

Intouch from DDE to OPC

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Tani GmbH

Networks in industry

The name Tani stands for communication in industrial production. The focus is on communication systems:

- OPC Server for widespread PLCs
- Equipment and software for connecting PLCs, SCADA systems and databases.
- Fieldbus diagnostic systems.

Intouch from DDE to OPC

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1 Intouch from DDE to OPC

Intouch does not yet have an OPC interface. Therefore it is necessary to connect a Gateway in between. This document describes the steps required to convert an Intouch Application from the DDE server to the OPC server.

The Gateway is installed with the installation of Intouch. It is configured using the "System Platform Management Console".

The <u>DDE Configuration</u> of INAT DDE Server is shown again for the sake of completeness. The <u>OPC Configuration</u> of Tani OPC Server is recreated with the same PLC. However, the parameters can be accepted automatically via the menu item "Settings" - "Import configuration from INAT Opc or DDE Server".

The Gateway Configuration is added.

The Intouch Configuration is displayed in comparison DDE and OPC.

Here the only change in Intouch Window Maker is the "Application Name" and the "Topic Name".

In Intouch the only change needed is in the configuration of the Access Name, DDE and OPC is compared

DDE	OPC
Modify Access Name	Modify Access Name
Access Name: PLC1 OK Node Name: Cancel	Access Name: PLC1 OK Node Name: Cancel
Application Name: tcpiph1 Failover	Application Name: GATEWAY
Topic Name: PLC1	Iopic Name: 0PC_PLC1
Which protocol to use O DDE O SuiteLink Message Exchange	Which grotocol to use O DDE SuiteLink Message Exchange
When to advise server O Advise all items O Advise only active items	When to advise server Advise all items Advise only active items
Enable Secondary Source	Enable Secondary Source
	 Here the "Topic Name" is formed by the group "OPC" and the connection "PLC1" separated by the underscore. This corresponds to the "Device Group Name" in the Gateway configuration. The "Application Name" is called "FsGateway" in older versions.

1.1 OPC Configuration

Configuration of the Tani OPC Server

The connection to an S7-300 PLC with the name PLC1 is configured here. However, the parameters can be converted automatically via the menu item "Settings" - "Import Configuration from INAT Opc or DDE Server".

New Connection	? 🛛
Name of the Connection PLC1	Next
	Back
Active Data Request Data Server Database Access]
Active Data Request O PLC Access Raw data connection	
OPC Pipe Client OPC DA Client OPC UA Client MQTT Client	Cancel
E-Mail Client	
Enable Redundancy	Help

New Connection			8 🛛
Name of the Connection Network transport prot TCP/IP	PLC1 ocol OSI H1	🔘 Serial	Next Back
 PLC controller protocol Siemens S7 Rockwell Logix/Slc/PL Mitsubishi Melsec Q, 	.C-5 Family, GE PA QL, FX5	Siemens S5 ACSystems	
🔘 BACnet		Modbus	
			Cancel Help

New Connection				? 🔀
Name of the Connection	PLC1			Next
Name of the Adapter	LAN-Bridged 🔻			Back
Destination IP Address	192.168.2.200		Search station	
Is IpV6 Connection				
Destination Port	2000			
Special Settings	_			
PLC Header	🔽 Life Data Acks	Rfc1006	5	
Special Se	ttings	RFC1006 TS/	APs	
				Capital
				Help

New Connection						? 🛛
Name of the Connection	n PLC1]	Next
TSAP Mode	S7-300/400 Set	ervice/Slo	ot Mode		S7-1200/1500 Mode	
Service/Slot						Back
Function		3 ((0 auto,	, 1 PG, 3	Application)	
Slot		2 (Slot of	CPU)		
COM line		1 (Mpi line	e in Gatev	vays)	
Available destinations						
Plc type	Plc name	Funct	Slot	Line		
CPU 315-2 PN/DP	SIMATIC 300(1)	1	2	1		
CPU 315-2 PN/DP	SIMATIC 300(1)	3	2	1		
CPU 315-2 PN/DP	SIMATIC 300(1)	3	0	1		
CPU 315-2 PN/DP	SIMATIC 300(1)	2	2	1		
CPU 315-2 PN/DP	SIMATIC 300(1)	2	0	1		
CPU 315-2 PN/DP	SIMATIC 300(1)	1	2	1		
CPU 315-2 PN/DP	SIMATIC 300(1)	1	0	1		
L						
						Cancel
						Help

dit Connection	? 🛛
Name of the Connection PLC1	Save
Connection Active Virte allowed	
☑ Opc allowed ☑ Opc write allowed ☑ Simulate connection	n
Network Parameters S7TCP/IP: Client 192.168.2.200 Iso<0101><0302>	
Protocol Parameters S7 300/400/1200	Cancel
Optimizer Settings Max gap 212, poll Time 1000	Help

 ✓ PLC Engine Collect [Support-OPC] Connection Paths □ □ ☑ File View Connection Diagnostics Variables Station Settings Help ▲ ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●						
Pic Name	Typ	Parameters				
OPC UA Server	OPC UA Server	TCP/IP Server 0.0.0.0 Port 4840 Tcp Write				
OpcPipe Server	OPC Pipe Server	TCP/IP Server 0.0.0.0 Port 4444 Tcp Write				
S7 PLC1	Ip S7	TCP/IP Client 192.168.2.200 Iso <0101><0302> Read/write, OPC-Read/write				

Window Maker

In the Intouch Window Maker, the corresponding Access Name is configured via the Gateway

Modify Access Name	
Access Name: PLC1	OK
Node Name:	
	Cancel
Application Name:	Failover
GATEWAY	
Topic Name:	
OPC_PLC1	
Which protocol to use	
ODDE SuiteLink Message Excha	ange
When to advise server	
 Advise all items Advise only active items 	
Enable Secondary Source	

• Here the "Topic Name" is formed by the group "OPC" and the connection name "PLC1" separated by

an underscore. This corresponds to the "Device Group Name" in the gateway configuration.The "Application Name" is called "FsGateway" in older versions.

1.2 DDE Configuration

Sample Configuration of the INAT DDE Server

This example shows the configuration of the topic "PLC1" to an S7-300 PLC.

TCP/IP Parameter Settings	×
Connection	OK
Protocol: \$7 Image: Activated Image: Allow Cyclic Poll Poll Interval [ms]: 1000 Image: Write Access to PLC Permitted Image: Poll Interval [ms]: 1000 Image: Write Access to PLC Permitted Image: Poll Interval [ms]: 1000 Image: Poll Interval Poll Interval [ms]: 1000 Image: Poll Interval [ms]: 1000 Image: Poll Interval Poll Interval Poll Interval [ms]: 1000 Image: Poll Interval [ms]: 1000 Image: Poll Interval Poll Interval Poll Interval [ms]: 1000 Image: Poll Interval [ms]: 1000 Image: Poll Interval Poll Interval Poll Interval Poll Interval Poll Interval Poll Interval [ms]: 1000 Image: Poll Interval Poll Interval Poll Interval [ms]: 1000 Image: Poll Poll Interval Poll Interval Poll Interval Poll Poll Interval Poll Poll Interval Poll Poll Poll Poll Poll Poll Poll Po	Cancel Help
Image: Image	
Connection Establishment Active Passive Special Settings Read Optimisation High Performance Protocol Protocol TCP (reliable) C UDP (not reliable) Special Settings High Performance Protocol	

ISO-on-TCP Param	eter Settings (RFC1006)		×
SO-on-TCP (RFC1	006) parameters		ОК
Local TSAP	Value Hex	Value ASCII	Cancel
Own TSAP	01 01		Help
Fremote TSAP for Read and Write	03 02	5	Routing



Window Maker

In the Intouch, the Access Name Definition for DDE looks like this:

Modify Access Name	
Access Name: PLC1	OK
Node Name:	
	Cancel
Application Name:	Failover
tcpiph1	
Topic Name:	
PLC1	
Which protocol to use	
ODDE OSuiteLink OMessage Excha	ange
When to advise server	
O Advise all items	
Enable Secondary Source	

1.3 Gateway Configuration

The gateway will be installed with the installation of Intouch. It is configured using the "System Platform Management Console". With older Intouch versions it is called **FsGateway**. The configuration is the same.

💋 SMC - [ArchestrA System Management Co	onsole (WIN7-INTOUCH)\DAServer Manager\D	efault Group\Local\Archest	rA.FSGateway.3\Configurati 🗖 🖻 🖾
Datei Aktion Ansicht ?			
🗢 🄿 🗾 📰			
ArchestrA System Management Consol	🕎 Node Type: \$ROOT\$ De	limiter:	-
Galaxy Database Manager Galaxy Database Manager DAServer Manager	Global Parameters		
 Default Group Eccal A ArchestrA.FSGateway.3 	Device Group Update Interval (msec):	1000	Enable/Disable
 Configuration Diagnostics 	Slow Poll Interval (msec):	10000	Case Sensitive
▷ 🖳 win7-dde ▷ 🛄 Log Viewer	Transaction to Subscription Ratio:	2	Device Group Cache
Platform Manager	Transaction Message Timeout (msec):	60000	Simulation Mode
	Server Protocol Timer (msec):	50	Sustem Items
	Maximum Queued Transactions:	75	je option tonio
	Maximum Queued Updates:	1	🔽 Unique Device Groups
	DDE/SuiteLink Timer Tick (msec):	50	
	Poke Mode:	Control Mode	
	•	III	
· · · · · · · · · · · · · · · · · · ·			

Please make sure that the Poke Mode is changed to "Control Mode", otherwise not all values will be written into the PLC, write operations will be optimized away.

SMC - [ArchestrA System Management Console (WIN-LHM)	RJP72TSH)\Operations Integration Server Manager\Default Group\Local\Ope	– 🗆 ×
Datei Aktion Ansicht ?		
🗢 🔿 🛛 📰 🗙 🛛 🖬		
ArchestrA System Management Console (WIN-LHMRJP72T)	Node Type: OPC Delimiter: .	
Operations Integration Server Manager		
V ag Derault Group	OPC Parameters	
Coperations Integration Supervisory Servers		
V 🔅 Wonderware - Gateway		
V 浸 OI.GATEWAY.2	Server Node: localhost	
V 🔏 Configuration		
> CPC	Server Name: Tani OPC Server	▼
> CPCUA	3	
> 👘 Diagnostics	Reconnect Attempts:	
E Log Viewer	Reconnect Period: 30000	
> 🖳 Platform Manager	1 115	
	Poke Retries: 0	
	The Astimute Course Out of Deep	
	I Activate server out of Froc	
	🔲 Allow Optional Data Type Suffix In Item Name	
	Use Synchronous Reads and Writes	
	<	>
<>		
	<u> </u>	

🤪 SMC - [ArchestrA System Management Console (WIN-LHMRJP72TSH)\Operations Integration Server Manager\Default Group\Local\Operations I — 🛛 🗙				
Datei Aktion Ansicht ?				
🗢 🔿 🔀 🔣 📓 🎫				
 ArchestrA System Management Console (WIN-LHMRJP72T Operations Integration Server Manager Default Group Local Operations Integration Supervisory Servers Operations Integration Supervisory Servers On GATEWAY.2 On GATEWAY.2 OPC PLC1 OPCUA Diagnostics Wonderware - SIM I og Viewer Platform Manager 	Node Type: OPCGrou	p Delimiter: . MQTT Publish Items OPC_PLC1 1000 ms PLC1. Path Demand Read After Poke Browse OPC Items		

Please note the point after the connection name at "OPC Item ID Prefix" here "PLC1."

Gateway restart

Afterwards the gateway must be restarted, please do not forget.

🏈 SMC - [ArchestrA System Manag	ement Console (WIN-LHM	RJP72TSH)\Operations Integra	ation S	Gerver Manager\Default Group\Loca	I\Operations I	- 0	×
Datei Aktion Ansicht ?							
🗢 🄿 🖄 📰 🗟 📰 🛙	×						
🧭 ArchestrA System Management C	onsole (WIN-LHMRJP72T	Component		Version		Build Dat	e
✓ ➡ Operations Integration Server	Manager	🔠 Gateway		2017.1031.2495.1		Oktober	31, 2017
V 🔄 Default Group		🚹 Gateway [Shell]		1001.0013.0000.0000		Oktober	1, 2017
V 🔄 Local		🔣 Original DAS Toolkit		0956.0000.0000.0000		October	3, 2017
Operations Integrat	tion Supervisory Servers	DASEngine		1090.0537.0000.0000		Oktober	:6, 2017
V 🔅 Wonderware - O	Gateway			1090.0289.0000.0000		Oktober	.0, 2017
	Activate (Auto start afte	r reboot)		1090.0289.0000.0000		Oktober	26, 2017
> 🕂 Diac	Activate until reboot (M	anual start after reboot)					
> 🕸 Wonderwar	Desktop mode (Must sta	art from command line)					
> 📃 Log Viewer	Deactivate (Must be acti	ivated to run again)					
> 😫 Platform Manager	Clone Instance						
	Remove Instance						
	Rename Instance						
	Expand All						
	Ansicht		>				
	Liste exportieren						
	Hilfe						
		4					``
Peactivate an active conver		1					-
Deactivate an active server							

💋 SMC - [ArchestrA System Management Console (WIN-LHMRJP72TSH)\Operations Integration Server Manager\Default Group\Local\Operations I — 🛛 🛛 🗙				
Datei Aktion Ansicht ?				
🗢 🄿 🔁 📷 🗟 🙀 🛐 🗹				
 ArchestrA System Management Console (WIN-LHMRJP721 Operations Integration Server Manager 	Component Gateway	Version 2017.1031.2495.1	Build Date Oktober 31, 2017	
 ✓ Befault Group ✓ E Local ✓ Ø Operations Integration Supervisory Servers 	Gateway [Shell]	1001.0013.0000.0000 0956.0000.0000.0000 1090.0537.0000.0000	Oktober 31, 2017 October 23, 2017 Oktober 26, 2017	
 Wonderware - Gateway Gl.GATEW Activate (Auto start 	after reboot)	1090.0289.0000.0000 1090.0289.0000.0000 1090.0289.0000.0000	Oktober 26, 2017 Oktober 26, 2017 Oktober 26, 2017	
> @ Wonderware Activate until reboo > I Log Viewer Desktop mode (Mu: > Platform Manager Deactivate (Must be	t (Manual start after reboot) st start from command line) s activated to run again)			
Clone Instance Remove Instance Rename Instance				
Expand All				
Ansicht	>			
Liste exportieren				
Hilfe				
Activate server in Auto start after reboot mode			,	

The gateway is now ready to connect to the OPC server.

1.4 Intouch Configuration

In Intouch, the Access Name Definition looks like this:

Access Names	
Galaxy OPC OPCUA DICC	Close
PLCI	Add
	Modify
	Delete

In Intouch the only change needed is in the configuration of the Access Name, DDE and OPC is compared

DDE	OPC
Modify Access Name Access Name: PLC1 Node Name: Cancel Application Name: Failover tcpiph1 Failover Topic Name: PLC1 Which protocol to use Message Exchange O DDE SuiteLink Message Exchange When to advise server Advise only active items	Modify Access Name Access Name: OK Node Name: Cancel Application Name: Eailover GATEWAY Eailover Iopic Name: OPC_PLC1 Which grotocol to use Message Exchange ODDE SuiteLink Message Exchange When to advise server Advise only active items
Enable Secondary Source	Enable Secondary Source
	 Here the "Topic Name" is formed by the group "OPC" and the connection "PLC1" separated by the underscore. This corresponds to the "Device Group Name" in the Gateway configuration. The "Application Name" is called "FsGateway" in older versions.

A data point is then defined as follows

Object type: Text	Pre	ev Link Next Link	OK Cancel
Touch Links	Line Color	Fill Color	Text Color
User Inputs	Discrete	Discrete	Discrete
Discrete	Analog	Analog	Analog
Analog	Discrete Alarm	Discrete Alarm	Discrete Alarm
String	Analog Alarm	Analog Alarm	Analog Alarm
Sliders	Object Size	Location	Percent Fill
Vertical	Height	Vertical	Vertical
Horizontal	Width	Horizontal	Horizontal
Touch Pushbuttons	Miscellaneous	Value Display	
Discrete Value	Visibility	Discrete	
Action	Blink	🗹 Analog	
Show Window	Orientation	String	
Hide Window	Disable		
	Tooltip		

Tagname Dictionary		×
⊖ Main ● Details ⊖ Alarms ⊖ Details & A	larms OMembers	
New Restore Delete Save <<	<u>S</u> elect ≥> Cancel Close	
Tagname: MW10	I/O Integer	
<u>G</u> roup: \$System	◯ Read <u>o</u> nly	
Comment: AccessLevel		
Log Data Log Events	Retentive Value Retentive Parameters	
Initial Value: 0	Min EU: -32768 Max	EU: 65535
Deadband: 0	Min Raw: -32768 Max	Raw: 65535
Eng Units:	Log Deadband: 0	nversion Linear 🔿 Square Root
Access Name: PLC1		
Item: MW10		se Tagname as Item Name

Object type: Text	Prev Link Next Link	OK Cancel
	Output -> Analog Expression	
Expression: MW10		ОК
		Cancel
Formatting		Clear
Text String \sim	Precision: 0	
Fixed Width	Bits From: 0 📮 To: 31 📮	

The image in which the data point is used looks like this:

💷 Win1		8
Flag Word 10		
		· · · · ·
Win1		83
Flag Word 10	52505	