

# Active OPC Server User's Manual

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# Active OPC Server User's Manual

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# 1

## Introduction

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Moxa's Active OPC Server is a software package that operates as an OPC driver of an HMI or SCADA system. It offers a seamless connection from Moxa's I/O products to SCADA systems, including Wonderware, Citect, and iFix. Active OPC Server meets the latest standard of OPC DA3.0 that allows connections to various kinds of devices and host OPC machines.

## Specifications

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| <b>Hardware Requirements</b>     |  |
|----------------------------------|--|
| CPU                              | Intel Pentium 4 and above                    |
| RAM                              | 512 MB (1024 MB recommended)                 |
| Network Interface                | 10/100 Mb Ethernet                           |
| <b>Software Requirements</b>     |  |
| Operating System                 | Microsoft Windows 2000, XP or later          |
| Editor (not required)            | Microsoft Office 2003 (Access 2003) or later |
| <b>OPC Server Specifications</b> |  |
| OPC Data Access                  | 1.0a, 2.0, 2.05a, 3.0                        |
| Max. No. of Tags                 | 5000 (V2.0 or later)                         |
| Process Mode                     | System service                               |

| <b>Port</b> | <b>Type</b> | <b>Usage</b>                                 |
|-------------|-------------|--|
| 502         | TCP         | Modbus Communication                         |
| 4800        | UDP         | ioAdmin searching Active OPC Server          |
| 9300        | TCP         | ioAdmin communicating with Active OPC Server |
| 9500        | TCP         | Active OPC Server protocol                   |
| 9900        | TCP         | Active OPC Server protocol                   |

**NOTE** Active OPC Server does not limit the number of the connected I/O devices; the connection limitation depends on the virtual memory resource of Windows Operating System.

# Installation and Configuration

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## Installing Active OPC Server

Active OPC Server can be downloaded from the Moxa Website.

After downloading the file, unzip it and run **Install.exe**. The installation program will guide you through the installation process and install the Active OPC Server utility.

## Installing OPC Core Components

OPC Core Components provide the connection library needed by Active OPC Server. This package must be installed on the computer that is running Active OPC Server.

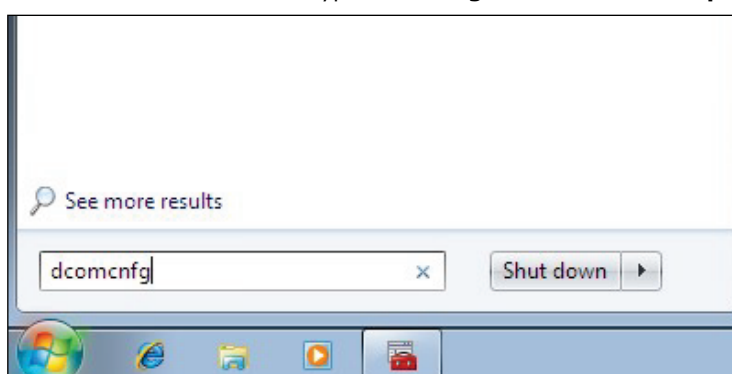
For first time installation, a pop-up message will appear asking if you would like to install the OPC Core Components. You may skip this step if the package has already been installed.

## Configuring DCOM Settings

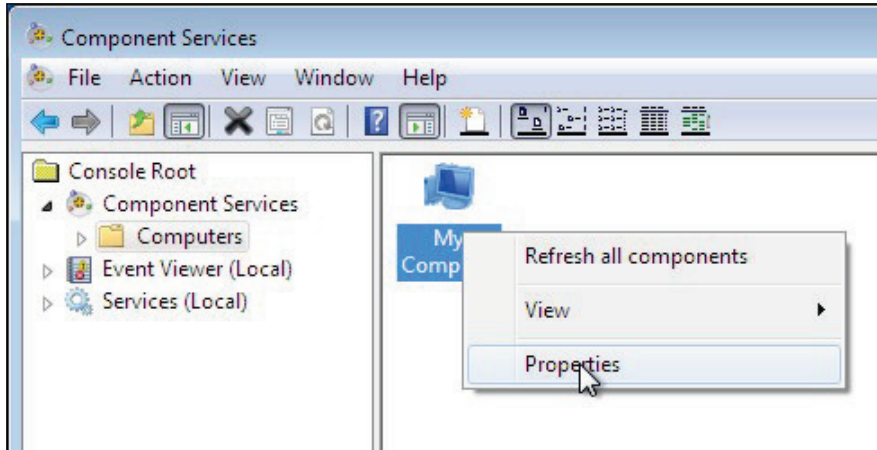
Before launching Active OPC Server, configure the DCOM settings for your security policy.

**NOTE** If the OPC Client and Server software are installed on different servers, the DCOM, WORKGROUP, System Account, and Password settings should be the same.

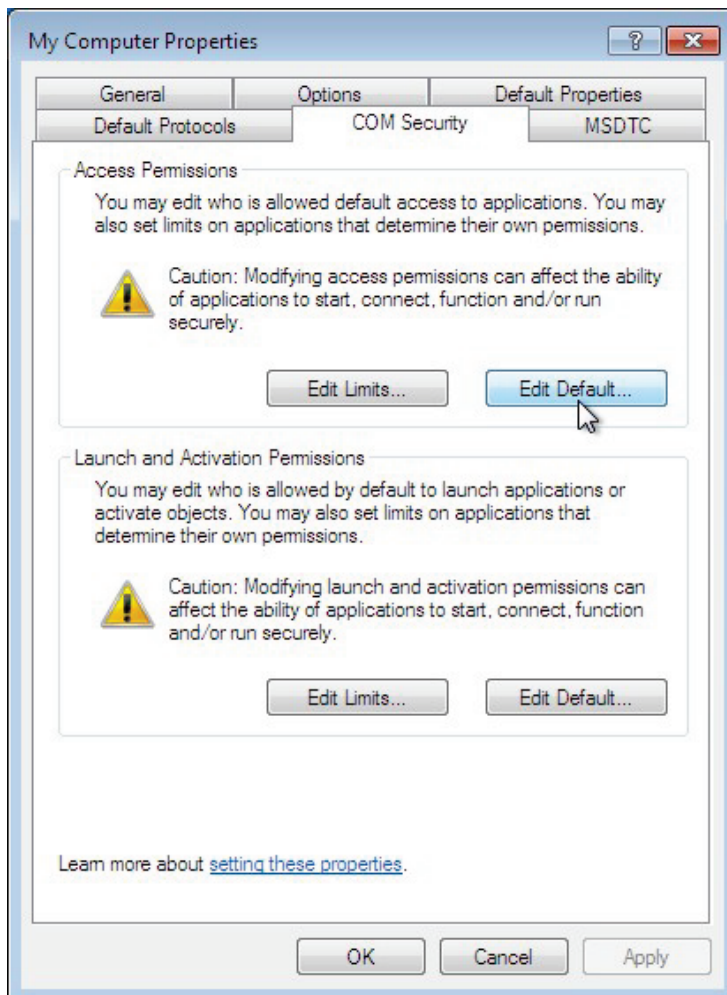
1. Go to the **START** menu and type **dcomcnfg** to activate the **Component Services** dialog box.



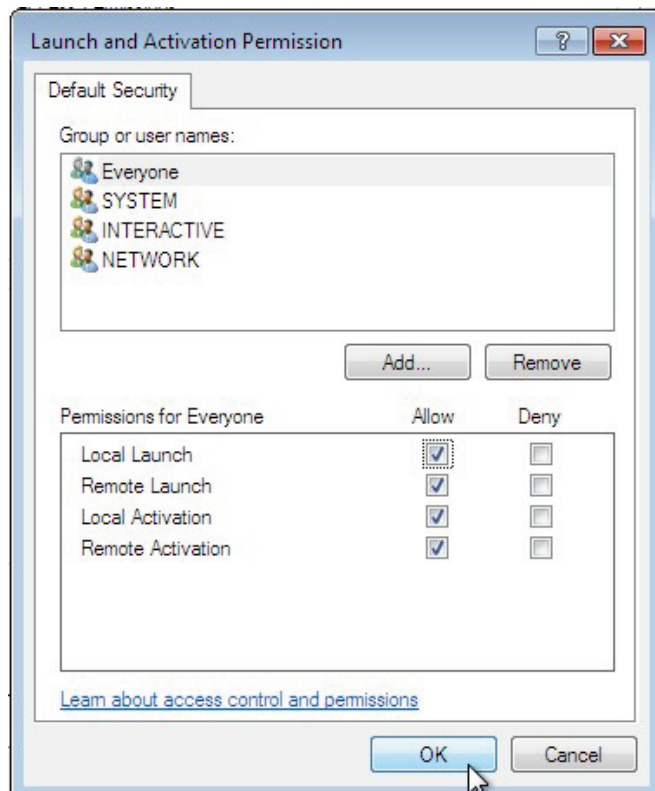
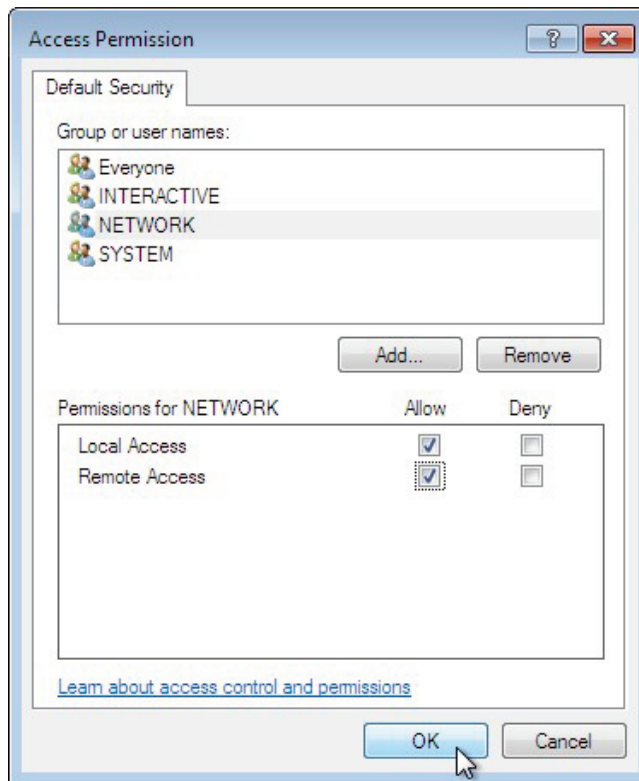
2. Right click **My Computer** under **Console Root** → **Component Services** → **Computers**, and click **Properties** to activate the **My Computer Properties** dialog box.



3. Click the **COM Security** tab and edit who is allowed by default to access, launch, or activate the applications or objects.

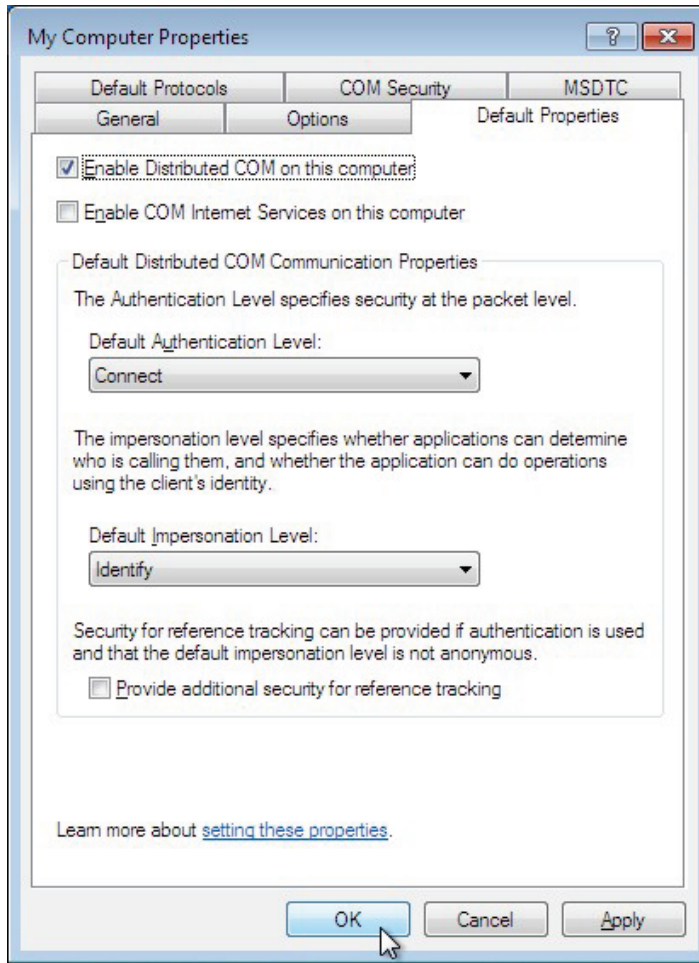


4. Add **Everyone**, **INTERACTIVE**, **NETWORK**, and **SYSTEM**, and set **Allow** permission to all of these groups.

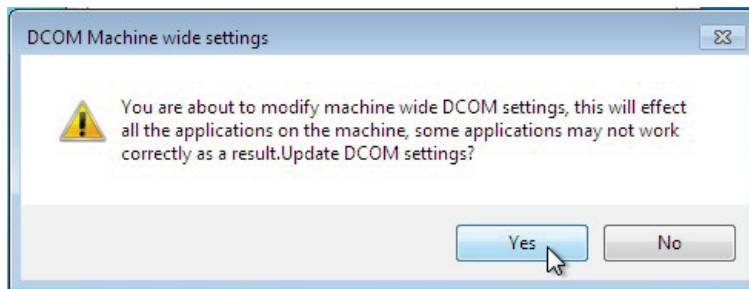




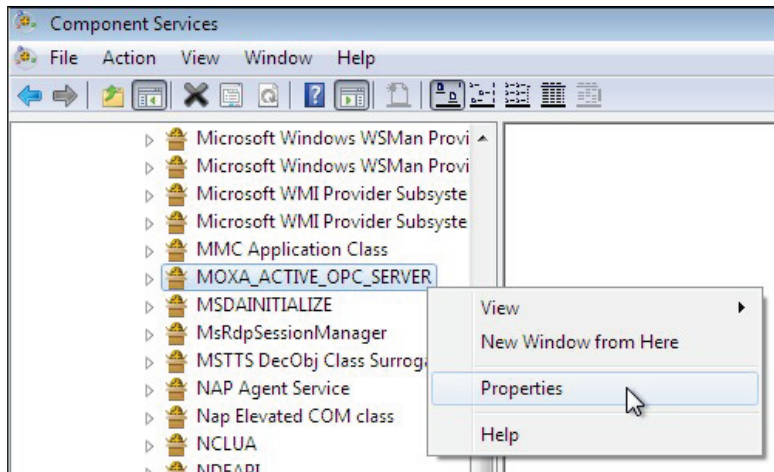
5. Click the **Default Properties** tab and check if the settings are the same as shown in the screenshot below.



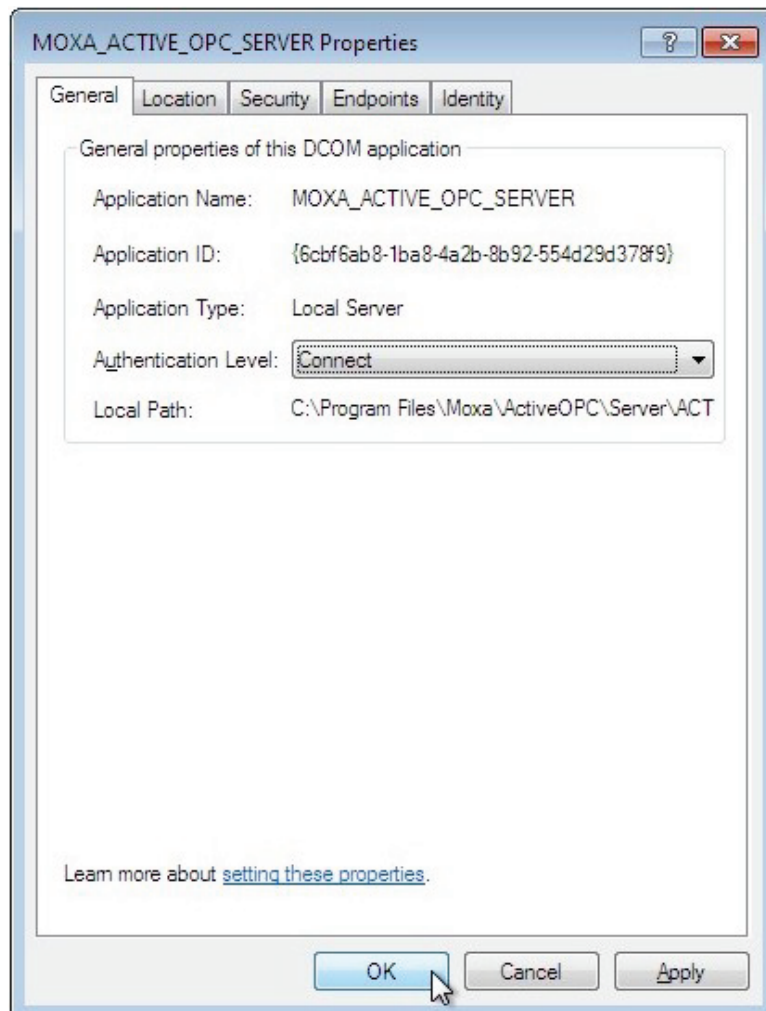
6. Click **Yes** when the following warning message appears.



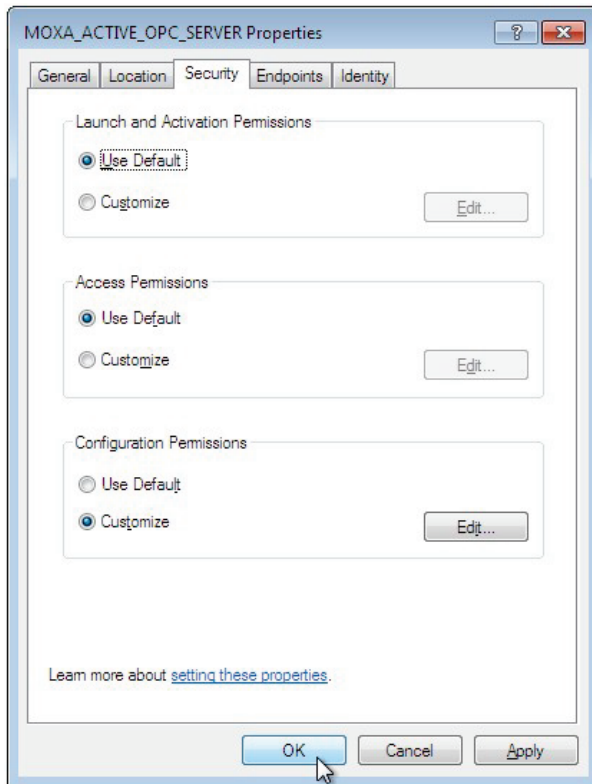
7. Go back to the **Component Services** dialog box, and right click **MOXA\_ACTIVE\_OPC\_SERVER** under **Console Root** → **Component Services** → **Computers** → **My Computer** → **DCOM Config**, and then click **Properties**.



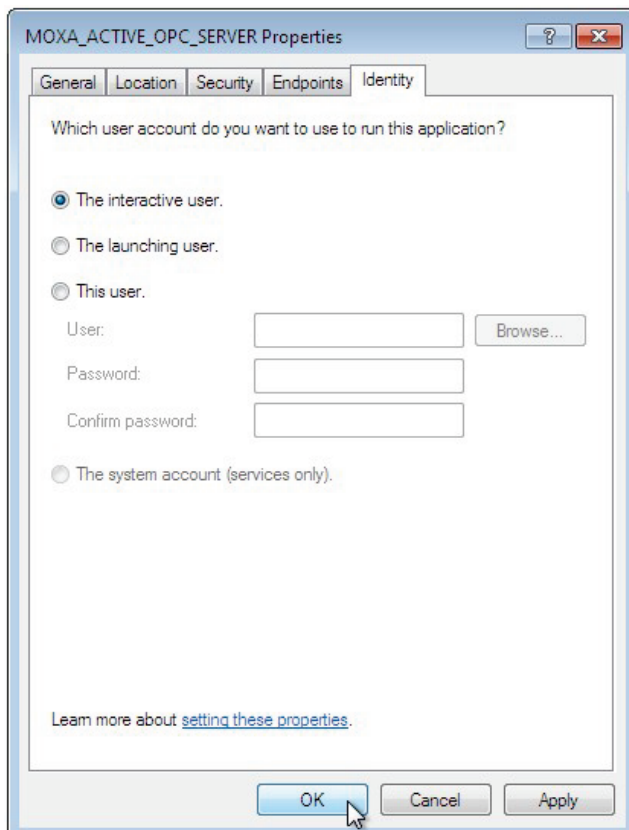
8. Click the **General** tab, and set the **Authentication Level** to **Connect**.



- Click the **Security** tab. You may either apply the default settings of Access, Launch, and Activation Permissions to the Active OPC Server or customize the permission settings. If you would like to customize the settings, make sure that **Everyone, INTERACTIVE, NETWORK**, and **SYSTEM** are added, and that the permission for these groups is set to **Allow**.



- Click the **Identity** tab and make sure **The interactive user** is selected. If the Active OPS Server is running as a Windows service, **The system account** is selected. Now DCOM is ready to accept all incoming connections.



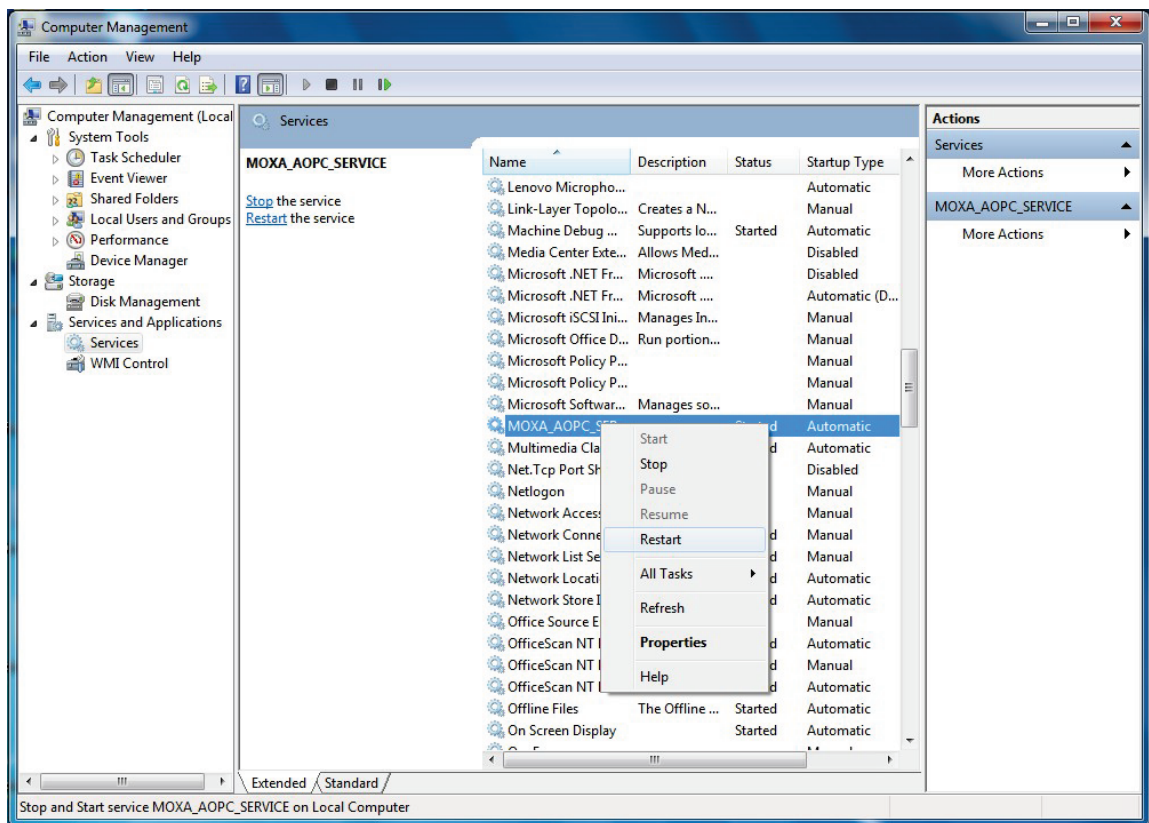
## Run Active OPC Server

After the installation is finished, run Active OPC Server from the Windows Start menu: **Start** → **Program** → **Files** → **MOXA** → **IO Server** → **ActiveOPC** → **ActiveOPC**.

**NOTE** We recommend turning off Windows Firewall to check if the Active OPC Server is running correctly at the first time. If yes, turn on Windows Firewall and check it again. If Active OPC Server does not receive any tag after you turn on Windows Firewall, add ActiveOPC.exe and OPCEnum.exe in the Firewall Inbound Rules, and set them to Allow for Private, Public, and Domain network profiles.

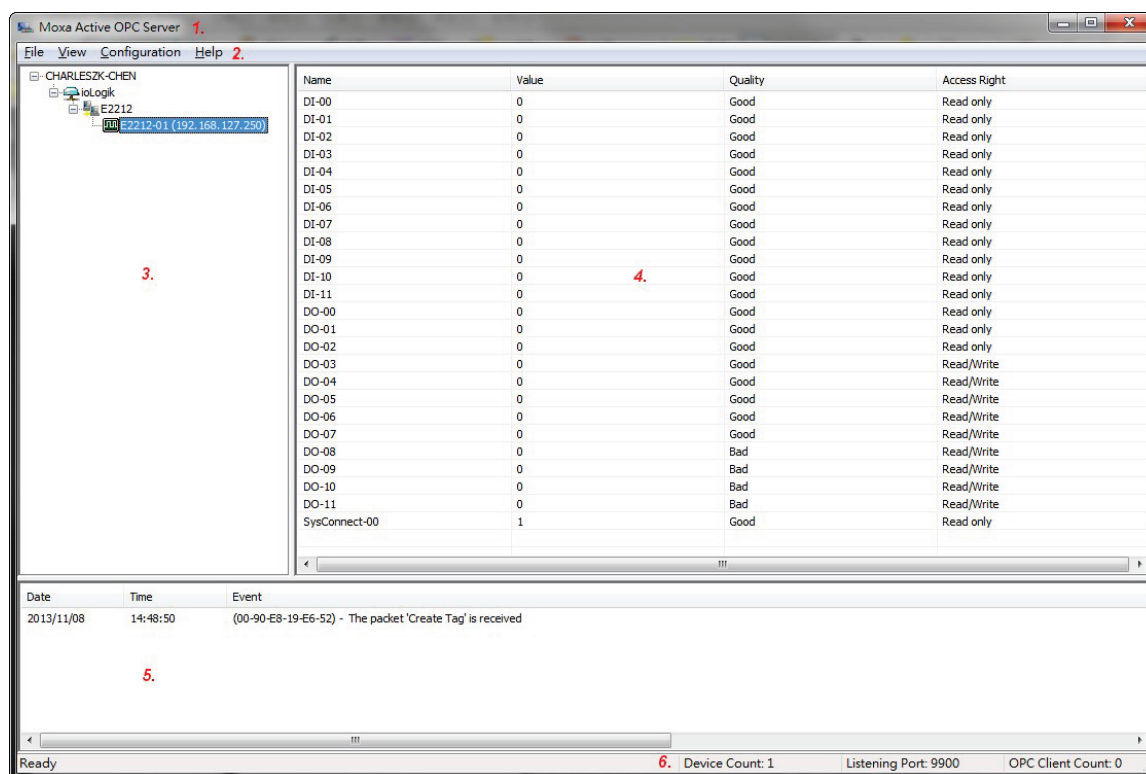
## Restart Active OPC Server Service

Be sure to close Active OPC Server window before restart Active OPC Server service. Find **MOXA\_AOPC\_SERVICE** in the service list in **Computer Management Console**. Right click **MOXA\_AOPC\_SERVICE** and then click **Restart**, Active OPC Server will stop and restart.



## Main Screen Overview

Active OPC Server's main screen displays a figure of the mapped I/O device with the status of every I/O tag. Note that configuration and tags are not available until the device creates the tags.



### Active OPC Server Main Screen

1. Title

2. Menu bar

3. Navigation panel

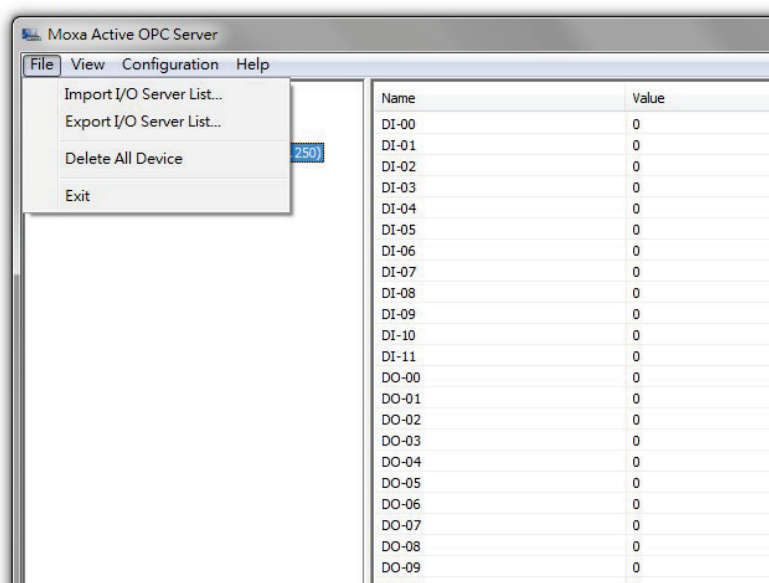
4. Tag Window

5. Log Monitor

6. Status bar

## File

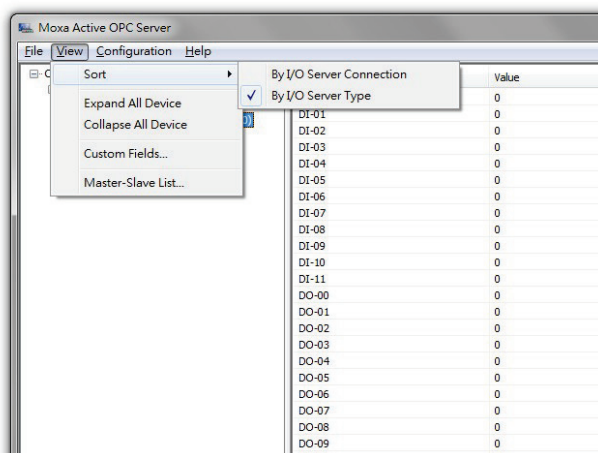
From the **File** menu, you can export the list of devices that are currently displayed in the navigation panel. You also can import a list into the Active OPC Server.



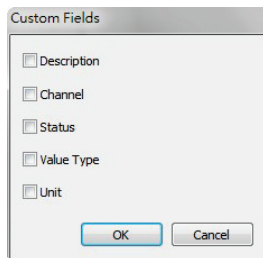
The file will have the .mdb extension, and can be opened using Microsoft Office Access. The server list includes the current tag information of the mapped device.

## View

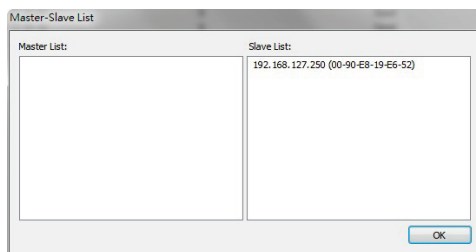
The operations listed below can be accessed from the View menu.



- **Sort** allows the I/O server list in the navigation panel to be sorted by connection or type (model).
- **Expand All Device** allows the I/O server devices in the navigation panel to be displayed.
- **Collapse All Device** allows the I/O server devices in the navigation panel to be hidden.
- **Custom Fields** allows you to define the tag attributes to be displayed in the tag window.

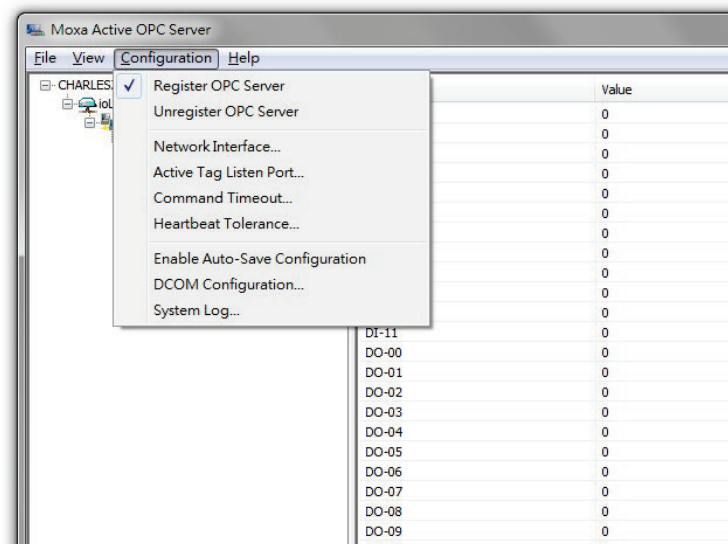


- **Master-Slave List** shows the Master and Slave devices that are currently connected to the Active OPC Server. The Master list shows the IP address of the Master device, which will send commands to the Slave devices. The Slave list shows the IP address and MAC address of the I/O devices at the remote sites.



## Configuration

The operations listed below can be accessed from the **Configuration** menu.



- **Register OPC Server** allows you to register the DCOM components to the Windows system.
- **Unregister OPC Server** allows you to cancel the registration of the DCOM components from the Windows system.
- **Network Interface** allows you to select a network interface on the Active OPC Server for receiving connections from the remote devices.
- **Active Tag Listen Port** allows you to define the preferred TCP socket port for receiving active tags from the remote devices.

- **Command Timeout** allows you to define the socket timeout interval (Port: 9500 and 9900) for controlling output channels on remote devices.
- **Heartbeat Tolerance** allows you to define an additional timeout interval to wait for a heartbeat signal from remote devices.
- **Enable Auto-Save Configuration** allows Active OPC Server to save configuration automatically whenever a new I/O device connects to Active OPC Server.
- **DCOM Configuration** allows you to launch the Windows DCOM configuration utility.
- **System Log** allows you to enable or disable the Active OPC Server system log function.



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## Tag Generation

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Active OPC Server will automatically receive active tags from remote devices once the tags are created. Refer to I/O device user's manual to learn how to create active tags with the configuration utility.