

OPC UA Client

Supported Series: Weinetk OPC UA Server, Unified Automation, Prosys, Kepware

HMI Setting:

Parameters	Recommended	Options	Notes
PLC type	OPC UA Client		
PLC I/F	Ethernet		
Port no.	4840		
	News	None / Basic128Rsa15 /	
Security policy	None	Basic256 /	
Message	Nono	None / Sign/	
security mode	NOTE	SignAndEncrypt	
Re-Build Certifica	ate when HMI Star	ts	
Use sha-256 mod	e (default sha-1)		
Support Uncertai	n Initail Value		

On-line simulator	Yes	Multi-HMI connect	Yes
		• • • • •	

When you use opc us client for the first time, you need to set time related settings, please refer to the settings below.

System Parameter Setting -> Time Sync./DST

evice	Model	Genera	al System	Remote	e S	Security	Extended Memor	
Cellular Data Network Time Sync./DST e-Mail F								
	HMI	[time zone	: (UTC+08:00)				~	
* [HMI time zone] setting will also be used for timestamps of OPC UA and MQTT.								
E	nable time syn	chronizatio	on with the external	device when	HMI start	s		
√ E	nable time syn	nchronizatio	on via NTP <mark>(</mark> Network	Time Protoc	ol) server			
√ E	nable time syn xecute time sy	nchronizatio	on via NTP (Network iion when HMI start:	: Time Protoco	ol) server			
V E V E	nable time syn xecute time sy erver response	nchronizatio nchronizati e time has	on via NTP (Network tion when HMI start: been adjusted in ac	: Time Protoco s cordance wit	ol) server h DST			
V E V E V S	nable time syn xecute time sy erver response Server resp	nchronizatio nchronizat e time has ponse time	on via NTP (Network tion when HMI start been adjusted in ac : : (UTC +08:00)	: Time Protoco s cordance wit	ol) server h DST		~	
VE VE VS	nable time syn xecute time sy erver respons Server resp Network tim	nchronization (nchronization e time has ponse time ne server 1	on via NTP (Network ion when HMI start been adjusted in ac :: (UTC +08:00) :: (0.pool.ntp.org	Time Protoco s	ol) server h DST (e.g. www	v.nist.gov o	v r 24.56.178.140)	
V E V E V S	nable time syn xecute time sy erver respons Server resp Network tim Network tim	nchronization (nchronization) e time has ponse time ne server 1 ne server 2	on via NTP (Network tion when HMI start been adjusted in ac : (UTC+08:00) : 0.pool.ntp.org : 1.pool.ntp.org	Time Protoco s ccordance wit	ol) server h DST (e.g. www	v.nist.gov o	v r 24.56.178.140)	
v e v e v s	nable time syn xecute time sy erver response Server resp Network tim Network tim	nchronization nchronization ponse time he server 1 he server 2 he server 3	on via NTP (Network tion when HMI start been adjusted in ac (UTC+08:00) : (0.pool.ntp.org : 1.pool.ntp.org : 2.pool.ntp.org	Time Protoci s cordance wit	ol) server h DST (e.g. www	v.nist.gov o	∨ r 24.56.178.140)	
v e v e v s	nable time syn xecute time sy erver response Server resp Network tim Network tim Network tim	nchronization nchronization e time has ponse time he server 1 he server 2 he server 3 he server 4	on via NTP (Network ion when HMI start been adjusted in ac : (UTC+08:00) : 0.pool.ntp.org : 1.pool.ntp.org : 2.pool.ntp.org : 3.pool.ntp.org	Time Protoco	ol) server h DST (e.g. www	v.nist.gov o	v r 24.56.178.140)	



Update Mode:

[Request Mode]

The opcau client will actively send a ReadRequest packet to the opcau server. After the server receives the packet, it sends it back to the opcau client using a ReadResponse packet.

[Subscription Mode]

The server regularly performs tag sampling on the PLC.

1. If the "value" or "status" of the TAG changes, the PublishResponse will be sent to the client in the next Publishing tick.

2. If the values do not change, an empty PublishResponse will be sent to the client to ensure that the connection is still established, otherwise it will timeout.

	OPC UA Advanced Settings
evice Settings	Endpoint url: opc.tcp://192.168.1.111:4840
Device Settings	Server name :
ID Address Cattings	Security
IP Address Settings	Security policy : None ~
*S	Message security mode : None
IP address : 192 . 168 . 1 . 111	Re-build Certificate when HMI starts
Port no. : 4840	Support Uncertain Initial Value
Security, Authenitcation	
	Authentication
Communication Settings	Anonymous
Timeout (sec) : 5.0 🔻	User name, Password
Turn around delay (ms) : 0	Username :
Resending commands : 0	Password :
	O Certificate, Private key
	Use certificate and private key on HMI first (if existed). Otherwise, use imported files below.
	Certificate : Import
	Private key : Import
	Private key password :
	Session
ОК	Cance Session name :
	Update mode
	OK C Request
	• Subscription 100 (100 ~ 60000 ms)
	OK Cancel



Certificate:

HMI self-build certificate with rebuild mode:

		Sys	stem Param	eter Settings		
Device	Model	General	System	Remote	Security	Extended Memory
Cellular Da	ata Network	Time	Sync./DST	e-Mail	FTP	OPCUA
ular Da	ata Network	Time	Sync./DST	e-Mail	FTP	OPCUA
Спен						

[Re-build Mode]

Does the certificate exist in the HMI?

- 1. Yes, overwrite the certificate and reload it.
- 2. No, create a new credential and load it.

[Not Re-build Mode]

Does the certificate exist in the HMI?

- 1. Yes, load the credentials existing in the HMI.
- 2. No, there is no certificate in the HMI and cannot communicate with the server.

	Device Settings	×
IP Address Settings		
IP address : Port no. : 48	192 . 168 . 3 . 20 140 Security, Authenitcation]
Communication Settings	OPC UA Ad	Ivanced Settings
Timeout (se Turn around delay (n Resending comman	Endpoint url : opc.tcp:// Server name : Securit Security policy : Basic256	192.168.3.20:4840
	Message security mode : SignAndEn	norypt v
	Re-build Certificate when HMI starts Support Uncertain Initial Value Trusted Server Certificate : Impor	Use sha-256 mode (default sha-1)
	ОК	Cancel



Custom Certificate:

Import custom certificate

*Note: If you choose to import a custom certificate, you cannot check rebuild cetificate, otherwise the cetificate will be overwritten.

Device Model General System Remote Security Extended Memory Cellular Data Network Time Sync./DST e-Mail FTP OPCUA Client
Client HMI self-build certificate with rebuild mode Custom certificate Certificate: Imported Import Reset
HMI self-build certificate with rebuild mode Custom certificate Certificate: Imported Import Reset
Import Reset
Private key: Imported
Import Reset

Note: The **[Custom Certificate]** function can only be downloaded to HMI and cannot be used for online simulation.

Support Device Type:

Data type	EasyBuilder data format	Memo
Bool	bit	
Int	16-bit BCD, Hex, Binary, Signed	16-bit
UInt	16-bit BCD, Hex, Binary, Unsigned	16-bit
DInt	32-bit BCD, Hex, Binary, Signed	32-bit
Real	32-bit Float	32-bit
UDInt	32-bit BCD, Hex, Binary, Unsigned	32-bit
LInt	64-bit Signed	64-bit
ULInt	64-bit Unsigned	64-bit
Double	64-bit Float	64-bit

Note: EBPro V6.03.02 or later supports 64 bits data type **(cMT Series only)**, but please note that the address limit range is 48 bits in maximum..



Tag Manager:

1. In EasyBuilder Pro, add OPC UA Client into the device list, set **[IP address]**, **[Port no.]**, and then open **[Security, Authentication]**.

2.Click the magnifier icon near the **[Endpoint url]** field to open Discover Server window. In the window the security parameters of OPC UA Server can be found. Click **[Apply]**, the parameters will be automatically filled into the fields in Security group box in OPC UA Settings window. Finish the rest of the settings and then click **[OK]** to leave.

	OPC UA Advanced Settings
Endpoi	nt url : opc.tcp://192.168.1.132:48010
Security	
Security	Discover Server
Message security	opc.tcp://192.168.1.132:48010 Search
Re-build Certificat	<pre>opc.tcp://192.168.1.132:48010</pre>
Support Uncertain	UaServerCpp@DESKTOP-LSOMRSJ
Trusted Server Co	 Basic256 - Sign Basic256 - Sign & Encrypt Basic256Sha256 - Sign
Authentication	Basic256Sha256 - Sign & Encrypt
Anonymous	
OUser name, Pass	
U	Apply Exit
Pa	isswora :
 Certificate, Private 	e key

3.Click Tag Manager. If **"Connection failed.'** message appears, please check the communication parameters.

Cellular	r Data Net	work	Pri	nter/Backup	Server	Tir	ne Sync./DST	e-h	fail	Recipes
Device	Mode	Ger	teral	System S	etting	Securit	y Non-AS	CII Fonts	Exte	nded Memor
Device list	t :							X	hefs any	122
No.		Name		Location	Device	type	Interface	UF Pro	locol	Station no
Local	HMI	Local HM	1	Local	MT8073	iE (800	-	-		0
Local	PLC 4	OPC UAC	lient	Local	OPC U/	Client	Ethernet (P=1	ТСРЛР		NIA.



Device (right click) -> Rebrowse -> Expand node

File Device Wind	wob		
Addresses		₽×	
 ▲ Device ▲ Objects ▶ Server ▲ Demo 	Properties Rebrowse	•	
▷ 005_Acc ▷ 009_Boi ▷ 010_Con ◢ 001_Dyn Vari ▷ Vari ▷ Vari	cessRights ilerDemo mplianceTest(Demo.CTT) namic iableWithByteStringNodeId iableWithGuidNodeId({1d545837-3edb-43f5-a4b8-073c0775fcbe}) iableWithNumericNodeId(4294967295)		
 ▷ Arra ▷ Scal ▷ 008_Dyr ▷ 004_Eve ▷ 014_File ▷ 002 His 	ays Iar(Demo.Dynamic.Scalar) namicNodes(Demo.DynamicNodes) ents(Demo.Events) es(Demo.Files) storv(Demo.Historv)	-	

5. Drag the address to be added to the right area. If the node has child nodes, they will be added as well.

File Device V					5 Manager				
	Window								
Addresses			8 ×	Search		Reset		Attribute	8
 Device Objects 			^		-			Name	001_Dynamic
 Server 				Name	Type	Full Name	-	Full Name	Objects.Demo.001_Dyna
A Demo				VariableWithNu	UDINT	Objects.Demo.001_Dynamic(Demo.Dy			
≥ 005, ≥ 009	AccessRights BoilerDemo			VariableWithGu	UDINT	Objects.Demo.001_Dynamic(Demo.Dy		ivamespace	2
▷ 010	ComplianceTest(Demo.CTT)		VariableWithBy	UDINT	Objects.Demo.001_Dynamic(Demo.Dy		Identifier	Demo.Dynamic
4 001	_Dynamic VariableWithByte9	tringNodeld		UInt64	ULINT	Objects.Demo.001 Dynamic(Demo.Dy		Identifier Type	String
⊳	VariableWithGuid	Nodeld		10.001				Description	
	VariableWithNum	ericNodeld		UINTO4	ULINI	Objects.Demo.001_Dynamic(Demo.Dy		OPCUA Turne	Unknown
Þ	Scalar			UInt32	UDINT	Objects.Demo.001_Dynamic(Demo.Dy		огсом туре	Unknown
▷ 008,	_DynamicNodes(D	lemo.DynamicNodes)		UInt32	UDINT	Objects.Demo.001_Dynamic(Demo.Dy		Mapped Type	
▷ 004 ▷ 014	Events(Demo.Eve Files(Demo.Files)	nts)		UInt16	UINT	Objects.Demo.001_Dynamic(Demo.Dy			
D02	History/Demo.His	story)	Ŧ				-		
Log	-								6
Level	Timestamp				Messag	je –			
Info	13:54:38.646	succeeded to connect							
Info	13:54:50.361	connection status changed to Disconnected							
Info	13:54:51.599	Server certificate is acceppted permanently							
Info	13:54:51.609	connection status changed to Connected							
Info	13:54:51.614	succeeded to connect							
Info	13:55:08.836	connection status changed to Disconnected							
Info	13:55:53.113	Server certificate is acceppted permanently							
Info	13:55:53.125	connection status changed to Connected							
Info	13:55:53.129	succeeded to connect							
Error	13:56:36.659	browse of Nodeld = NS0 Numeric 0 failed due to BadNo	odeidU	nknown					

6. Log will display the import results, and unsupported data types will display a message in this field.

UaStatus code: https://www.opcti.com/common-error-codes.aspx

******	window										
ddresses & X				Search Reset				Attribute			
Device					Ture	C.B.N		Name	OutputArguments		
 GetMonitoredRems GetMonitoredRems #method_status##method_class##ns#0#id#11492 #method_tnigge##method_class##ns#0#id#11492 Inpu&Arguments DuburdAmment 				reame	Type	Objects.Demo.014_Files.serverconfig.xml.Writable		Full Name	Objects.Server.GetMonit		
				writable	BOUL			Namesnace	0		
				Writable	BOOL	Objects.Demo.014_Files.uanodesetimport.xml.Writable	_	in the second			
				WorkOrderVari	UDINT	Objects.Demo.015_WorkOrder.WorkOrderVariable2		Identifier	11494		
Sources ServerConfiguration ResentData				WorkOrderVari	UDINT	Objects.Demo.015_WorkOrder.WorkOrderVariable		Identifier Type	Numeric		
				WorkOrder	UDINT	Objects.Demo.000 Static.Arrays.WorkOrder	_	Description			
 Presentavata ServerStatus ServerStatus ServiceLevel 				WorkOrder	UDINT	Objects Demo 000 Static Scalar Structures WorkOrder	- 11	OPCUA Type	ExtensionObject		
				WORKOIDE .	UDIT.		- 11	Mapped Type			
				vector	UINT	Objects.Demo.000_static.Arrays.vector					
ServerCapabilities				Vector	UINT	Objects.Demo.000_Static.Scalar.Structures.Vector		-			
1	artiticiana a										
Level	Timestamp			Message							
		browse of Nodeld = NS0[String]8114_0 failed due to BadNodeldUnknown									
	16:12:35.622	browse of Nodeld = NS0[String]9114_1 failed due to BadNodeldUnknown									
Error		and a second sec	browse of Nodeld = NS0[String]9030_0 failed due to BadNodeldUnknown								
Error	16:12:35.854	browse of Nodeld = NS0 String 9030	_0 fail	ed due to BadNo	deldUnknown						
Error Error	16:12:35.854	browse of Nodeld = N50 String 9030 browse of Nodeld = N50 String 9030	_0 fail	ed due to BadNo ed due to BadNo	deldUnknown deldUnknown						
Error Error Error	16:12:35.854 16:12:35.861	browse of Nodeld = N50 String 9030 browse of Nodeld = N50 String 9030 browse of Nodeld = N50 String 9030	_0 fail	ed due to BadNo ied due to BadNo	deldUnknown deldUnknown						
Error Error Error Error	16:12:35.854 16:12:35.861 16:12:35.883	browse of Nodeld = NS0[String]9030 browse of Nodeld = NS0[String]9030 browse of Nodeld = NS0[String]9030	LO fail L1 fail L0 fail	ed due to BadNo ed due to BadNo ed due to BadNo	deldUnknown deldUnknown deldUnknown						
Error Error Error Error Error	16:12:35.854 16:12:35.861 16:12:35.883 16:12:35.890	browse of Nodeld = NS0[String]9030 browse of Nodeld = NS0[String]9030 browse of Nodeld = NS0[String]9112 browse of Nodeld = NS0[String]9112	LO fail L1 fail L0 fail L1 fail	ed due to BadNo ed due to BadNo ed due to BadNo ed due to BadNo brows	deldUnknown deldUnknown deldUnknown doldUnknown e of Nodeld = NS0	[Seing]9112_0 failed due to BadNodeldUnknown]					
Error Error Error Error Error Error	16:12:35.854 16:12:35.861 16:12:35.883 16:12:35.890 16:12:36.080	browse of Nodeld = NS0[String[9030 browse of Nodeld = NS0[String[9030 browse of Nodeld = NS0[String[9112 browse of Nodeld = NS0[String[9112 browse of Nodeld = NS0[String[9030	1_0 fail 1_1 fail 1_0 fail 1_1 fail 1_0 fail	ed due to BadNo ed due to BadNo ed due to BadNo ed due to ^D adNo browsi ed due to BadNo	deldUnknown deldUnknown deldUnknown e of Nodeld = NS0 deldUnknown	String19112_0 failed due to BadNodeldUnknown)					
Error Error Error Error Error Error Error	16:12:35.854 16:12:35.861 16:12:35.863 16:12:35.883 16:12:35.890 16:12:36.080 16:12:36.087	browse of Nodeld = NS0[String[9030 browse of Nodeld = NS0[String[9030 browse of Nodeld = NS0[String[9112 browse of Nodeld = NS0[String[9112 browse of Nodeld = NS0[String[9030 browse of Nodeld = NS0[String[9030	1_0 fail 1_1 fail 1_0 fail 1_1 fail 1_0 fail	ed due to BadNo ed due to BadNo	deldUnknown deldUnknown deldUnknown e of Nodeld = NS0 deldUnknown deldUnknown	SningP112,0 failed due to BadNodedOnincom					
Error Error Error Error Error Error Error Error	16:12:35.854 16:12:35.861 16:12:35.883 16:12:35.890 16:12:36.080 16:12:36.087 16:12:36.013	browse of Nodeld = NS0[String[803] browse of Nodeld = NS0[String[803] browse of Nodeld = NS0[String[91] browse of Nodeld = NS0[String[91] browse of Nodeld = NS0[String[903] browse of Nodeld = NS0[String[903] browse of Nodeld = NS0[String[91]	LO fail L1 fail L0 fail L1 fail L0 fail L1 fail	ed due to BadNo ed due to BadNo ed due to BadNo brows ed due to BadNo ed due to BadNo ed due to BadNo	deldUnknown deldUnknown deldUnknown e of Nodeld = NS0 deldUnknown deldUnknown deldUnknown	[Seing[2112_0 failed due to BetHlodddSUnknown]					



6. After importing the address, save it and leave. The specific operations are as follows: [File] -> [Save] -> [Exit]



Wiring Diagram:

