## **Active OPC Server Lite User's Manual**

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# **Active OPC Server Lite User's Manual**

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# 1 Introduction

Moxa's Active OPC Server Lite 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 Lite 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	12 MB (1024 MB recommended)					
Network Interface	0/100 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 (V1.12 or later)					

**NOTE** Active OPC Server Lite 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 Lite**

Active OPC Server Lite 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 Lite utility.

## **Installing OPC Core Components**

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

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 Lite, 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 Secu	rity MSDTC
Access Permissions -		
You may edit who is also set limits on app Caution: M of applicati	allowed default access olications that determin odifying access permis ons to start, connect, t	es to applications. You ma te their own permissions. sions can affect the abilit function and/or run
securely.	Edit Limits	Edit Default
		1
aunch and Activation	Permissions	
You may edit who is activate objects. Yo determine their own	allowed by default to u may also set limits or permissions.	launch applications or n applications that
You may edit who is activate objects. Yo determine their own Caution: M affect the a and/or run	allowed by default to u may also set limits or permissions. odifying launch and ac sbility of applications to securely.	launch applications or n applications that stivation permissions can o start, connect, function
You may edit who is activate objects. Yo determine their own Caution: M affect the a and/or run	allowed by default to u may also set limits or permissions. odifying launch and ad ability of applications to securely. Edit Limits	launch applications or n applications that stivation permissions can start, connect, function Edit Default
You may edit who is activate objects. Yo determine their own Caution: M affect the a and/or run	allowed by default to u may also set limits or permissions. odifying launch and ac ability of applications to securely. Edit Limits	launch applications or n applications that stivation permissions can start, connect, function

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

lefault Security		
Group or user names:		
& Everyone & INTERACTIVE & NETWORK & SYSTEM		
	Add	Remove
Permissions for NETWORK	Allow	Deny
Local Access Remote Access		
Leam about access control and	permissions	
	ОК	Cancel

inch and Activation Permis	sion	?
Group or user names:		
Serveryone		
SYSTEM		
& INTERACTIVE		
Service NETWORK		
	Add	Remove
Permissions for Everyone	Allow	Deny
Local Launch		
Remote Launch	<b>V</b>	
Local Activation	1	
Remote Activation		
Learn about access control an	d permissions	
	ОК	Cance

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

General [Enable Distributed CC [Enable COM Internet	Options DM on this computer	Default Properties
Enable Distributed CC Enable COM Internet	DM on this computer	
	Services on this compute	er
Default Distributed CON	M Communication Proper	ties
The Authentication Lev	vel specifies security at th	ne packet level.
Default Authenticatio	n Level:	
Connect		•
Identify		•
Security for reference to and that the default imp	racking can be provided personation level is not a I security for reference tra	if authentication is used nonymous. acking
	these properties	

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.

aeneral	Location Secu	urity Endpoints Identity
Gene	ral properties of th	nis DCOM application
Арр	lication Name:	MOXA_ACTIVE_OPC_SERVER
Арр	lication ID:	{6cbf6ab8-1ba8-4a2b-8b92-554d29d378f9}
Арр	lication Type:	Local Server
Auth	nentication Level:	Connect
Loc	al Path:	C:\Program Files\Moxa\ActiveOPC\Server\ACT
Leam n	nore about <u>setting</u>	<u>these properties</u> .
Leam n	nore about <u>setting</u>	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.

DXA_ACTIVE_OPC_SERVER Properties	?
General Location Security Endpoints Identity	
Launch and Activation Permissions	
() Use Default	
Customize	<u>E</u> dit
Access Permissions	
Ose Default	
Custo <u>m</u> ize	Edit
Configuration Permissions	
O Use Default	
Customize	Ed <u>i</u> t
Leam more about <u>setting these properties</u> .	
ОК	Cancel <u>A</u> pply

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_SERVER Properties	? <mark>×</mark>
General Location Security Endpoints Identity	
Which user account do you want to use to run this application	?
The interactive user.	
The launching user.	
◎ This user.	
User:	Browse
Password:	
Confirm password:	
The system account (services only).	
Learn more about <u>setting these properties</u> .	
OK Cancel	Apply

## **Run Active OPC Server Lite**

After the installation is finished, run Active OPC Server Lite 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 Lite 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.

# **Main Screen Overview**

🖳 Moxa Active OPC Server 1.												×
File System Sort View Help	2.											
📮 🛛 🗳 🛃 3.	E KA A BA		ter ter	the for			the Sta			hat had	at she tak	1.49
E- 💂 CHARLESZK-CHEN	Tag Name	Description	Value	Status	Chan	nel	Quality	R/W	Unit	Туре	Active Tag	-
□	AI-00	Al	0.001			0	GOOD	Read Only	+/-10V	double	Y	
I 192.168.127.254	AI-01	AI	0.001			1	GOOD	Read Only	+/-10V	double	Y	
<b>4.</b>	AI-02	AI	0.001			2	GOOD	Read Only	+/-10V	double	Y	
	AI-03	AI	0.000			3	GOOD	Read Only	+/-10V	double	Y	
	DI-00	DI	0	OFF		0	GOOD	Read Only	ON/OFF	boolean-bit	Y	
	DI-01	DI	0	OFF		1	GOOD	Read Only	ON/OFF	boolean-bit	Y	
	DI-02	DI	0	OFF		2	GOOD	Read Only	ON/OFF	boolean-bit	Y	
	DI-03	DI	0	OFF		3	GOOD	Read Only	ON/OFF	boolean-bit	Y	=
	DI-04	DI	0	OFF		4	GOOD	Read Only	ON/OFF	boolean-bit	Y	
	DI-05	DI	0	OFF	5	5	GOOD	Read Only	ON/OFF	boolean-bit	Y	
	DI-06	DI	0	OFF	<b>.</b>	6	BAD	Read Only	Disable	boolean-bit	Y	
	DI-07	DI	0	OFF		7	BAD	Read Only	Disable	boolean-bit	Y	
	DI-08	DI	0	OFF		8	BAD	Read Only	Disable	boolean-bit	Y	
	DI-09	DI	0	OFF		9	BAD	Read Only	Disable	boolean-bit	Y	
	DI-10	DI	0	OFF		10	BAD	Read Only	Disable	boolean-bit	Y	
	DI-11	DI	0	OFF		11	BAD	Read Only	Disable	boolean-bit	Y	
	DO-00	DO	0	OFF		0	BAD	Read/Write	Disable	boolean-bit	Y	
	DO-01	DO	0	OFF		1	BAD	Read/Write	Disable	boolean-bit	Y	
	DO-02	DO	0	OFF		2	BAD	Read/Write	Disable	boolean-bit	Y	
	DO-03	DO	0	OFF		3	BAD	Read/Write	Disable	boolean-bit	Y	
	DO-04	DO	0	OFF		4	BAD	Read/Write	Disable	boolean-bit	Y.	-
Active OPC Server initialize successfully : 2	011/05/30 17:	30:56										*
6.												
												7
		7								🔁 Clear Log	g 🚽 Save	Log
			Device C	ount :1	9500 Conne	ction	:1	Client Count :0	Start Listen	Port:9900 201	1/05/30 17:3	3:08

Active OPC Server Lite'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 Lite Main Screen
1. Title
2. Menu bar
3. Quick link
4. Navigation panel
5. Tag Window
6. Log Monitor
7. 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 Lite.



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.

**NOTE** We recommend saving the configuration when exiting the Active OPC Server.

### System

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



- **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.
- Stop Listen allows you to stop receiving active tags and I/O status updates.
- **Output Control Timeout** allows you to define the socket timeout interval 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.
- System Log Settings allows you to enable or disable the Active OPC Server system log function.
- Launch DCOM Configuration allows you to launch the Windows DCOM configuration utility.
- **Register OPC as Service** allows you to set the Active OPC Server program to run as a Windows system service.
- **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.

### Sort

The Sort menu allows the server list in the navigation panel to be sorted by connection or type (model).



#### View

The View menu shows the Master and Slave devices that are currently connected with 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.



## **Quick Links**

Quick links are provided to sort the server list and import/export configuration.



# **Tag Generation**

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.

Save the configuration of Active OPC Server Lite when exiting the program.

# **7** OPC Test Client

An OPC client software is included in the Active OPC Server Lite package for test purposes. After configuring the tags on the Active OPC Server Lite, this **ClientTest** can be launched from the Windows Start menu: **Start**  $\rightarrow$  **Program Files**  $\rightarrow$  **MOXA**  $\rightarrow$  **IO Server**  $\rightarrow$  **ActiveOPC**  $\rightarrow$  **ClientTest**.

If Active OPC Server Lite is installed locally on the same PC, select **Connect**  $\rightarrow$  **Local** from the menu bar, and then type the name of the **MOXA ACTIVE OPC SERVER** in the **Server Name** column.

Server Help		
Connect	+	Local
Disconnect		Remote
Group	- • T	
Set Delimiting Char		
Status		
WriteQVT		
Exit	_	

OPC Server	
	Force OPC 1.0a connection
Machine Name:	
Server Name:	<b>•</b>
	MOXA_ACTIVE_OPC_SERV
OK	Cancel

If the Active OPC Server Lite is installed on a remote PC, select **Connect**  $\rightarrow$  **Remote** from the menu bar. Input the host name (i.e. Moxa\_Client) or IP address and specify **MOXA ACTIVE OPC SERVER** in the **Server Name** column.

entTst erver Help			OPC 2.0 Remote Connection
Connect	•	Local	Enter Machine Name or IP Address:
Group Set Delimiting Char Status	•		192.168.127.201
/riteQVT			OK Cancel

Click on **Group**  $\rightarrow$  **Add** and specify the **Group Name** (user-defined). A blank tag monitoring screen will open.

onnect isconnect	· ]			Group Name: ioLogik	E2242	
Group	•	Add		Democrated Hadets Date:	0	(marca)
et Delimiting Char		Remove		Requested Opdate Rate.		(msecs)
Status	1		_	Deadband:	0	
VriteQVT						
Exit			_	OK	Ca	ncel

💬 GROUP: ioLogik E2242	
Update Rate = 100 DeadBand = 0.00	Â
	+

Click **Item**  $\rightarrow$  **Browse** and select the channel that needs to be monitored.

C <u>S</u> erver <u>H</u> elp	
Disconnect Group	
Item +	Browse
Set Delimiting Char WriteQVT	Add Remove
Exit	Write
	SetActiveState

OPC Item Li	st		
E224 E224 E224 E224 E224 E224 E224 E224	2-01.DO-03 2-01.DO-04 2-01.DO-05 2-01.DO-06 2-01.DO-07 2-01.DO-08 2-01.DO-09 2-01.DO-10 2-01.DO-10 2-01.DO-11 2-01.SysConnect-00	OK Add Item	
GROUP	: ioLogik E2242		8
DeadBan			ĥ
11:42:36 11:42:36	E2242-01.Al-00 E2242-01.Al-01 E2242-01 DO-11	0.0008 (Quality Good) 0.0011 (Quality Good) FALSE (Quality Good)	
10:48:13		These (adding along)	

To write to the output channel, specify an output channel, and then select **Item**  $\rightarrow$  **Write** from the menu bar.

📴 GROUP	: ioLogik E2242	
Update Ra	ate = 100 d = 0.00	A
11:44:37	E2242-01.AI-00	0.0011 (Quality Good)
11:44:37	E2242-01.Al-01 E2242-01 DO-11	0.0011 (Quality Good) EALSE (Quality Good)
10,40,13		
		-

C <u>S</u> erver <u>H</u> elp	
Disconnect	1
Group •	
Item +	Browse
Set Delimiting Char WriteQVT	Add Remove
Exit	Write
	SetActiveState

New Value TRUE FALSE	
© FALSE	
🔲 Asynchronous Write	
OK Cancel	

📴 GROUP	: ioLogik E2242	
Update Ra	ate = 100 d = 0.00	<u>^</u>
11:46:38 11:46:38	E2242-01.AI-00 E2242-01.AI-01	0.0011 (Quality Good) 0.0011 (Quality Good)
19:46:35	E2242-01.DO-11	TRUE (Quality Good)
		-