

Advantech AE Technical Share Document

Date	2015 / 12 / 30	SR#	1-2356787815	
Category	■ FAQ □ SOP	Related OS	Microsoft Windows7	
Abstract	WebAccess OPC UA Driver Configuration – Security Policies is None			
Keyword	WebAccess, OPC UA			
Related Product	N/A			

Problem Description:

WebAccess user requires using WebAccess OPC UA client to communicate with KEPWare OPC UA Server. In order to find out tag addresses in KEPWare OPC UA Server, user has to use 3rd party software UaExpert OPC UA Client.

Software Required:

- 1. KEPWare OPC UA Server (refer to step 1 ~ 16)
- 2. Unified Automation UaExpert OPC UA Client (refer to step 17 ~ 32)
- 3. WebAccess also acts as OPC UA Client (refer to step 33 ~ 38)

Brief Solution:

KEPWare OPC UA Server Installation and Configuration: (step 1 ~ 16)

1. KEPWare OPC UA Server Download Link:

https://my.kepware.com/mykepware/Downloads.aspx



2. Click "Next" to start installation



3. Click "I agree..." and then click "Next" to continue

KEPServerEX 5 Setup	X
End-User License Agreement Please read the following license agreement carefully	(È)
KEPWARE, INC. SOFTWARE END-USER LICENSE AGREEMENT	^
By clicking the accept box, or using the Software referenced in this Agreement, you have agreed to the terms and conditions of this Software End- User License Agreement. This End-User License Agreement (" <u>Agreement</u> ") governs the use of the Kepware, Inc. software product(s) described on the attached or related invoice and any Updates (as defined below) to that software (collectively, the " <u>Software</u> ") by you as an end user (" <u>Licenser</u> ") of the Software and is a binding agreement between Kepware, Inc. as the " <u>Licensor</u> " and Licensee. This Agreement shall be binding upon and inure to the benefit of Licensor and Licensee and their T gocept the terms in the License Agreement	Ŧ
Print Back Next Ca	ncel

4. About install path, simply click "Next" to continue installation

KEPServerEX 5 Setup	
Destination Folder Click Next to install to the default folder or click Browse to choose another.	<u>í</u>
Install KEPServerEX 5 to:	
C.'Program Files (x86)'Kepware'KEPServerEX 5\	Browse
Reget Back Next	Cancel

5. Click "Next" to continue installation



B KEPServerEX 5 Setup	X
Application Data Folder Click Next to use default folder or click Browse to choose another.	B
The Application Data folder used by KEPServerEX 5 must be accessible to all is recommended that you do not change this path.	users. It
C:\ProgramData\	Browse
Reset Back Nevt	Cancel
	Conter

6. Create a shortcut, click "Next" to continue installation



7. Click "Next" to continue installation

KEPServerEX 5 Setup	
Vertical Snite Selection	
Select Vertical Suite.	(Ex
Select Vertical Suite or None. If Vertical Suite is selected, associated Drive Plug-Ins will be preselected for installation.	rs and
None	•
Back Next	Cancel

8. Select "Full Installation"





9. Click "Next" to continue installation

KEPServerEX 5 Setup	
Default Application Settings	
Select Application Settings.	(Ex
_ Security Policies	
Allow client applications to request data through Dynamic T	ag addressing
When checked, this option enables dynamic tag addressing for user grou is checked. This option may be changed later through the User Manager Server Administration's Settings.	ps. The default setting tab located in the
✓ Allow anonymous login for UA Client Sessions	
When checked, this option enables anonymous login for UA Client Sessi setting is checked. This option may be changed later through the OPC UA Server Configuration's Project Properties.	ons. The default A tab located in the
Back Next	Cancel

10. Click "Install" to continue



11. Click "Finish" to finish installation.



12. KEPServerEX5 Configuration" icon on the desktop, run it



13. Once KEPServerEx starts, OPC UA Server starts automatically.

There are two tags by default.

- Tag1: random analog tag value
- Tag2: constant analog tag

🛍 KEPServerEX - Runtime	100			-		
File Edit View Tools Runtime Help						
े 🗋 🐸 🗟 📓 🦃 🛅 🛍 😂 😁 🗠	X & B	×				
Channel1	Tag Name /	Address	Data Type	Scan Rate	Scaling	Description
Device 1	🚾 Tag1	R0001	Word	100	None	Ramping Read/Write tag used to verify client connection
Simulation Examples	纪 Tag2	K0001	Word	100	None	Constant Read/Write tag used to verify client connection
		defa	ult 2 t	ags		

14. KEPWare also located on the Windows task bar.

User allow to start/stop/reinitialize the OPC Server, or click "OPC UA Configuration" to add/delete/modify OPC UA configuration



- 15. Select "OPC UA Configuration"
 - 1. "Server Endpoints" default only connect to 127.0.0.1 with port 49320



1	UA (OPC UA Config	guration Mana	iger			٢
	Se	erver Endpoints	Trusted Clients	Discovery Servers	Ins	stance Certificates	_
		URL			Δ	Security	
	Ľ	opc.tcp://12	27.0.0.1:49320			Basic128Rsa15 (S,SE), Basic256 (S,SE)	

- Click "add" button to add this computer network card, port still 49320
- Also click "None" means no Security required.

Click "OK" to complete the configuration.

CPC UA Configuration Mana Server Endpoints Trusted Clients URL # ² opc top://127.0.0.1.49320	Endpoint Definition TCP Connection Network Adapter: Port Number:	Atheros AR8151 PCI: E Gigabit Ethernet Controll V 49320
1	Security Policies	Sign; Sign and Encrypt • Sign; Sign and Encrypt • OK Cancel Help
V Enabled	<u>R</u> emove	

Result

OPC UA Confi	guration Mana	iger			X
Server Endpoints	Trusted Clients	Discovery Servers	In	stance Certificates	
URL			A	Security	1
ç ^o opc.tcp://1	27.0.0.1:49320			Basic128Rsa15 (S,SE), Basic256 (S,SE)	
opc.tcp://1	92.168.0.101:493	20		None, Basic128Rsa15 (S.SE), Basic256 (S.SE)	

2. Currently, nothing in "Trusted Clients".

🙀 OPC UA Configur	ation Mana	ger		×
Server Endpoints Tr	usted Clients	Discovery Servers	Instance Certificates	
Client Name			/ URI	
Import	xport	Remove	Trust	View Certificate
Note: Server Runtime r	einitialization i	s required to utilize	changes.	Close 說明

16. Reinitialize the KETWare OPC UA Server

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	Configuration			
	Start Runtime Service			
	Stop Runtime Service			
	Reinitialize			
	Reset Event Log			
	Settings			
	OPC UA Configuration			
-	Quick Client			
	License Utility			
	Help			
	Support Information			
	Exit			
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- 3rd Party OPC UA Client Installation and Configuration: (step 17 ~ 32)
- 17. Run 3rd party OPC UA Client to check proper tag name e.g. uaexpert-bin-win32-x86-vs2008sp1-v1.3.1-206.exe

🕝 uaexpert-bin-win32-x86-vs2008sp1-v1.3.1-206.exe

18. Download Link:

https://www.reasoncoresecurity.com/uaexpert-bin-win32-x86-vs2008sp1-v1.3.1-206.exe-41f1741a2280a1 89854d1784836b619b49a3c1b7.aspx

19. Click "Next" to start installation



20. Click "Next" to start installation



🕞 UaExpert 1.3.1 Setup	x						
License Agreement Please review the license terms before installing UaExpert 1.3							
Press Page Down to see the rest of the agreement.							
Copyright (C) 2008-2012 Unified Automation GmbH. All rights reserved.	*						
FREEWARE DISCLAIMER: YOU SHOULD CAREFULLY READ THE FOLLOWING USER AGREEMENT AND DISCLAIMER OF WARRANTIES AND LIABILITIES ("AGREEMENT AND DISCLAIMER") BEFORE DOWNLOADING OR USING ANY FREE SOFTWARE AVAILABLE FROM UNIFIED AUTOMATION GMBH("UNIFIED"), THIS AGREEMENT AND DISCLAIMER APPLIES TO ANY AND ALL FREE SOFTWARE PRODUCED BY UNIFIED. DOWNLOADING OR USING THIS SOFTWARE INDICATES YOUR ACCEPTANCE OF THIS AGREEMENT AND DISCLAIMER. IF YOU DO NOT AGREE WITH THIS AGREEMENT AND DISCLAIMER, YOU MAY NOT	•						
If you accept the terms of the agreement, dick the check box below. You must accept the agreement to install UaExpert 1.3.1. Click Next to continue.							
✓ I accept the terms of the License Agreement							
Nullsoft Install System v2.46							
< Back Next > Can	cel						

21. Click "Next" to start installation



22. D





24. Click "UaExpert" icon on desktop to run it



25. UaExpert will generate a certificate



26. Setup Organization info and add this computer IP Address

New Application	n Instance Certificate				
Subject:					
Common Name:	UaExpert@alger-PC				
Organization:	Advantech				
Organization Unit:	Advantech				
Locality:	XinDian				
State:	New Taipei				
Country:	Ta				
IP Addresses:	192.168.0.101				
Certificate Settings RSA Key Strength: Password protec Password:	2048 bits Vertificate Validity: 1 Year Vertificate Year Vertificate Validity: 1 Year Vertificate Validity: 1 Year Vertificate Validity: 1 Year Vertificate Year Vertifi				

27. Click "+" button to add a server



- 28. Click "+ <Double click to Add Server...> for adding OPC UA Server e.g. opc.tcp://192.168.0.101:49320
 - Click "Anonymous" in Authentication Settings

. Click "Connect Automatically"

Configuration Name	
Discovery Advanced	
Endpoint Filter: No Filter	▼
🔍 Local	Valu
4 🐼 Local Network	
Microsoft Ter	rminal Services
Microsoft Wi	ndows Network
A Custom Discover	rv letwork
Souple clip	ck to Add Server >
🕞 Recently Used	
	Enter Uri
	Enter the Url of a computer with discovery service running:
	opc.tcp://192.168.0.101:49320
	opc.tcp://192.168.0.101:49320
	ope.tcp://192.168.0.101.49320 OK Cencel
Authentication Settings	opc.tcp.//192.168.0.101.49320 OK Cancel
Authentication Settings	opc.txp://192.168.0.101.49320 OK Cancel
Authentication Settings Anonymous	ope: http://192.168.0.101.49320 OK Cancel
Authentication Settings Anonymous Username	ope: http://192.168.0.101.49320 OK Cancel
Authentication Settings Authentication Settings Usemane Password	ope: trp://192.168.0.101.49320 OK Cancel
Authentication Settings Authentication Settings Username Password	opc.txp://192.168.0.101.49320 OK Cencel
Authentication Settings Anonymous Username Password Certificate	opc.txp://192.168.0.101.49320 OK Cancel
Authentication Settings Anonymous Username Password Certificate Private Key	ope: http://192.168.0.101.49320 OK Cancel
Authentication Settings Authentication Settings Anonymous Username Password Certificate Private Key	ope: http://192.168.0.101.49320 OK Cancel
Authentication Settings Authentication Settings Anonymous Username Password Certificate Private Key Connect Automatically	opc.txp://192.168.0.101.49320 OK Cencel
Authentication Settings Anonymous Usemame Password Certificate Private Key Connect Automatically	opc.txp://192.168.0.101.49320 OK Cancel

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29. Success and user will be able to view all certificates



30. This example will focus in None (based on KEPWare OPC UA Configuration) Click "None-None..." and user will find out no certificate of server

Add Server	×	Certificate Validation		8 X
Configuration Name Discovery Advanced		Validating the certificate BadCertificateUntr	of server KEPServerEX/UA@alger-PC ' returned an error: nsted	
Endpoint Filter: No Filter	-	Certificate Chain		
		Name	Trust Status Server Untrusted	
		Certificate Details		
 KEPServerEX/UA@alger-PC (opc.tcp) 	=	Subject	KEPServerEX/IIA Server	<u></u>
None - None (uatcp-uasc-uabinary)		Organization	Unknown	
Basic128Rea15 - Sign (uatcp-uasc-uabinar Basic128Rea15 - Sign & Encrupt (uatcp-uasc-uabinar		OrganizationUnit		
Basic256 - Sign (uatcp-uasc-uabinary)		Locality		
Basic256 - Sign & Encrypt (uatcp-uasc-uasc)		State		
😒 Recently Used	Ŧ	DomainComponent	IVV algor PC	=
4		Issuer	aigerre	

31. Click "TrustServer Certificate" button

	Validating the certificate	of server KEPServerEX/UA@alger-PC' returned an error:
9	BadCertificateUntr	usted
ertifi	icate Chain	
Nan	ne	Trust Status
	KEPServerEX/UA	Server Untrusted
ertifi	icate Details	
Subj	ject	KEDCanvarEV/IIA Canvar
	Organization	Linknown
	Organization	Onkiowi
	ocality	
	State	
č	Country	TW
ľ	DomainComponent	alger.PC
lssu	er	agene
(Common Name	KEPServerEX/UA Server
(Organization	Unknown
(OrganizationUnit	
l	Locality	
9	State	
0	Country	TW
[DomainComponent	alger-PC
Vali	dity	
1	Valid From	週三 十二月 30 00:37:16 2015
`	/alid To	週六 十二月 27 00:37:16 2025
Info	Control Neurolanov	12072654
-	Serial Number	12C/30FA
	Signature Algorithm	KSA-SHAL
	Lipher Strength	RSA (1024 bit) Trust Server Certificat



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The certificate of s	erver KEPServerEX/UA@alger-PC' was validated su	ccessfully.
Good		
ertificate Chain		
Name	Trust Status	

- 32. Drag tag from left to middle (Data Access View) to monitor tag value.
 - Click tag name on left hand side (Address Space) in order to monitor its attributes.
 - It is important to know tag's "NamespaceIndex", "IdentifierType" and "Identifier" because this will apply to WebAccess Tag Property.



WebAccess Configuration: (step 33 ~ 38)

- 33. No need to turn off 3rd party UaExpert OPC UA client
- 34. ComPort Configuration

	ł	Comport Property Delete Add Device	
Project/Node	-		
UPC-UA		Comport : OPC-UA • scada • 1	
Scada		Interface Name	TCPIP
OPCUA ≔		Comport Number	1
Tag1		Description	Description
<u>1ag2</u>			•
Device Driver		Scan Time	1 Second
<u>A101</u>		Timeout	1000 MilliSecond
ABMLGX		Data: Count	2
ABPLC5		Retry Count	3
ABSLC5		Auto Recover Time	60 Second
AceFAM3			
ADAM2K		Backup Port Number	0
ADAM4K		Scan Devices in Parallel	No

35. Device configuration: based on KEPWare OPC UA Configuration

Note:

WebAccess "Security Policy" and "Security Mode" must be matched e.g. if "Security Policy" is 0, then "Security Mode" must also be 0.



	Device Property [Cancel] Submit
Device Name	OPCUA
Description	
Unit Number	0
Device Type	OPCUA V
	IP Address 192.168.0.101
Primary	Port Number 49320
	Device Address if other than Unit Number
	IP Address
Secondary	Port Number
	Device Address
User Name/Password/Certificate/CertPassword	admin/admin/webaccess.pfx/1234
Security Policy (0:None, 1:Basic128Rsa15, 2:Basic256)	0 Security Mode 0:None, 1:Sign, 2:Sign&Encrypt) 0
Authentication Decoymous, 1:UserName)	0 Create Monito Parms per Communication 10000
	🕰 OPC UA Configuration Manager
	Server Emissions Trusted Cliente Discovery Server Instance Cetificates
	URL Security
	5 ⁻² apr. top://127.0.01.45920 Basic 128Res 15 (S.SE). Basic 256 (S.SE) Basic 128Res 15 (S.SE). Basic 256 (S.SE)
5 🖭 🛷 🙆 🔛	Eux.

36. Tag1 property: (based on UaExpert tag attribute)

- Address: must match OPC UA NodeID
 - Address format: [NameSpace Index]:[Identifier Type]:[Identifier]
 - Identifier Type: 0 for numerical; 1 for string
- note: must use ":" to separate these three settings

			Attribu	ites	é	9
OPCUA • Tag1			9	[%] [%]		1
Tag Type	Point (analog)		Attrib	oute lodeId	Value NodeId	1
Tag Name	Tag1			NamespaceIndex IdentifierType Identifier	2 String Channel1 Device1 Tec1	
Description	Analog point			lodeClass	Variable	ł
Scan Type	Constant Scan	\checkmark	D	rowseName isplayName	2, "lag1" "en", "Tag1" "en" "	1
Address	2:1:Channel1.Device1.Tag1	-	W	/riteMask /rod//riteMask	0	1
Conversion Code	AUTO			servinteiviask	Ū.	

37. Tag2 property



38. ViewDAQ Point Info

Tag 1 Value:



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Tag 2 Value: Display both UaExpert and WebAccess Point Info

