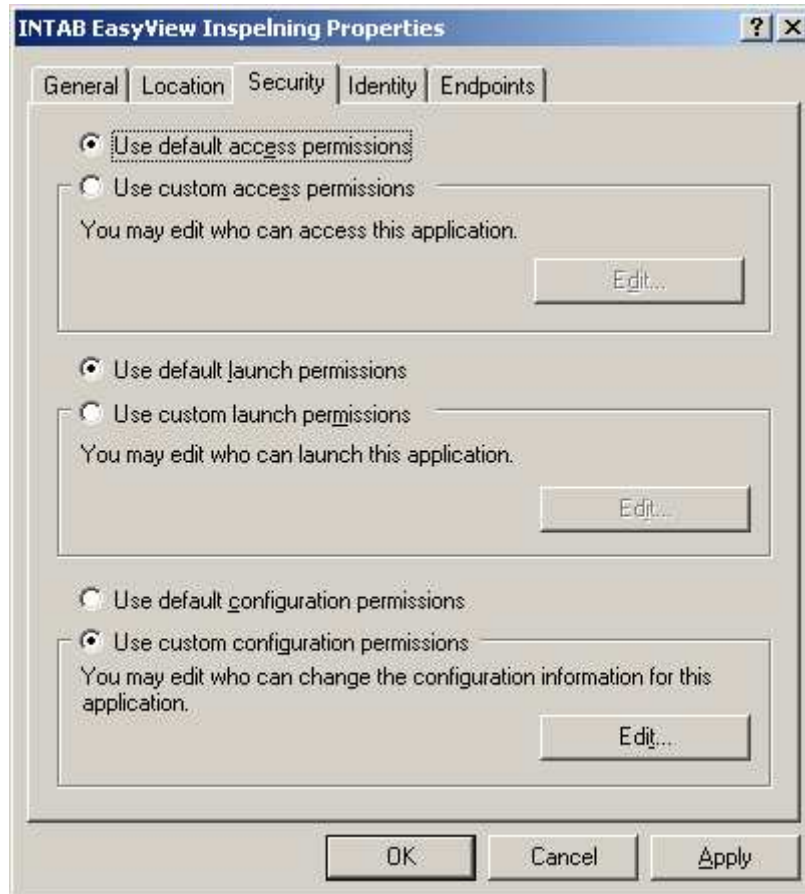
INTAB EasyView Recording Properties – Location

- Select "Run the application on this computer".



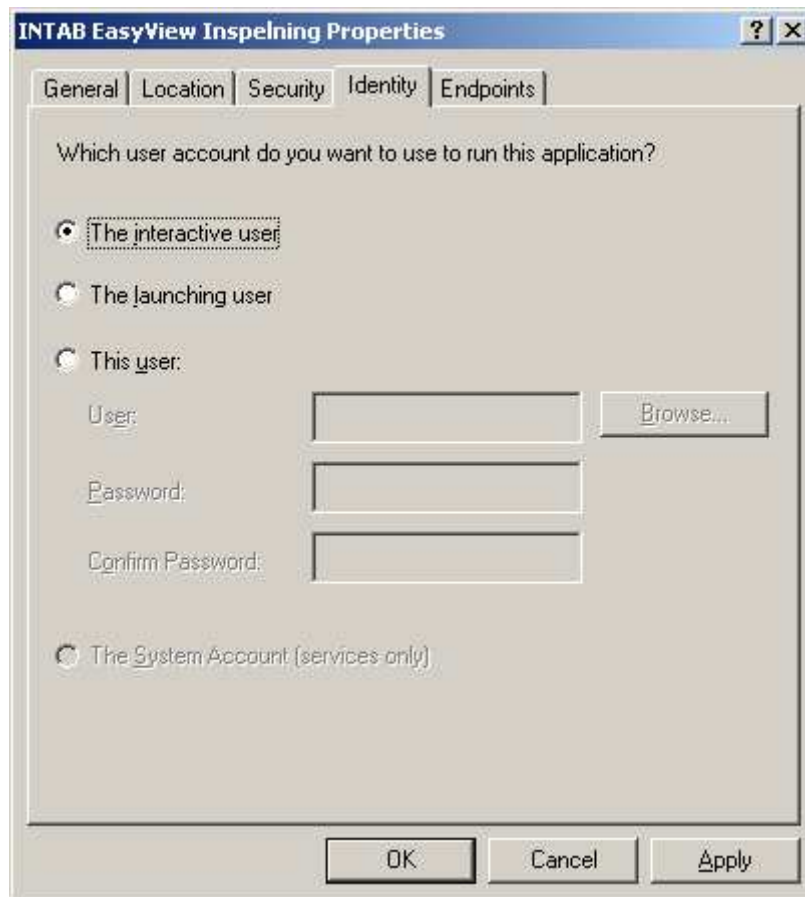
INTAB EasyView Recording Properties – Security

- Select "Use default access permissions".
- Select "Use default launch permissions".
- Select "Use custom configuration permissions". Make sure that the user group "Users" is available under "Edit..."



INTAB EasyView Recording Properties – Identity

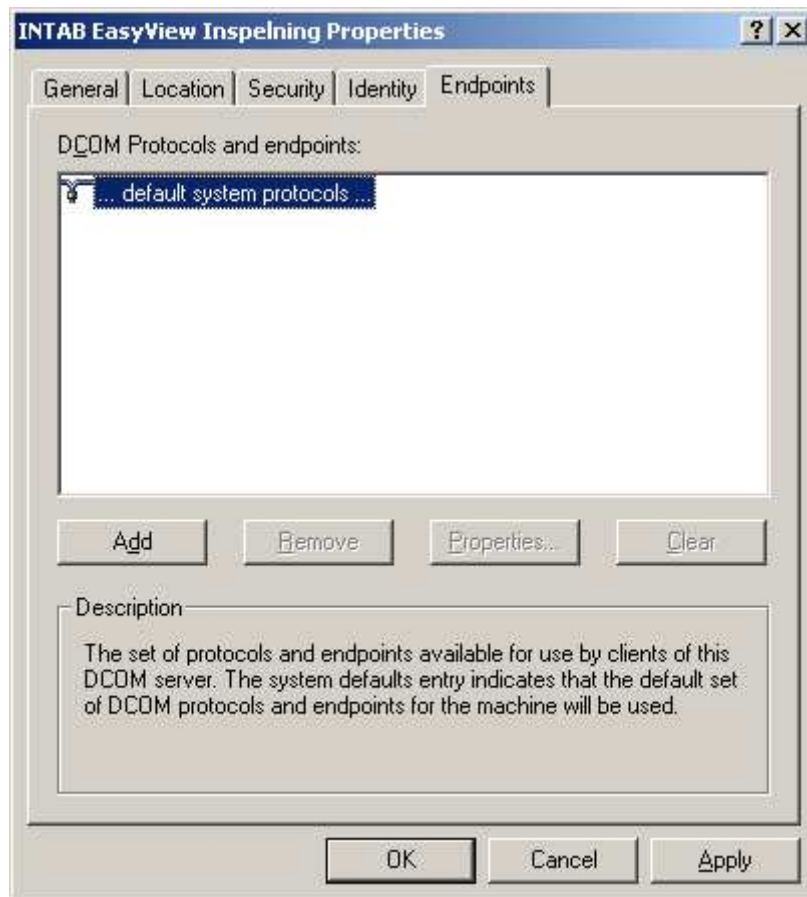
- Select “The interactive user”.



The screenshot shows the 'INTAB EasyView Inspelning Properties' dialog box with the 'Identity' tab selected. The dialog has five tabs: 'General', 'Location', 'Security', 'Identity', and 'Endpoints'. The 'Identity' tab contains the question 'Which user account do you want to use to run this application?'. There are three radio button options: 'The interactive user' (which is selected), 'The launching user', and 'This user:'. Below 'This user:' are three text input fields labeled 'User:', 'Password:', and 'Confirm Password:', with a 'Browse...' button next to the 'User:' field. At the bottom of the dialog are three buttons: 'OK', 'Cancel', and 'Apply'.

INTAB EasyView Recording Properties – Endpoints

- No modifications needed.

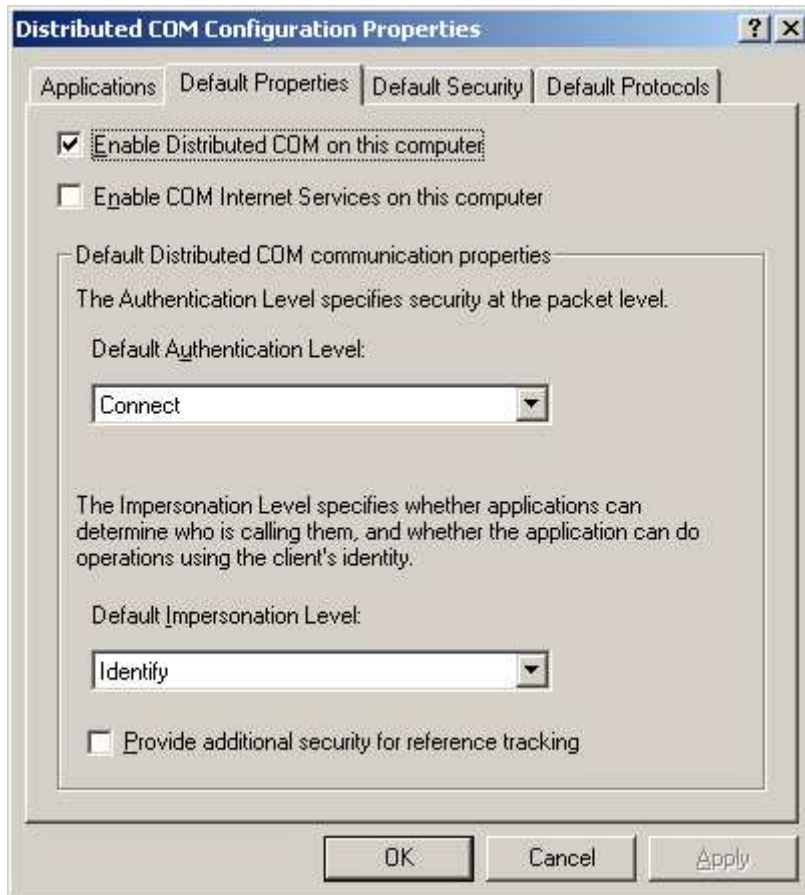


DCOM Default Properties

Some of the settings applied so far refers to standard settings. We will deal with these right now.

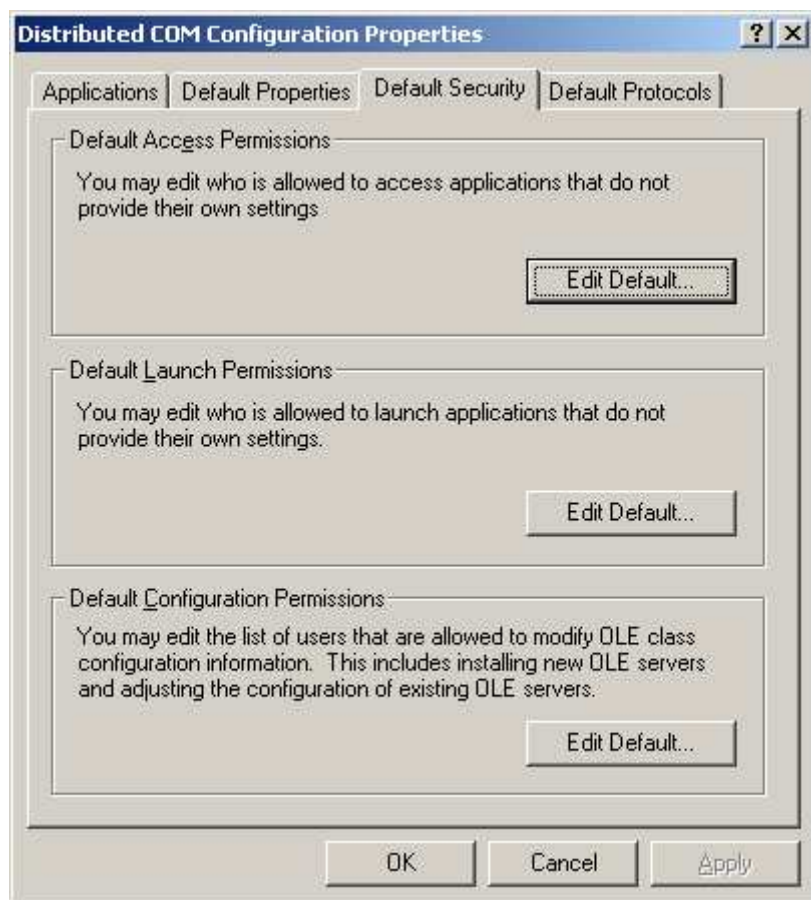
Distributed COM-configuration – Default Properties

- Select "Connect" as default authentication level.
- Select "Identify" as default impersonation level.

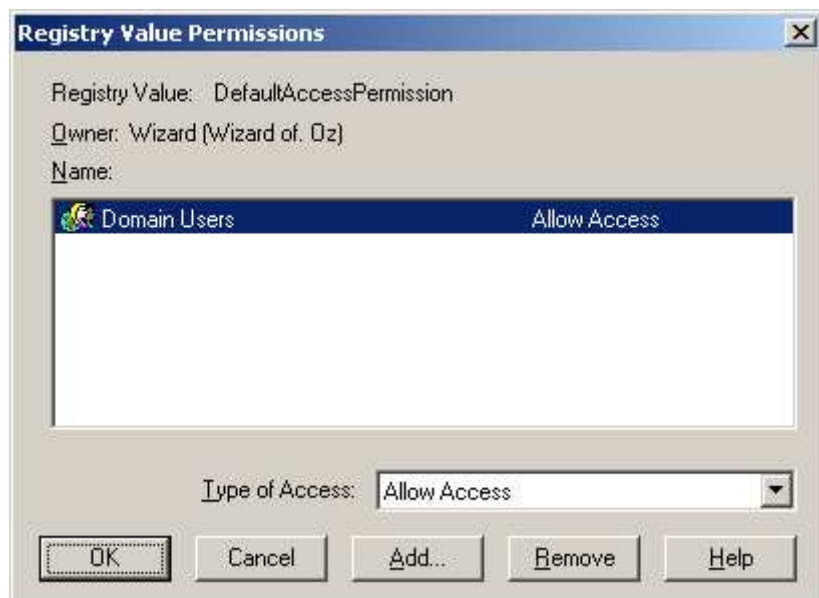


Distributed COM-configuration properties – Default Security

- In each of the three choices below “Edit Default ...”, the accounts and groups that is to be allowed access has to be added.



- Add the group Domain Users or a group of your own making. Alternatively you can add individual users. Repeat this for all three of the standard properties.



EasyView OPC Real time client

About OPC “ports” in EasyView

Under *File/Connections* we find an item that says “Real time-client on OPC1”. The “1” at the end is just an enumeration that makes it possible for EasyView have several Real time Client connections active simultaneously. Adding more “OPC-ports” (OPC2, OPC3 etc.) is done like this:



1. Select “Real time client on OPC1”. If you can’t find it in the list, it is hidden under “More connections”. Hit “More connections” and add it.
2. Click on “Advanced”.
3. Select or enter the number of ports that you want to make available.
4. Select OK and restart the application.

OPC Servers comes in different versions

OPC is and has been an evolving standard. It started with OPC 1.0 and has evolved into OPC 2.0. The main difference between these two versions is what a client application must do in order to find the servers. Since browsing for servers sometimes can be time consuming, EasyView allows the user to enable/disable browsing for OPC 1.0/OPC 2.0.

When installed, EasyView has browsing of OPC 2.0 servers enabled. Browsing for OPC 1.0 servers is disabled.

If you experience problems in locating a server, it just might be that it is an OPC 1.0 server. Enabling browse for OPC 1.0 servers most likely resolves the problem. How to do that is described in the next section.

Enabling browsing of 1.0 Servers

Select the *File/Connections* menu. Locate and select *INTAB Real time client on OPC1* in the combo. If you cannot find it in the combo, click the *Show Connections* button. Move *INTAB Real time client on OPC1* from *Hidden Connections* to *Shown Connections* using one of the arrow buttons. Press OK.

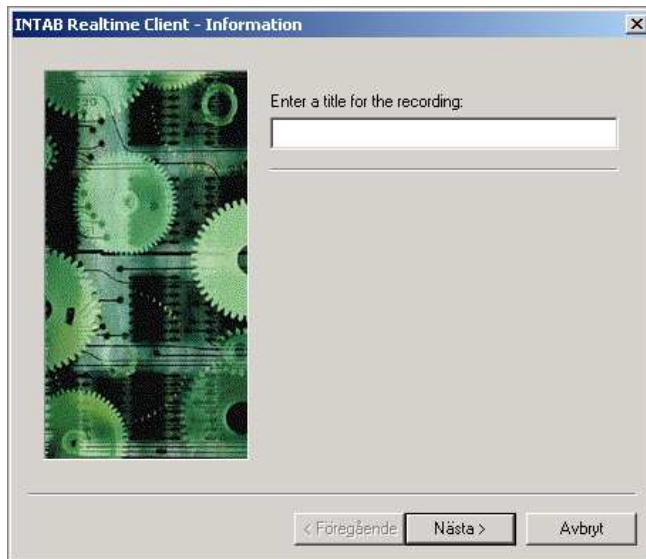
Make sure that *INTAB Real time client on OPC1* is selected in the combo.

Press the *Connection Setup* button. Put a checkmark in the *OPC 1.0* checkbox and hit OK. Hit OK again.

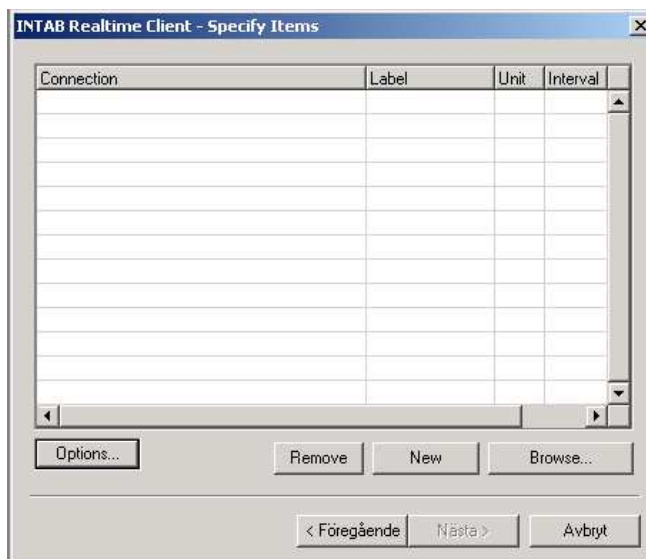
Making a recording

First, you need to make sure that EasyView can connect to the OPC server, some servers start automatically and others needs to be started 'by hand'. If the OPC server you are connecting to needs to be started 'by hand' you must launch the server yourself.

Make sure that INTAB Real time client on OPC1 is selected in the toolbar combo of the main window. Hit the  button or select the File\Logger... (Start/Stop/Offload) menu.



Type a title for the recording and hit the Next button.



Hit the Browse... button.

Creating a project

By hitting "Create project..." on the summary page you can save the settings used to create the recording. This enables you to perform a new recording at a later time through EasyView's Project Manager (See the EasyView manual), duplicating the settings you just used.