ADVANTECH Enabling an Intelligent Planet

# **Advantech SE Technical Share Document**

Date	2020 / 03 / 5			ESRP-PCS-WISE	710 / ESRP-CSS-UNO series			
Catagony	🗆 FAQ 🗆 SOP	Related Produ	uct	/ ESRP-PCS-ECU series /				
Category	■ Driver Tech Note ESRP-PCS-ADAM3600							
Abstract	How to connect Edge	Link to Kepware C	OPC l	JA server via OF	PC UA Client driver			
Keyword	WISE-PaaS EdgeLink ,	/ OPC UA Client / (	OPC	UA Server				
Related OS	Linux image							
		<b>Revision History</b>	/					
Date	Version	Author		Reviewer	Description			
2020/02/5	V1 0	Plack Chang		NickLin	WISE-PaaS/EdgeLink			
2020/03/5	V1.0	DIACK CHAINS		INICK LIU	Studio V2.6			

#### Problem Description & Architecture:

How to connect to OPC UA server via EdgeLink OPC UA Client driver OPC UA server  $\rightarrow$  Kepware software



# Brief Solution - Step by Step: Kepware OPC UA server software

- 1. Install Kepware(KEPServerEx5) and "OPC UA Local Discovery Server 1.02" software
- 2. Open OPC UA Configuration on the Kepware software





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## 3. Add an endpoint on the Server Endpoint: "opc.tcp://172.16.12.126:49320"

OPC UA Co	nfiguration Manage	er		•	•	×
Server Endpoin	Trusted Clients	Discovery Servers	Trusted Servers	Instance Certifica	ites	
URL	Endpoint Definition	1			×	
Soberta e construction e constructio	TCP Connection Network Ada Port Nun	opter: Intel(R) I210 aber: 49320 opc.tcp://172	0 Gigabit Network C	Connection	>	
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Note: Server Ru	untime reinitialization i	s required to utilize o	changes.	C	lose	Help

1úa	OPC UA Confi	guration Manag	er			×
Se	erver Endpoints	Trusted Clients	Discovery Servers	Trusted Servers	Instance Certificates	
	URL		1	Security		
	50 opc.tcp://1	27.0.0.1+49320		Basic 128R sa 15	5 (S,SE), Basic 256 (S,SE)	
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- 2. EdgeLink Studio Setting
- 2-1. Create one Project of EdgeLink Studio.
- 2-2. Select WISE-710 device on the EdgeLink Studio, and enter IP Address.



2-3. Add OPC UA driver on the TCP and setting the communication parameter. Device Type: OPC UA

Unit Number: Different from other devices in one interface is ok. IP Address and Port Number: OPCUA server's IP and Port.

1 Mar 1 A Mar 2 A Mar	Advantech EdgeLi	nk Studio	
E Project Help			⇔ (0)
		Exact trace Device	
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Project a Deploy	4 Option	A	
Project Configuration «	🛄 OPC client-test 🛛 🔯 W	ISE-710-A2(OPC client-test)	
OPC UA Client     OPC Glant test 172 16 12 145	Apply X Disc	ard	
🚊 🖳 Data Center	General Information		4
	Enable		
COM1(Disable)	Name:	OPCUA	
COM3(Disable)	Device Type:	OPC UA ~	
	Device Model	Double Click to Select Device Template	
IO Tag	Unit Number:	1	
Calculation Tag	Tag Write Type:	Single Write 🔹	
User Tag Data Storage 	Description:		U
Connectivity	Add device name as pr	efix to IO tags	
	A TCP/IP		
	IP/Domain:	172.16.12.126	
5 7	Port Number:	49320	
	Extention Properties		•

Use URL as Connection Address: If OPCUA server must be connected by its URL, you can choose this. Security Policy and Authentication Setting: Follow the OPCUA server.

Certificate and Private Key: We have self-authentication files by default. If customer needs to use the special file, they can choose in here.

Cyclic rate of subscribing data changes: By default, the mode of our opcua master is Asking-Answer. If choosing this, the mode we use will be: We send a message to OPCUA server to tell it to check itself by cycle if there is some data changed. When some data changing, server will tell us, we don't need to ask server any more.



#### 2-4. Add tag of OPC UA server: ID=ns=2, Item ID=<string>=Channel1.Device1.Tag1

#### Kepware OPC UA server tag: OPC O Edit File View Tools Help D 🛎 🖬 😹 🖀 🛃 🐰 🐚 🗟 🗙 □-: i Kepware.KEPServerEX.V5 Item ID Data Type Value Timestam \_\_\_\_\_\_System \_\_\_\_\_Channel1.\_Statistics Channel1.Device1.Tag1 Word Word 10657 01:13:29.86 0 01:13:09.35 Channel1.\_System Item Properties × Data Type Examples.\_Statistics Data Type Examples\_statistics Data Type Examples\_System Data Type Examples.16 Bit Devic Data Type Examples.16 Bit Devic General $\downarrow$ $\rightarrow$ Access Path: OK Data Type Examples.16 Bit Devic Channel1.Device1.Tag1 Item ID: Data Type: • 7 Active Date 3/30/2020 3/30/2020 3/30/2020 3/30/2020 3/30/2020 3/30/2020 3/30/2020 3/30/2020 3/30/2020 3/30/2020 3/30/2020 3/30/2020 3/30/2020 3/30/2020 3/30/2020 3/30/2020 3/30/2020 Time 1:13:09 AM Advanced 1:13:09 AM ID Value Description 1:13:09 AM Item ID 1:13:09 AM 2 Item Value 10652 N/A Item Quality Item Timestamp Item Access Rights Server Scan Rate Item Description DDE Access Name 192 01:13:27 3 10 Ramping Rea... Channel1\_De... R0001 3 4 5 6 101 5003 5005 N/A N/A N/A N/A N/A 1:13:09 AM 1:13:09 AM 1-13-09 AM 1:13:09 AM

#### EdgeLink tag





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The address grammar is: ns=<Namespace Index>; <type>=<value> Example:

Address Type	Namespace Index	Example
Numeric	2	ns=2;i=1234
String	2	ns=2;s=Device.System_Tag.#SYS_TIME_SECOND
GUID	0	ns=0;g={8ACE8827-ECC3-4c9a-8032-CA1E9957A8E8}
Opaque	2	ns=2;b=M/RbKBsRVkePCePcx24oRA==

### 2-6. please press "Project Download" and download project to WISE-710

2-7. it will show Client Name "DevOPCUA" on the OPC UA configuration manager, and enter "Trust"

erver Endpoints       Trusted Clients       Discovery Servers       Trusted Servers       Instance Certificates         Gent Name       /       URL       URL       URL       URL         PeroServerEx/UA Client Drive       URL/NO-3382G:MEO OPC UA Client       URL/NO-3382G:MEO OPC UA Client         WEO OPC UA Client       URL/NO-3382G:UnifiedAutomation:UaExpert         Import       Export       Bemove       Irust       View Certificate         Import       Export       Bemove       Irust       View Certificate         te:       Server Runtime reinitialization is required to utilize changes.       Close       Help         OPC UA Configuration Manager       urnum.DevOPCUAJapplcation       Help         ever Endpoints       Trusted Clients       Discovery Servers       Trusted Servers       Instance Certificates         Client Name       /       URL       URL/NO-3382G:Meo OPC UA Client       URL/NO-3382G:Meo OPC UA Client       URL/NO-3382G:Meo OPC UA Client         PEO OPC UA Client       URL/NO-3382G:Meo OPC UA Client       URL/NO-3382G:Meo OPC UA Client       URL/NO-3382G:UnifiedAutomation:UaExpert         WEO OPC UA Client       URL/NO-3382G:UnifiedAutomation:UaExpert       URL/NO-3382G:UnifiedAutomation:UaExpert         Wew Certificate       Uwew Certificate       Uwew Certificate	OPC UA Config	guration Manag	er						
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2-8. Please change to Monitor screen and connect to WISE-710, change to IO Tag and will show the value of OPC UA tag.

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ce • Device Setting Console							
Online 🖌							
line Device «	Online Monitor(OPC client-test )	×					
Online Device [0]ECU1051_Haley_261 - 172.16.12.28 [0]ECU1051_D04(Do not touch) - 172.16.1	WISE-710-A2					0 итс	
[0]UN024846 - 172.16.13.208     [0]UN024846 - 172.16.13.225     [0]WISE-6610 - 172.16.13.225     [0]WISE-6610 - 172.16.13.225	Tags	Tag	Value	Quality	Timestamp		
- III [0]RTU_000 - 172.16.13.227	I System Information	Readil O DL 0	4	Cond	2000 02 20700 42:05 0		
- 4 [0]RTU_000 - 172.16.12.98 [0]OPC client-test - 172.16.12.122		BoardiO.DI_0	1	Good	2020-03-30108.13.35 (0	10)	
	Configuration	BoardIO:DI_1	1	Good	2020-03-30T08:13:35 (UT		
		BoardIO:DI_2	1	Good	2020-03-30T08:13:35 (U	ITC)	
		BoardIO:DI_3	1	Good	2020-03-30T08:13:35 (UT		
		BoardIO:DO 0	0	Good	2020-03-30T08:13:35 (	ITC)	
		BoardIO:DO 1	0	Good	2020-03-30T08:13:35 (L	2020-03-30T08-13-35 (UTC)	
		BoardIO:DO 2	0	Good	2020-03-30T08:13:35 (UTC)		
		Beardio:DO_2	0	Cood	2020 02 20700-12-25 (	10)	
		Boardio.bo_5		0000	2020-00-00100.10.00 (0		
>		OPCUA: Tag1	10694.00	Good	2020-03-30108:13:36 (0	IIC)	
DPC Quick Client - Untitled * Edit View Tools Help						٥	
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### Pin Definition (in case of serial connection):

Reference: