Active OPC Server User's Manual

Second Edition, November 2013

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Active OPC Server User's Manual

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1 Introduction

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

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

Port	Туре	Usage	
502	ТСР	Modbus Communication	
4800	UDP	oAdmin searching Active OPC Server	
9300	ТСР	ioAdmin communicating with Active OPC Server	
9500	ТСР	Active OPC Server protocol	
9900	ТСР	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

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.



 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.

General	Options	Default Properties
Default Protocols	COM Secur	ity MSDTC
Access Permissions -		
You may edit who is also set limits on ap Caution: M	allowed default access plications that determine lodifying access permiss	s to applications. You m e their own pemissions. sions can affect the abili
of applicati securely.	ions to start, connect, fi	unction and/or run
	Edit Limits	Edit Default
		2
aunch and Activation	Permissions	
You may edit who is activate objects. Yo datemina their own	s allowed by default to la ou may also set limits on	aunch applications or applications that
You may edit who is activate objects. Yo determine their own Caution: M affect the a and/or run	s allowed by default to k ou may also set limits on permissions. lodifying launch and ac ability of applications to securely.	aunch applications or applications that tivation permissions can start, connect, function
You may edit who is activate objects. Yo determine their own Affect the a and/or run	s allowed by default to k ou may also set limits on permissions. Iodifying launch and ac ability of applications to securely.	aunch applications or applications that tivation permissions can start, connect, function Edit Default
You may edit who is activate objects. You determine their own affect the a and/or run	a allowed by default to k ou may also set limits on permissions. Iodifying launch and act ability of applications to securely. Edit Limits	aunch applications or applications that tivation permissions can start, connect, function Edit Default

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

cess Permission		?
Default Security		
Group or user names:		
& Everyone		
S NETWORK		
M STSTEM		
	Add	Remove
Permissions for NETWORK	Allow	Deny
Local Access	V	
Remote Access	V	
Learn about access control and	permissions	
	ОК	Cancel
	- Children	

efault Security Group or user names: Everyone SYSTEM SYSTEM SYSTEM SYSTEM SYSTEM		
Pamissions for Eveniona	Add	Remove
Local Launch		
Local Activation Remote Activation		
Leam about access control and	d permissions	
	ОК	Cance

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

	COM Secu	rity MSDTC
General	Options	Default Properties
Enable Distributed	COM on this computer	
Enable COM Inter	net Services on this comp	outer
Default Distributed (COM Communication Prop	perties
The Authentication	Level specifies security a	t the packet level.
Default Authentica	ation Level:	
Connect		•
who is calling them, using the client's ide Default Impersona	and whether the applicat entity. ition Level:	tion can do operations
who is calling them, using the client's ide Default <u>I</u> mpersona Identify	and whether the applicat entity. ation Level:	tion can do operations
who is calling them, using the client's ide Default Impersona Identify Security for reference	and whether the applicat entity. ation Level: etracking can be provid	tion can do operations
who is calling them, using the client's ide Default Impersona Identify Security for reference and that the default	and whether the applicat entity. etion Level: the tracking can be provid impersonation level is no	ed if authentication is use
who is calling them, using the client's ide Default Impersona Identify Security for reference and that the default	and whether the applicat entity. ation Level: the tracking can be provid impersonation level is no onal security for reference	ed if authentication is use t anonymous.
who is calling them, using the client's ide Default Impersona Identify Security for reference and that the default Provide additio	and whether the applicat entity. etion Level: ee tracking can be provid impersonation level is no onal security for reference	tion can do operations tion can do operations t authentication is use t anonymous. tracking
who is calling them, using the client's ide Default Impersona Identify Security for reference and that the default Provide addition	and whether the applicat entity. stion Level: the tracking can be provid impersonation level is no onal security for reference	ed if authentication is use t anonymous. tracking
who is calling them, using the client's ide Default Impersona Identify Security for reference and that the default Provide addition am more about sett	and whether the applicat entity. etion Level: ee tracking can be provid impersonation level is no onal security for reference	ed if authentication is use t anonymous.
who is calling them, using the client's ide Default Impersona Identify Security for reference and that the default Provide addition am more about sett	and whether the applicat entity. tion Level: the tracking can be provid impersonation level is no onal security for reference ing these properties.	ed if authentication is use t anonymous. tracking

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



 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.

ieneral	Location S	ecurity Endpoints Identity
Gene	ral properties o	of this DCOM application
Арр	lication Name:	MOXA_ACTIVE_OPC_SERVER
Application ID:		{6cbf6ab8-1ba8-4a2b-8b92-554d29d378f9}
Арр	lication Type:	Local Server
Auth	nentication Lev	vel: Connect 🔹
Loc	al Path:	C:\Program Files\Moxa\ActiveOPC\Server\ACT
Leamn	10re about seti	ting these properties.
Leam n	iore about <u>set</u> t	ting these properties.

9. 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.

Launch and Activation Permis	ssions	Identity	
() Use Default			
Cu <u>s</u> tomize			<u>E</u> dit
Access Permissions			
Use Default			
Custo <u>m</u> ize			E <u>d</u> it
Configuration Permissions			
🔘 Use Defau <u>l</u> t			
Customize			Ed <u>i</u> t
eam more about <u>setting these pr</u>	roperties.		

10. 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.

MOXA_ACTIVE_OPC_SER	VER Properties	? 💌
General Location Secu	urity Endpoints Identity	
Which user account do y	you want to use to run this applica	ation?
The interactive user.		
The launching user.		
🔘 This user.		
User:		Browse
Password:		
Confirm password:]
The system account	(services only).	
Leam more about <u>setting</u>	these properties.	
	OK Cancel	Apply

Run Active OPC Server

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

		1916 or fail			
CHARLESZK-CHEN	Name	Value		Quality	Access Right
DLOGIK	DI-00	0		Good	Read only
□ == C2212 □ == C2212-01 (192 16	DI-01	0		Good	Read only
	DI-02	0		Good	Read only
	DI-03	0		Good	Read only
	DI-04	0		Good	Read only
	DI-05	0		Good	Read only
	DI-06	0		Good	Read only
	DI-07	0		Good	Read only
	DI-08	0		Good	Read only
1.12	DI-09	0		Good	Read only
3.	DI-10	0	4.	Good	Read only
	DI-11	0		Good	Read only
	DO-00	0		Good	Read only
	DO-01	0		Good	Read only
	DO-02	0		Good	Read only
	DO-03	0		Good	Read/Write
	DO-04	0		Good	Read/Write
	DO-05	0		Good	Read/Write
	DO-06	0		Good	Read/Write
	DO-07	0		Good	Read/Write
	DO-08	0		Bad	Read/Write
	DO-09	0		Bad	Read/Write
	DO-10	0		Bad	Read/Write
	DO-11	0		Bad	Read/Write
	SysConnect-00	1		Good	Read only
ate Time	Event				
ate Time 013/11/08 14:48:50	Event (00-90-E8-19-E6-52) - The packet 'Create	Tag' is received			
5.					
			0		

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

Menu Items

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.

e View Configuration Help		
Import I/O Server List	Name	Value
Export I/O Server List	DI-00	0
	DI-01	0
Delete All Device	DI-02	0
Exit	DI-03	0
LAIL	DI-04	0
	DI-05	0
	DI-06	0
	DI-07	0
	DI-08	0
	DI-09	0
	DI-10	0
	DI-11	0
	DO-00	0
	DO-01	0
	DO-02	0
	DO-03	0
	DO-04	0
	DO-05	0
	DO-06	0
	DO-07	0
	DO-08	0
	DO-09	0
	0.00 10	

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.

ile <u>V</u> i	ew <u>C</u> onfiguration <u>H</u> elp		
⊒ C	Sort +	By I/O Server Connection	Value
0	Expand All Device	✓ By I/O Server Type	0
	Expand All Device	DI-01	0
	Collapse All Device	DI-02	0
	Curtom Fields	DI-03	0
	custom neids	DI-04	0
	Master-Slave List	DI-05	0
		DI-06	0
		DI-07	0
		DI-08	0
		DI-09	0
		DI-10	0
		DI-11	0
		DO-00	0
		DO-01	0
		DO-02	0
		DO-03	0
		DO-04	0
		DO-05	0
		DO-06	0
		DO-07	0
		DO-08	0
		DO-09	0
		00 10	0

- 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.

Custom Fields
Description
Channel
Status
Value Type
Unit Unit
OK Cancel

• **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.

Master List:	Slave List:
	192.168.127.250 (00-90-€8-19-£6-52)

Configuration

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

e <u>V</u> iew	Co	nfiguration	<u>H</u> elp		
HARLES	1	Register OPC Server			Value
in the second		Unregister OPC Server		0	
					0
		Network Interface Active Tag Listen Port Command Timeout Heartbeat Tolerance		0	
				0	
				0	
				0	
				0	
		Enable Auto-Save Configuration		0	
				0	
		DCONTCO	miguration		0
		System La	g		0
	_			DI-11	0
				DO-00	0
				DO-01	0
				DO-02	0
				DO-03	0
				DO-04	0
				DO-05	0
				DO-06	0
				DO-07	0
				DO-08	0
			DO-09	0	
				0.00	

- 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.

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.