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## FAQ-CNV-07: UA Web UI Function Wizard – Module Communication Conversion -

## Internal / OPC UA - Data Exchange for OPC UA Client to Client via UA Series

Using the OPC UA Service function to convert Internal to OPC UA (Server) protocol, or as an intermediary to provide data exchange for OPC UA Client to Client.



\* Internal Variable: max. 8 internal modules; max. 100 internal variables (tags) per module.
 \* Protocol Communication Conversion: provide Internal to OPC UA Server conversion.

## 1. Project Setting Method

Enter the UA series product webpage, click **[Internal / OPC UA]** in the **[Function Wizard]** menu at the top right of the screen.



After clicking [Internal / OPC UA], follow the process steps.

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(a) Enter the step	o [ <b>Module Setti</b>	ng]								
Click the "+" butt	on, add an Intei	rnal modu	le.							
	Intern Select A	al Regist	er Mod	wie List * N move	Module Na	ame / Nicknar	ne			
Click [Edit]	Desister Ma	dula Liat							_	
Select All		M	odule Nan	ne / Nickna	ame			Edit		
۲	2 🗸	Na	me						]	
	1 Name Edit									
	Copy	emove				< 1	/1>			
Remove a			Sa	ave						
Enter the Module	e name and the	content o	f the Int	ernal Va	ariable S	etting, and	d then	click [Ad	d].	
	Internal I	Module C	ontent	Setting				1		
			No.	1						
	Module name Internal-1									
Internal Variable Setting										
			Attribute	Read / V	Vrite	~				
		D	ata Type	String		✓ 🔶				
	Data Number 2									
	Create Tables Add									
	IC	P DAS Co.,	, Ltd. Te	chnical	Docume	ent				

AuthorEva LiVersion1.0.0Date2022, 08Page3 / 9Set the Internal Variables by user case, and then click [OK].Internal Variable TableRemove TablesRemoveRemoveAttributeData TypeDescription3Tag2Read / Write vBool									
Set the Internal Variables by user case, and then click [OK].									
Internal Variable Table         Remove Tables       Remove         Remove       No.       Name       Attribute       Data Type       Description         3       Tag2       Read / Write        Bool									
Remove Tables       Remove         Remove       No.       Name       Attribute       Data Type       Description         3       Tag2       Read / Write        Bool									
Remove       No.       Name       Attribute       Data Type       Description         3       Tag2       Read / Write        Bool									
3     Tag2     Read / Write ✓     Bool									
4     Tag3     Read / Write ✓     Bool									
5 Tag4 Read / Write V String									
6 Tag5 Read / Write ✓ String									
OK Cancel									
Click [Save].									
Internal Register Module List									
Select All No. *Module Name / Nickname Edit									
⊕ 2 ✓ Name									
1     Internal-1									
Copy Remove < 1 / 1 >									
Remove all Save									
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assification	UA-Series En	glish Functi	on Wizard FAG	Q-cnv-07	,		
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Click [OPC UA Cor OPC UA Cor Adjust the def value of Local for OPC UA Co according to y needs.	ault Server nnection our	System Setting I/O Status I T Platform Setting OTT Connection Local Broker Remote Broker MQTT Group Co Microsoft Azure F C UA Connecti Local Server – S	Module Setting File Setting Local Server Serve nnection Platform on Serve	IoT Pla er er Certific Co	tform Setting C	CPDAS_OPC_UA_ 48010 Save [ServerName	Advanced
Server Name	Display the	e active OPC	UA Server nai	ne. Not e	editable.		
Port	The comm	unication p	ort number of	the OPC	UA Server. Sv	stem Default	t: 48010.
Save	Click to say	ve the settir	ngs of this item	•			

Server Certificate	
Common Name	[ServerName]
Organization	Organization
Organization Unit	Unit
Locality	LocationName
State	
Country	TW
Certificate Validity (Years)	5
Key Length	1024 🗸
	Save

OPC UA Connection > Local Server – Server Certificate						
Common Name						
Organization						
Organization Unit	Set the content of the self-signed certificate automatically					
Locality	generated by the OPC UA Server					
State						
Country						
Certificate Validity (Years)	Set the validity period of the certificate (unit year)					
Key Length	Set the length of Key					
Save	Click to save the settings of this item.					

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Classificat	ion	on UA-Series English Function Wizard FAQ-cnv-07									
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	Sec	Security Setting									
			Se	ocurity Polic	y ₹	None Basic12 Basic25	8Rsa15 6	Sign, Sign and Sign, Sign and	d Encrypt 🗸 d Encrypt 🗸		
		Save						e			
OPC UA	OPC UA Connection > Local Server – Security Setting										
Security	y Polic	licy Set the message security mode that the OPC UA Server opens to the Client. Policy: None, Basic128Rsa15, Basic256						e Client. 3			
None		Thi	This policy do not use any security policy.								
Basic12	8Rsa1	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	This policy has 3 selections: Sign: Message Signing Sign and Encrypt: Message Signing and Encryption Sign; Sign and Encrypt: Message Signing; Message Signing and Encryption						tion		
Basic25	This policy has 3 selections: Sign: Message Signing Sign and Encrypt: Message Signing and Encryption Sign; Sign and Encrypt: Message Signing; Message Signing and Encryptior						tion				
Save		Clie	ck to sav	ve the set	tings o	f this ite	m.				
			User	dentity	Toke	ens					

User Identity Tokens	
Anonymous Login	Enabled
User Password Login	Enabled
Certificate Login	Enabled
	Save

OPC UA Connection > Local Server – User Identity Tokens					
Anonymous Login	Check to enable the anonymous login of clients. Default: check.				
User Password Login	Check to enable the user password login of clients. Default: uncheck.				
Certificate Login	Check to enable the certificate login of clients. Default: uncheck.				
Save	Click to save the settings of this item.				

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(c) Click [**OPC UA Certificate**] (The user can skip this step if the project needs not certificate encryption.)



This function is the certificate file management function of OPC UA Server, steps as following. In the [OPC UA Certificate] step, users can add credentials on both side's devices to strengthen security encryption:

- I. Obtain the OPC UA Client trust certificate file of the device from the connected party, save it to the PC. In this step, select this file and upload it to the UA controller.
- II. The device of the other side needs the UA certificate also. In this step, download the OPC UA Server certificate file (Certicate\_IPAddress\_.tar) to the other party, so that they can decompress the file (icpdasuaserver.der) and upload to their device.

The setting of [OPC UA certificate] is mainly for the communication security encryption of the OPC UA server. The setting parameters are as follows.

	I/O Status File Setti	ing					
	File Setting OPC UA Certi	ficate					
	Project File	OPC UA Server					
	OPC UA Certificate	Remove the File					
	MQTT Certificate	Trusted Certificate Remove					
	Log File Download	OPC UA Server Certificate Remove					
		Upload the file to the controller					
		Trusted Certificate Select File Upload					
		Download the file from controller					
		OPC UA Server Certificate Download 2					
File Setting	> OPC UA Certificate	> Upload the file to the controller					
Trusted	Select File: select th	pe OPC LIA Trusted Certificate file in PC to unload to the LIA controller					
Certificate	<b>Unload</b> : unload the Trusted Certificate file to the UA controller						
	opioud. upioud the musical certificate me to the or controller.						
	• File format must b	be <b>DER</b> . Extension name must be "der / cer / crt".					
	Trusted Certificate	Select File icpdasuaserver.der Upload					
	• If select a wrong f	ile the system will show an error message					
	o il select a wrong i	ne, the system will show an error message.					
	Trusted Certifica	te Select File Certificate_192.168.255.10 Certificate type is wrong. Upload					
File Setting	> OPC UA Certificate	Pownload the file from controller					
OPC UA	Download: Downlo	ad the OPC UA Server Certificate file to the current using computer.					
Server	• File format: DER	File name: Certicate IP-address tar					
Certificate							
	e.g. 🚟 Certifica	te_192.168.255.102tar					
	Before using, dec	ompress to <b>icpdasuaserver.der</b> , as below.					
	🗔 icpdasuas	erver.der					
L	1						
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d) Click [Enable ( Enable Conve he internal modu	Converting N rting Module Ile preset in	<b>Nodule</b> ]	• Setting] wil	l show up i	n the Module	List.	
System Setting	Module Settin	ng IoT Platfor	m Setting C	onvert Setting	Advanced Setti	ng Logger S	Setting
Convert Setting In	ternal						
OPC UA Modbus RTU (Mas	ter)	ernal Module	List				
Modbus TCP (Mas	ter) N	No.	*Module Nam	e / Nickname		Edit	All Enabled
Modbus ASCII (Ma	aster)	1	Inter		Edit 🔽		
EtherNet/IP						< 1 / 1 :	>
Internal				Caura	1		
No. Module Name	The mod	dule number dule name se	in the modu t in the mod	ile list (Not lule list (No	editable here it editable her	) ·e)	
Edit	Click to	enter the "In	ternal Client	Setting" p	age to enable	the I/O.	
All Enabled	Check [/ Uncheck Check th	All Enabled] k <. ne box of eac	ox to enable h module ca	e all module in enable ju	es in list for co Ist that modu	onversion. D le for conve	efault: rsion.
< 1 / 1 >	The pag	e number of	the module	list: Curren	it page / Total	pages. Click	< or > to
Save	go to the	e previous or	next page.	200			
his function is to onverting modul ne "Module Con	enable the e. If user wa tent Setting	communicat ants to enab " page.	tion convers le some I/O	ion module of the mod	e, please 🕢 lule, please cl	check the b ick [Edit] bu	ox of the tton to ente

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e [ <b>Modu</b> ividually	le Conte '.	nt Setting] pag	e can sh	ow the Varia	able Table	and user can	enable the	variables		
	Module	Content Settir	ng							
		N	lo. 1							
		Module Nan	ne Interr	nal-1						
	Variable	Table								
		Variable Name		Attribute		Data Type	Enab	abled		
		Tag2		Read / W	rite 🗸	String				
		Tag3		Read / W	rite 🗸	String				
		Tag0		Read / W	rite 🗸	Bool				
		Tag1		Read / W	rite 🗸	Bool				
				OK	Cancel					
Conve	rt Setting	g > OPC UA > Ir	nternal -	Internal Mo	dule List	> Module Con	tent Settin	g		
No.		The modu	ile numl	per in the mo	odule list	(Not editable h	nere)			
Modul	e Name	Give a nai	me, e.g.	model num	per or nan	ne. Default: Na	ame.			
Variab	rt Setting	The Varia	iternal -	internal ivio	aule List	> variable Tak lot oditable be				
Attribu	ite Name	Display da	ota attril	oute of the v	ariahla (N	Not editable he	10)			
,		Include: R	lead. Re	ad/Write		vot cultuble)				
Data T	vpe	Display da	ata type	of the Interr	nal variabl	e. Include: Bo	ol, Short, U	nsigned		
	Short, Long,		ng, Unsi	, Unsigned Long, Float, Double, String.						
		(Not edita	able her	e)						
Enable	Enabled Check [Enab		abled] k	ox of the to	p row can	enable all var	iables in lis	t. Check		
		the box o	f each v	ariable can e	nable just	that variable	for convers	ion.		
<u> </u>		Default: U	Jncheck.							
ОК / С	ancer	Click [OK]	to save	and exit the	page sett	ings.				
1		Click [Can	cerl to e	exit without	saving.					

(e) Click [Save Project], and at last click [Run the project].



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2. Check OPC UA Server real-time information															
Click the UI menu	Click the UI menu [ <b>I/O Status</b> ]														
System Setting I/O Status F	Module Setting ile Setting	loT Plat	form Setting (	Convert Se	etting Adva	nced Setti	ng Logger	Setting							
Check the [Internal module] on the left and click the number you want to confirm															
		M	QTT Module No. Name	LAN											
		E1	therNet/IP Module	LAN	_										
			ternal Module No. Name 1 Internal-1	LAN	_										
The right side will display the current OPC UA Server status.															
I/O Sta	atus				I/O Sc	aling	Bitwise								
Variab	le Name Di	ata Type	Value		Description		Status								
		String					Good								
Tag5		String					Good								
Tag2		Bool	✓				Good								
Tag3		Bool	✓				Good								
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