



Impact OPC Server Reference

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Datasensing S.r.l.

Strada S. Caterina 235
41122 Modena
Italy
Tel. +39 059 420411
Fax +39 059 253973

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T A B L E O F C O N T E N T S

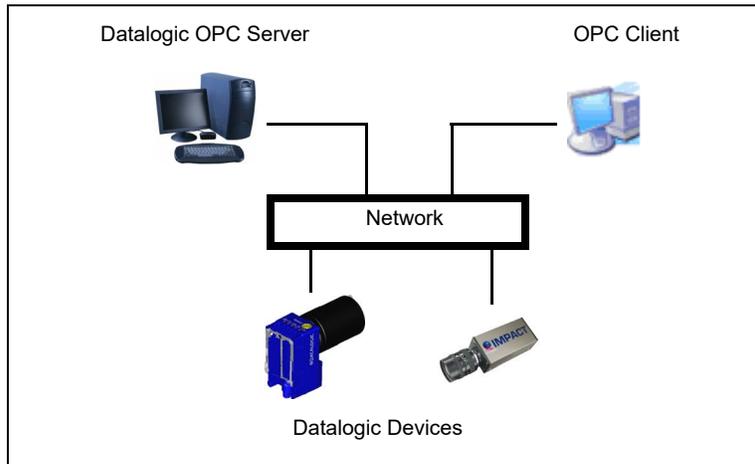
Chapter 1: Impact OPC Server

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Impact OPC Server

This manual documents the Impact OPC Server that works on Datalogic vision devices. Impact vision programs are developed using the Impact Vision Program Manager (VPM) on a PC. Software clients on the network can then access vision programs data and control events using standard OPC commands.

To be able to create or modify vision programs on the Datalogic device, you need to install the Impact software on a PC. You can install and run the OPC server on any PC that fulfills the system requirements. That Server PC is then connected to Datalogic devices and OPC clients through a standard network. A simple configuration could look like this:



Using OPC, a programmer can monitor and operate a Datalogic device, including the ability to read and write tool and task inputs and outputs, and trigger the device to snap an image.

This manual includes instructions for installing the OPC Server and using it to access the Datalogic device. It also describes the provided standalone client program that lets you test the Server and its operation.

NOTE: This manual does not provide detailed operation about Datalogic devices. It assumes you have some knowledge of how vision programs and Impact tools and tasks are structured, how to access tool and task data, and that you understand Impact terminology.

For more details about using Impact Vision Program Manager (VPM) and Datalogic cameras, refer to the Hardware Guides and the Impact Software Reference Guide.

NOTE: OPC Server cannot be used on the Datalogic model A30, P1x-Series, or T4x-Series Smart Cameras.

OPC Server Installation

Disabling User Account Control

On Windows 7 operating systems you must disable User Account Control (UAC) for the OPC Server software installer to complete successfully.

Important Note: Disabling UAC will make the system less secure. It is not recommended that you run Windows 7 computers with UAC disabled. You should enable UAC after the Datalogic OPC server install is complete.

To disable UAC

1. Click the Start button
2. Click Control Panel
3. If you are connected to a network domain, click "User Accounts." If you are not, click "User Accounts and Family Safety."
4. In the User Accounts window, click "User Accounts."
5. In the User Accounts task window, click "Turn User Account Control on or off". If you are prompted for an administrator password or confirmation, type the password or provide confirmation.
6. Clear the "Use User Account Control (UAC) to help protect your computer" check box to turn off UAC.
7. Click OK.
8. Click Restart Now to restart your computer and apply the change.

Installing OPC on the Datalogic Device

NOTE: The OPC Server software must be installed on the M-Series, MX-E Series, MX-U Series, or MX-U81 Vision Processor and will only serve data for the OPC Enabled Vision Devices on that Vision Processor.

OPC Server cannot be used on the Datalogic model A30, P1x-Series, or T4x-Series Smart Cameras.

Refer to the Impact Reference Guide for Impact Software installation instructions. This installs and configures the DPWS server so that the device can communicate with other OPC devices on the network.

In VPM, there is a check box on the Settings - General System Object Setup - Communication panel (Enable OPC Server). When enabled, the DPWS server on the Datalogic device starts automatically when the device boots.

Installing OPC Server software on the PC

The install program copies all the server application files to their appropriate places. This includes the files for Microsoft's .Net Framework 3.5, which is required for the OPC Server to work.

Important Note: The Datalogic OPC installer installs software only on the OPC Server Computer. To use the OPC Server, you must install at least the firmware part of the same Impact software version on the Intelligent Camera.

To Install Datalogic OPC Server software

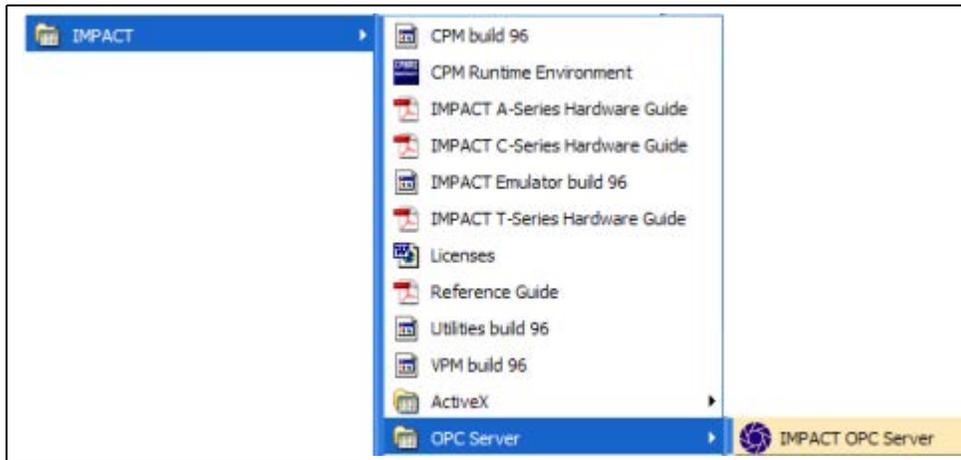
1. You may need to turn off automatic virus checking during the install if it causes installation problems.
2. You must have Administrative privileges to install Impact software.
3. Double-click on the Datalogic OPC Server setup program icon and the installation program should start.
4. If the Microsoft.NET Framework license is displayed, click Accept. The .NET Framework will be installed. This may take a long time (more than 30 minutes). If the .NET installation license is not displayed, skip to step 6.
5. When the .NET Framework installation is complete, and the Datalogic OPC Server Reboot screen is displayed, click Yes to restart your computer.
6. When the reboot is complete, the OPC Server install Welcome screen is displayed. Click Next to display the License Agreement. You must click the radio button labeled "I Agree" to accept the License Agreement and continue with the installation.
7. Click Next to display the OPC Server auto-start option dialog. If you want the OPC Server to start when the computer starts, click the check box. This automatic start can be disabled in Vision Program Manager. Refer to the Impact Reference Guide. The server will start automatically when it is needed even if you do not select this option.
8. Click Next to display the Select Installation Folder dialog. Click Browse to browse to the desired directory, type in the directory name, or make no changes to select the default directory.
9. Click Next to display the Confirm Installation screen.
10. Click Next to begin the installation.
11. When the installation has completed, a dialog should be displayed indicating that the IMPACTOPC-Server registered OK.
12. Click OK to display this Readme file. Click Next to continue.
13. When the Installation Complete screen is displayed, click Close to close the installation program.

OPC Server

The OPC Server will start automatically when a client tries to connect to it, or it will start when the computer starts if that option is enabled in Vision Program Manager. (See “Installing OPC on the Datalogic Device” on page 1-2)

To start the OPC Server manually

1. Click Start - All Programs - IMPACT - OPC Server - Datalogic OPC Server



2. When the OPC Server is started, it puts the OPC Server icon in the Quick Launch toolbar.

OPC Server User Interface

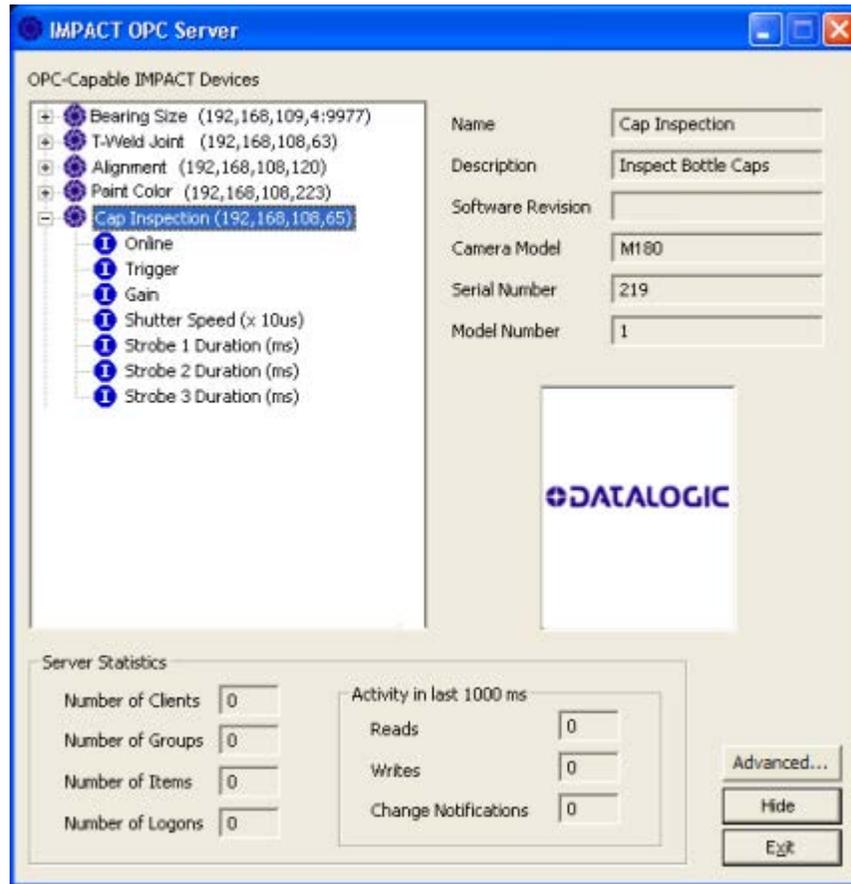
When the OPC Server is running, you can access the User Interface to view information about Datalogic OPC devices on the network. The User Interface displays information only, you cannot change any values on the device from here. See “Test Client” on page 1-6 for details about testing the OPC Server and Datalogic device interaction.

To access the OPC User Interface



1. Right-click the OPC Server icon in the Quick Launch toolbar and select Show Window from the menu.
OR
Double-click the icon.

When the OPC Server starts, it scans the network for any active Datalogic OPC devices and displays them in the OPC-Capable Datalogic devices list.



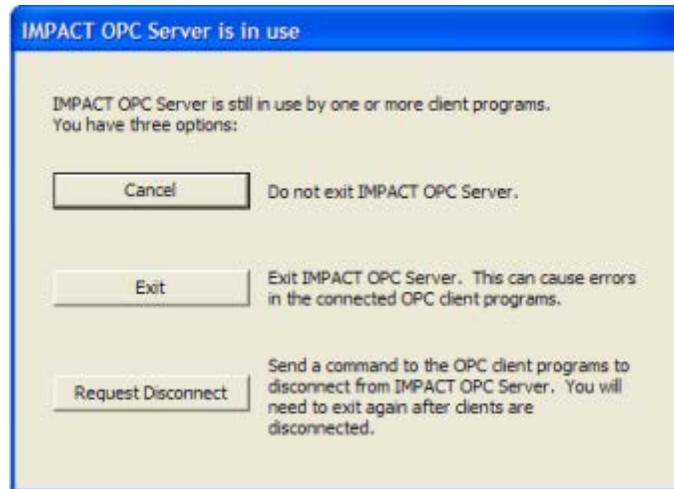
- **OPC-Capable Datalogic Devices:** This is a list of all the Datalogic devices that responded to the Servers query. The device name and IP Address are shown. When you click on the small plus sign to the left of the icon, a list is displayed of the inputs that were defined in the OPC Data Access system object on the Datalogic device.

You use Impact Vision Program Manager (VPM) to add inputs to the OPC Data Access system object. When you add or remove an input in VPM, you must restart the OPC Server or the Datalogic device to update the input list. Whether you should restart the OPC Server or the Datalogic device depends on which would cause the least disruption to your configuration. For more details about these inputs refer to the OPC Data Access section of the Impact Reference Guide.

NOTE: The inputs shown in this list may not correspond exactly with the list shown in the Client Namespace if inputs have been added or removed in the OPC Data Access system object in VPM. If an input is removed, its name will be removed from this OPC Server list, but it will continue to be displayed in the Client Namespace as long as any client is accessing it. Any attempt to read or write the input will generate an error.

- **Name, Description, Software Revision, Camera Model, Serial Number, Model Number:** These values provide details about the Datalogic device that is highlighted in the list.
- **Server Statistics:** This section contains details about the current state of the Server.
- **Advanced:** The Advanced dialog lets you choose if the server will start automatically when the computer starts.

- **Hide:** Click this button to minimize the User Interface to the Quick Launch toolbar. The Server continues to run.
- **Exit:** Click this button to close the User Interface and shut down the Server. If any clients are connected to the Server, the following dialog is displayed.



NOTE: If you shut down the server while clients are connected to it and active, the clients could crash or lock up.

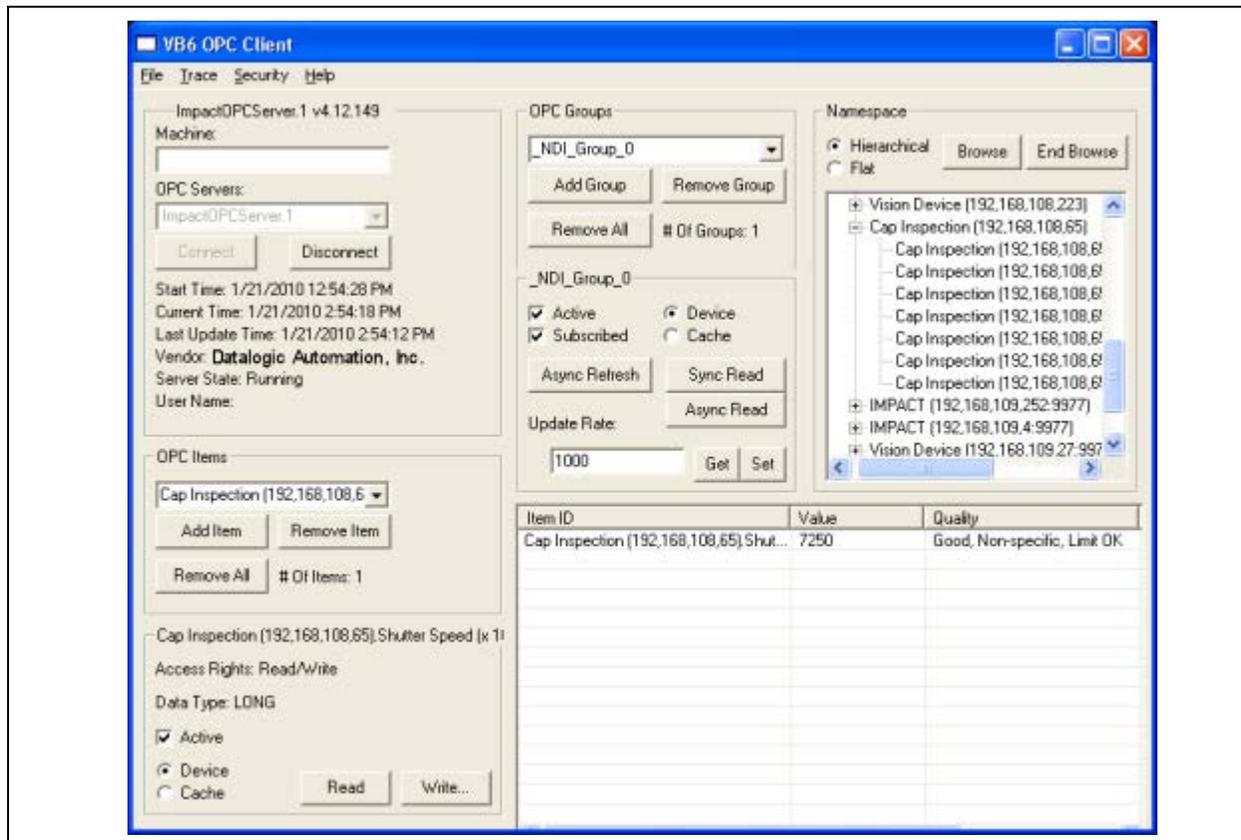
Test Client

Datalogic has provided a sample Test Client program that lets you test a client's ability to connect to the OPC Server and then monitor and control a Datalogic device. When you start the sample program named VB6client.exe, the Test Client User Interface is displayed.

To start the OPC Server Test Client

1. Using Windows Explorer, navigate to the folder under the "install folder":
C:\install folder\IMPACT\Vision Device APIs\OPC Server\Test Client
2. In the folder, double-click on the file named VB6Client.exe

This section briefly explains the Test Client interface.



Machine

If you want to access an Datalogic OPC Server that is running on a particular PC on the network, enter the PC's network name here. Your computer's COM settings must be configured before you can connect to a server on another computer. See "COM Settings" on page 1-9 for more details.

OPC Servers

This is a list of the servers available on the local PC, or on the PC referenced in the Machine field. Select a server from the list to connect to it.

Connect/Disconnect

Click Connect to connect the Test Client program to the OPC Server selected in the OPC Servers dropdown. Click Disconnect to disconnect from the server. The server will continue to run.

OPC Groups

This section of the User Interface lists the groups that have been created

- **Group Selection:** If there are any Groups defined, they will be listed here. You can also enter a Group name here, then click the Add Group button.
- **Add Group:** There are two ways to add a Group to the OPC Groups list.
 1. Type the Group name into the dropdown field, then click this button.
 2. Select the blank in the dropdown, then click this button.

- **Remove Group - Remove All Groups:** Click to remove the Group currently selected in the Group dropdown or all Groups.
- **# of Groups:** The number of currently defined Groups.
- **Active:** If this is checked, the currently selected Group is actively being updated in the Items Results list.
- **Subscribed:** If this is checked, the Test Client will repeatedly update the data from the server after a delay. The delay is defined in the Update Rate field.
- **Device - Cache:** Click one of these radio buttons to choose whether the item's value should be read from the device or the server's memory cache.
- **Async Refresh:** When you click this button, the Test Client will refresh the Items Results data without waiting for a response from the server.
- **Sync Read:** When you click this button, the Test Client will read the Items Results data and wait for a response from the server.
- **Async Read:** When you click this button, the Test Client will read the Items Results data and without waiting for a response from the server.
- **Update Rate:** The amount of delay (in milliseconds) between data updates when the Group is subscribed.
- **Get - Set:** Click these buttons to Get and Set the Update Rate value in the server.

OPC Items

This section of the User Interface lists the items in the Group currently selected in OPC Groups drop down and their properties.

- **Item Selection:** If there are any items in the Group currently selected in OPC Groups drop down, they will be listed here. You can also enter an item name here, then click the Add Item button.
- **Add Item:** There are two ways to add an item to the OPC Items Results list.
 1. Type the item name into the drop down field, then click this button.
 2. In the list of items in the Namespace list, right-click the desired item and select "Add item ... to Group"
- **Remove Item - Remove All Items:** Click to remove the item currently selected in the item drop down or all items in the currently selected Group.
- **# of Items:** The number of items in the currently selected Group.
- **Access Rights:** Access rights for the currently selected item.
- **Data Type:** The data type of the currently selected item
- **Active:** If this is checked, the currently selected item is actively being updated in the Items Results list.
- **Device - Cache:** Click one of these radio buttons to choose whether the item's value should be read from the device or the server's memory cache.
- **Read - Write:** To read or write the value for the currently selected item, click the appropriate button. If you click Write, you will be prompted to enter the desired value.

Namespace

This is a list of the inputs that were defined in the OPC Data Access system object and are visible to OPC Clients on the network.

NOTE: The inputs shown in this list may not correspond exactly with the list in the OPC Server if inputs have been added or removed in the OPC Data Access system object in VPM. See OPC-Capable Datalogic Devices on page 1-9.

If an input is removed, its name will be removed from the OPC Server list, but it will continue to be displayed in this Client Namespace list as long as any client is accessing it. Any attempt to read or write a removed input will generate an error to the client.

- **Hierarchical - Flat:** Determines how the device inputs are displayed in the Device list.
- **Brows e- End Browse:** Click Browse to display all the OPC Capable devices connected to the currently selected OPC Server.
- **Device List:** A list of all the OPC Capable devices connected to the currently selected OPC Server. Click the small plus sign to the left of the device name to see all its inputs. Refer to the OPC Data Access section of the Impact Reference Guide for details on defining these inputs.

OPC Items Results List

- **Item ID:** The item's device name and input name.
- **Value:** The most recently read input value.
- **Quality:** The status of the most recent read. If there was an error reading the input value, the error is displayed here.
- **Time Stamp:** The time of the most recent update.
- **Access Path:** The data access path.

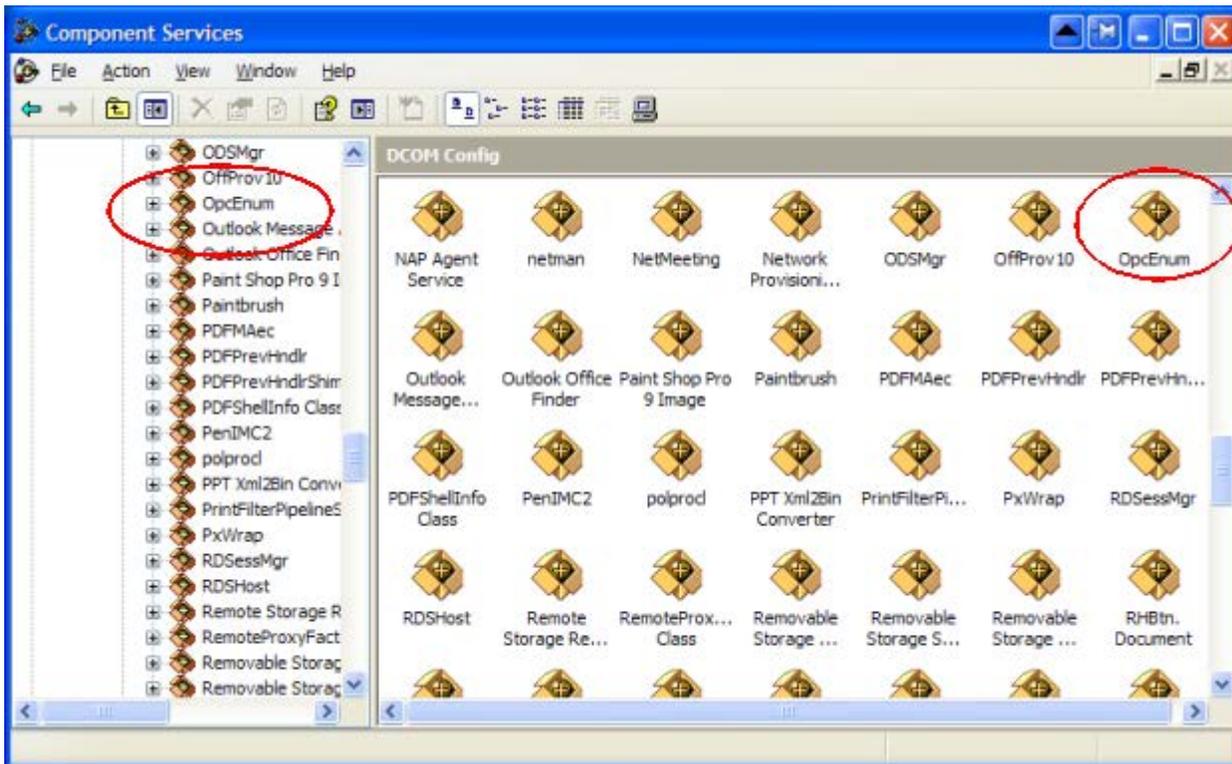
COM Settings

Before you can connect a client on your computer to a Datalogic OPC Server another computer, you must configure the COM settings on our computer. These are general instructions that apply to Windows XP. If you have specific questions about this subject, please contact Datalogic technical support or your distributor.

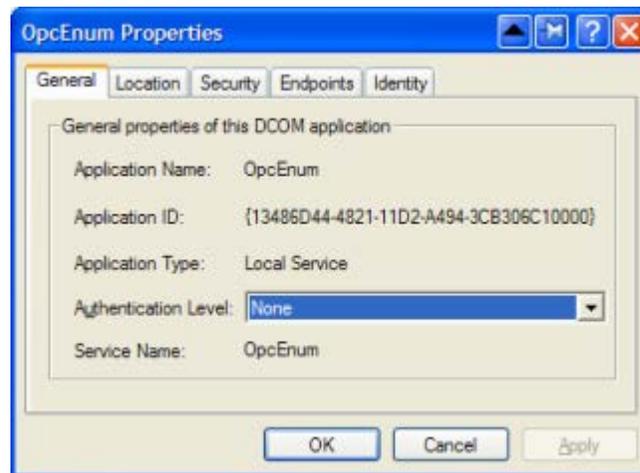
To Configure COM settings

1. Click Start - Run, then type DCOMCNFG and press Enter.
2. When the Component Services dialog is displayed, click the plus signs under Component Services until the My Computer icon is visible.
3. Right-click on the My Computer icon and select Properties from the menu.
4. Click on the Default Properties tab. The options available in this screen should be configured as:
 - The Enable Distributed COM on this computer **MUST** be checked.
 - The Default Authentication Level should be set to None.
 - The Default Impersonation Level should be set to Identity.
5. Click the Com Security tab. Click the "Edit Default" button in the "Access Permissions " section and make sure that the following accounts exist with the "Allow Access" permissions:
 - Everyone
 - Interactive
 - System
 - Network

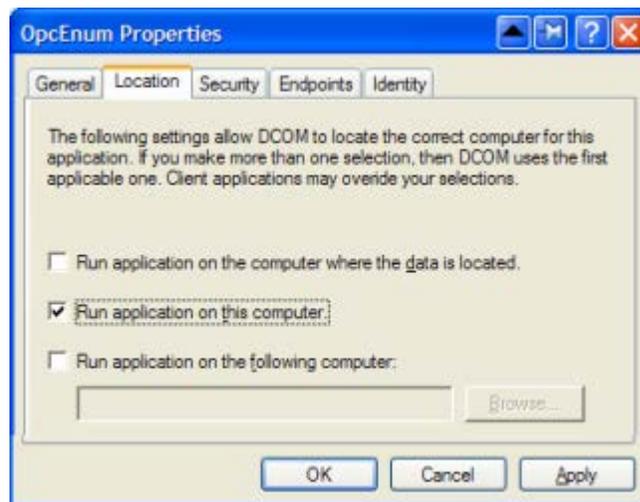
- Guests
 - Anonymous
6. Click OK when you have finished.
 7. Click the "Edit Default" button in the " Launch and Activation Permissions" section and make sure that the same accounts and permissions exist as shown in step 5. Click OK when you have finished.
 8. Click the "Edit Limits" button in the " Access Permissions" section and make sure that the same accounts and permissions exist as shown in step 5. Click OK when you have finished.
 9. Click the "Edit Limits" button in the " Launch and Activation Permissions" section and make sure that the same accounts and permissions exist as shown in step 5. Click OK when you have finished.
 10. Click OK to close the Default Properties dialog.
 11. Click on the plus sign to the left of the My Computer icon to show the DCOM Config folder, then click on the folder. Right-click on the icon named OpcEnum and select Properties.



12. Click the General tab. Set the Authentication Level to None.



13. Click the Location tab. Check the box marked "Run application on this computer."



14. Click the Security tab. Click the following radio buttons:

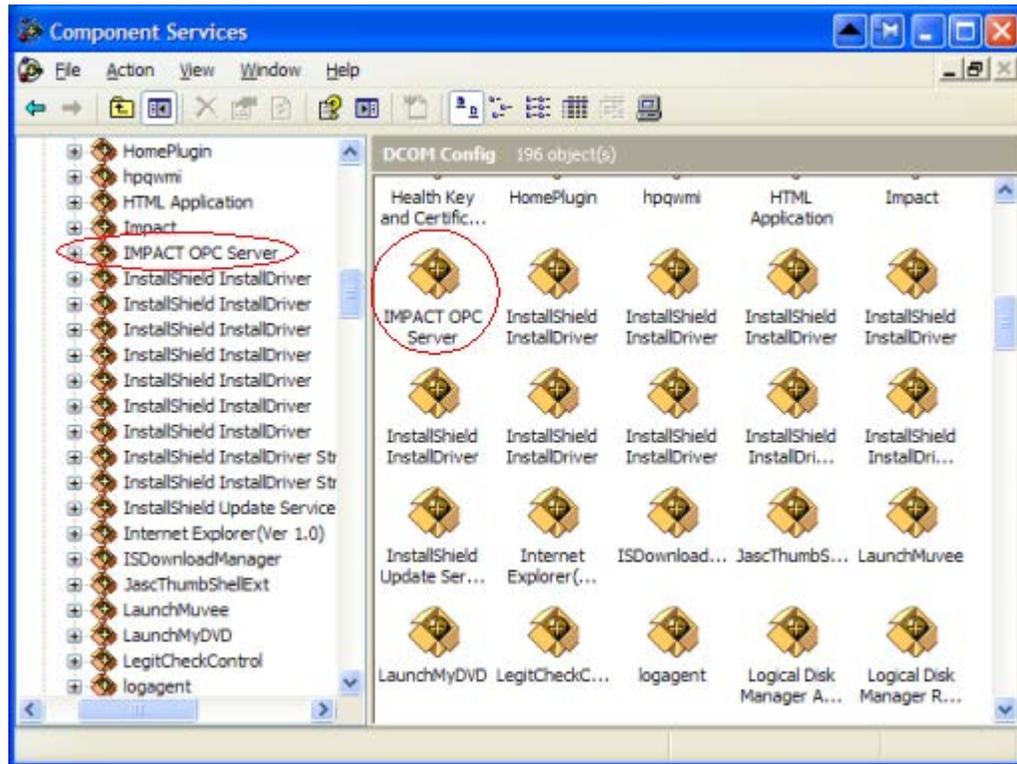
- Launch Permissions - Use Default
- Access Permissions - Use Default
- Configuration Permissions - Customize

15. Click the Edit button in the Configuration Permissions area. Make sure that the following accounts exist with "Full Control" permissions. Click OK when you have finished.

- Network
- Interactive
- System
- Everyone
- Guests
- Anonymous

16. Click the Identity tab. Select either the Interactive or System account radio button, then click OK to close the OPCEnum Properties dialog.

- Click on the plus sign to the left of the My Computer icon to show the DCOM Config folder, then click on the folder. Right-click on the icon named IMPACT OPC Server and select Properties.



- Repeat steps 12 through 16 to configure the IMPACT OPC DCOM properties.
Your computer's COM settings should now be set.