

DeviceXPlorer OPC Server

User's Guide (Server Edition)



Revision 028

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1	Intro	troduction	9
	1.1	Overview	9
	1.2	Features	9
	1.3	Protocol for Communication between Applications	
	1.4	Licenses	
2	Con	onfiguration	
	2.1	System Configuration	
	2.2	Operating Environment	
	2.3	Support Controller	
3	Insta	stallation	
	3.1	Install Procedure	
	3.2	Installation Files	
	3.3	Uninstall Procedure	
	3.4	License Activation	
	3.4.1	4.1 Serial Number	
	3.4.2	4.2 Software Key	
	3.4.3	4.3 Hardware Key	
	3.4.4	4.4 License Status and Application Operation	
	3.4.5	4.5 Serial Number	
	3.	3.4.5.1 Serial Number Registration	24
	3.	3.4.5.2 Change the activated Serial Number	24
	3.	3.4.5.3 Deactivate the Serial Number.	24
	3.4.6	4.6 Activation of License Flow	25
	3.4.7	4.7 Deactivation of License Flow	
	3.4.8	4.8 Transfer of License Flow	
	3.	3.4.8.1 Deactivate the license at the source PC	
	3.	3.4.8.2 Activate the license in the transferred PC	
	3.4.9	4.9 User Registration	
	3.4.	4.10 Activate the Software Key (Online)	
	3.4.	4.11 Activate the Software Key (Ottline)	
	3.4.	4.12 Deactivate the Software Key (Online)	41
	3.4.	4.13 Deactivate the Software Key (Offline)	
	3.4.1	4.14 Using the Software Key in the Virtual Environment.	
	<i>3</i> .	3.4.14.1 Set up CodeWeter Runtime on Host OS	52 55
	3. ว	3.4.14.2 License activation on the host OS	
). 2	3.4.14.5 License server activation on the Crust OS	
	3. 2.4	115 Using the Herry prov	5 0
	2.4	1.1.5 Using the Haldwale Rey	
	25	4.10 Using the Haldwale Rey life Villua Elivitoninent	
	36	The Differences between each Editions	
	3.0	Communication Suite that can be Selected for Advanced / Standard Edition	
	3.7	7.1 Selecting the Communication Strite	01
	3.7.	7.1 Sociality in Communication Suite from licence menu	
	38	Demo adition	
	30	Notes on the usage by the non-administrator rights	
	310	Notes at 64-bit application	
	3 10	10 1 Notes on using the OPC Classic (OPC DA/OPC AF) server function	
	3 10	10.2. Unsurported connections in 64-bit application	
	3.11	Note at connecting with CENESIS 64/MC Works64 via OPC DA interface	05 64
Δ	Ger	eneral Performance. Specifications	
	4.1	Specifications Table	

4.2	OPC DA Interfaces	
4.2.1	Prog.ID	
4.2.2	Item ID	
4.2.3	Access Path	
4.2.4	OPC Custom Interfaces	
4.2.5	OPC Automation Interface	
4.2.6	Ouality flag	
4.2.7	Emorande	71
4.3	OPCA&E Interface	
4.3.1	Prog ID	73
4.3.2	ItemID	73
433	Custom Interfaces	74
4.4	OPCUAInterface	75
441	Specifications Table	75
442	Specifications have	
45	SuiteLink Interfaces	77
451	Application Name	, , 77
452	Tonic Names and Item Names	78
46	Dynl ink Interface	79
461	DynLink Interfee	79
4.0.1	Dyplant Set ve Settings	
4.63	Dyplant Communication	ر۲. 80
4.0.5	DynLink Contribution	
ч.0.4 Л б	6/1 Fnumerate Device (CetDevice)	
	642 Enumerate Tag (CatTags)	
	6/3 Read Value of Tag (CetTags)	
	6.4.4 Write Value of Tag (SetTagsValue)	05 81
4.0	6.4.5 Constants	
 0		
17	Madhus/TCD San ar Interface	
4.7 5 Oper	Modbus/TCP Server Interface	
4.7 5 Opera	Modbus/TCP Server Interface	
4.7 5 Open 5.1	Modbus/TCP Server Interface	
4.7 5 Opera 5.1 5.1.1	Modbus/TCP Server Interface ration Tutorial Installing and Setting Up an Ethernet Adapter Installing Device XPlorer	
4.7 5 Opera 5.1 5.1.1 5.1.2 5.1.3	Modbus/TCP Server Interface	
4.7 5 Opera 5.1 5.1.1 5.1.2 5.1.3 5.1.4	Modbus/TCP Server Interface	
4.7 5 Oper 5.1 5.1.1 5.1.2 5.1.3 5.1.4 5.15	Modbus/TCP Server Interface	86
4.7 5 Opera 5.1 5.1.1 5.1.2 5.1.3 5.1.4 5.1.5 5.1.6	Modbus/TCP Server Interface	86
4.7 5 Open 5.1 5.1.2 5.1.3 5.1.4 5.1.5 5.1.6 5.2	Modbus/TCP Server Interface ration Tutorial Installing and Setting Up an Ethernet Adapter Installing DeviceXPlorer Starting DeviceXPlorer Start Page Project Wizard Accessing DeviceXPlorer from a Client	86
4.7 5 Oper 5.1 5.1.1 5.1.2 5.1.3 5.1.4 5.1.5 5.1.6 5.2 5.2.1	Modbus/TCP Server Interface	86
4.7 5 Opera 5.1 5.1.1 5.1.2 5.1.3 5.1.4 5.1.5 5.1.6 5.2 5.2.1 5.2.2	Modbus/TCP Server Interface	86
4.7 5 Opera 5.1 5.1.2 5.1.3 5.1.4 5.1.5 5.1.6 5.2 5.2.1 5.2.2 5.2.3	Modbus/TCP Server Interface ration Tutorial Installing and Setting Up an Ethernet Adapter Installing DeviceXPlorer Starting DeviceXPlorer Start Page Project Wizard Accessing DeviceXPlorer from a Client Screen Layout Menus Toolbar	86
4.7 5 Opera 5.1 5.1.1 5.1.2 5.1.3 5.1.4 5.1.5 5.1.6 5.2 5.2.1 5.2.2 5.2.3 5.2.4	Modbus/TCP Server Interface ration Tutorial Installing and Setting Up an Ethemet Adapter Installing DeviceXPlorer Starting DeviceXPlorer Start Page Project Wizard Accessing DeviceXPlorer from a Client Screen Layout Menus Toolbar Another Shortcut Key Property Grid	86
4.7 5 Opera 5.1 5.1.1 5.1.2 5.1.3 5.1.4 5.1.5 5.1.6 5.2 5.2.1 5.2.2 5.2.3 5.2.4 5.2.5	Modbus/TCP Server Interface	86 87 87 87 88 88 88 88 91 91 93 94 99 99 99 100 100
4.7 5 Opera 5.1 5.1.1 5.1.2 5.1.3 5.1.4 5.1.5 5.1.6 5.2 5.2.1 5.2.2 5.2.3 5.2.4 5.2.5 5.3	Modbus/TCP Server Interface ration Tutorial Installing and Setting Up an Ethernet Adapter Installing DeviceXPlorer Starting DeviceXPlorer Start Page Project Wizard Accessing DeviceXPlorer from a Client Screen Layout Menus Toolbar Another Shortcut Key Property Grid Clip of List View	86
4.7 5 Opera 5.1 5.1.1 5.1.2 5.1.3 5.1.4 5.1.5 5.1.6 5.2 5.2.1 5.2.2 5.2.3 5.2.4 5.2.5 5.3 5.3	Modbus/TCP Server Interface ration Tutorial Installing and Setting Up an Ethemet Adapter. Installing DeviceXPlorer Starting DeviceXPlorer Start Page Project Wizard Accessing DeviceXPlorer from a Client. Screen Layout Menus Toolbar Another Shortcut Key Property Grid Clip of List View. Pots Creating New Ports	86 87 87 87 88 88 88 88 88 99 91 93 96 99 99 100 100 100 100
4.7 5 Opera 5.1 5.1.1 5.1.2 5.1.3 5.1.4 5.1.5 5.1.6 5.2 5.2.1 5.2.2 5.2.3 5.2.4 5.2.5 5.3 5.3.1 5.3.2	Modbus/TCP Server Interface ration Tutorial Installing and Setting Up an Ethemet Adapter. Installing DeviceXPlorer Starting DeviceXPlorer Start Page. Project Wizard Accessing DeviceXPlorer from a Client. Screen Layout Menus Toolbar Another Shortcut Key Property Grid Clip of List View. Ports Creating New Ports Charring New Ports	86 87 87 87 88 88 88 88 99 91 93 99 99 99 100 100 101 102 102
4.7 5 Opera 5.1 5.1.1 5.1.2 5.1.3 5.1.4 5.1.5 5.1.6 5.2 5.2.1 5.2.2 5.2.3 5.2.4 5.2.5 5.3 5.3.1 5.3.2 5.3.2	Modbus/TCP Server Interface ration Tutorial Installing and Setting Up an Ethernet Adapter Installing DeviceXPlorer Starting DeviceXPlorer Starting DeviceXPlorer Start Page Project Wizard Accessing DeviceXPlorer from a Client Screen Layout Menus Toolbar Another Shortcut Key Property Grid Clip of List View Ports Creating New Ports Changing the Port Name Port Sertings	86 87 87 87 88 88 88 88 91 91 93 91 93 99 99 100 100 100 100 100 100
4.7 5 Opera 5.1 5.1.1 5.1.2 5.1.3 5.1.4 5.1.5 5.1.6 5.2 5.2.1 5.2.2 5.2.3 5.2.4 5.2.5 5.3 5.3.1 5.3.2 5.3.3 5.3.1 5.3.2 5.3.3 5.3.4	Modbus/TCP Server Interface ration Tutorial Installing and Setting Up an Ethemet Adapter. Installing DeviceXPlorer Starting DeviceXPlorer Start Page. Project Wizard Accessing DeviceXPlorer from a Client. Screen Layout Menus Toolbar Another Shortcut Key Property Grid Clip of List View. Ports Creating New Ports Changing the Port Name. Port Settings. Setting Ethemet Ports	86 87 87 87 88 88 88 88 88 99 91 93 96 99 99 100 100 100 100 101 102 103 103 103
4.7 5 Opera 5.1 5.1.1 5.1.2 5.1.3 5.1.4 5.1.5 5.1.6 5.2 5.2.1 5.2.2 5.2.3 5.2.4 5.2.5 5.3 5.3.1 5.3.2 5.3.3 5.3.4	Modbus/TCP Server Interface ration Tutorial Installing and Setting Up an Ethernet Adapter Installing DeviceXPlorer Starting DeviceXPlorer Start Page Project Wizard Accessing DeviceXPlorer from a Client Screen Layout Menus Toolbar Another Shortcut Key Property Grid Clip of List View Ports Creating New Ports Changing the Port Name Port Settings Setting Ethernet Ports	86 87 87 87 88 88 88 88 88 91 91 93 93 96 99 99 100 100 100 101 102 103 103 103
4.7 5 Opera 5.1 5.1.1 5.1.2 5.1.3 5.1.4 5.1.5 5.1.6 5.2 5.2.1 5.2.2 5.2.3 5.2.4 5.2.5 5.3 5.3.1 5.3.2 5.3.3 5.3.4 5.3.5 5.3.4 5.3.5 5.3.5 5.3.5 5.3.5 5.3.4 5.3.5 5.3.5 5.3.4 5.3.5 5.3.5 5.3.5 5.3.4 5.3.5 5.3.5 5.3.4 5.3.5 5.3.4 5.3.5 5.3.5 5.3.4 5.3.5 5.3.4 5.3.5 5.3.4 5.3.5 5.3.4 5.3.5 5.3.4 5.3.5 5.3.4 5.3.5 5.3.4 5.3.5 5.3.4 5.3.5 5.3.4 5.3.5 5.3.4 5.3.5 5.3.4 5.3.5 5.3.4 5.3.5 5.3.4 5.3.5 5.3.4 5.3.5 5.3.5 5.3.4 5.3.5 5.3 5.3	Modbus/TCP Server Interface ration Tutorial Installing and Setting Up an Ethemet Adapter Installing DeviceXPlorer Starting DeviceXPlorer Start Page Project Wizard Accessing DeviceXPlorer from a Client Screen Layout Menus Toolbar Another Shortcut Key Property Grid Clip of List View Ports Creating New Ports Changing the Port Name Port Settings Setting Ehemet Ports Satil Timeout Settings for TCP / IP Sarial Part Satings	86 87 87 87 88 88 88 88 88 91 91 93 91 93 99 99 100 100 100 100 101 102 103 103 105 107
4.7 5 Opera 5.1 5.1.1 5.1.2 5.1.3 5.1.4 5.1.5 5.1.6 5.2 5.2.1 5.2.2 5.2.3 5.2.4 5.2.5 5.3 5.3.1 5.3.2 5.3.3 5.3.4 5.3.5 5.3.5 5.2.6	Modbus/TCP Server Interface	86 87 87 87 88 88 88 88 88 99 91 91 93 96 99 99 100 100 101 102 103 103 103 105 107 109 110
4.7 5 Opera 5.1 5.1.1 5.1.2 5.1.3 5.1.4 5.1.5 5.1.6 5.2 5.2.1 5.2.2 5.2.3 5.2.4 5.2.5 5.3 5.3.1 5.3.2 5.3.3 5.3.4 5.3 5.3.4 5.3 5.3.6 5.27	Modbus/TCP Server Interface ation Tutorial Installing and Setting Up an Ethernet Adapter Installing DeviceXPlorer Starting DeviceXPlorer Start Page Project Wizard Accessing DeviceXPlorer from a Client Screen Layout Menus Toolbar Another Shortcut Key Property Grid Clip of List View Port Settings Setting Ethernet Ports Starting Ethernet Ports Starting Port Settings Setting Ethernet Ports Starting Port Settings Setting Ethernet Ports Start Page Port Generator Drawria DeviceXPlorer	86 87 87 87 88 88 88 88 89 91 93 96 99 99 100 100 100 101 102 103 103 103 105 107 109 110

5.4	Device	8	
5.4.1	Cre	ating a New Device	
5.4	.1.1	Not select a Port	
5.4	.1.2	Select a Port	
5.4.2	Co	nnection Test	
5.4.3	Cha	anging the Device Name	
5.4.4	Dev	vice Settings	
5.4.5	Dev	vice Options	
5.4.6	Dev	vice Publisher	
5.4.7	Cha	anging Ports	
5.4.8	Dev	vice Generator	
5.4.9	Dy	namic Device	
5.5	Group	S	
5.5.1	Cre	ating a New Group	
5.5.2	Cha	anging the Group Name	
5.5.3	Gro	oup Settings	
5.5.4	Del	eting Group	
5.6	Device	Folder	
5.6.1	Cre	ating a New Device Folder	
5.6.2	Cha	anging the Group Name	
5.6.3	Del	leting Device Folder	
5.7	Tags		
5.7.1	Dy	namic Tags and Static Tags	
5.7.2	Cre	ating a New Tag	
5.7.3	Cha	anging a Tag Name	
5.7.4	Pro	perties (General)	
5.7.5	Pro	perties (Scale Settings)	
5.7.6	Pro	perties (Simulation)	
5.7.7	Pro	perties (Alarm)	
5.7.8	Pro	perties (Publisher)	
5.7.9	Sav	ing Settings	
5.7.10) .	Adding Tags Continuously	
5.7.11	. ,	Tag Generator	
5.7.12	2]	Extended Tag Name Specification	146
5.7	.12.1	No Specification	
5.7	.12.2	Specifying the Bit Position (:nn)	147
5.7	.12.3	Byte Type (:L, :LU, :H, :HU)	
5.7	.12.4	Word Type (:W, :U, :WU)	147
5.7	.12.5	Long Type (:D, :DU)	147
5.7	.12.6	LongLong Type (:I, :IU)	147
5.7	.12.7	Single Precision Real Number Type (:R)	
5.7	.12.8	Double Precision Real Number Type (:DR)	147
5.7	.12.9	BCD Type (:B)	147
5.7	.12.10	Read-only/Write-only (:OR, :OW)	148
5.7	.12.11	Array (:A99999)	
5.7	.12.12	String (:S99999)	
5.7	.12.13	File Batch Write(:F999999)	148
5.7	.12.14	Text Format Binary Type (:B99999)	148
5.7	.12.15	Text Format Octal Type (:O99999)	149
5.7	.12.16	Text Format Decimal Type (:D99999)	
5.7	.12.17	Text Format Hexadecimal Type (:H99999)	
5.7	.12.18	Bit Inverse	

5.7.12.1	9 Boolean conversion	
5.7.12.2	0 Simulation mode (Sin)	
5.7.12.2	1 Simulation mode (Shared Memory)	
5.7.12.2	2 Simulation mode (Ramp)	
5.7.12.2	3 Simulation mode (Random)	
5.7.13	System Tags	
5.7.13.1	Global System Tags	
5.7.13.2	Device System Tags	
5.7.13.3	Connection System Tags	
5.7.14	Tag Monitor	
5.7.15	Offline Mode	
5.7.16	Write Tag Value	
5.7.17	Watch	
5.7.18	Array Viewer	
5.7.19	Register Monitor	
5.8 Met	hod Tag	
5.8.1 (Creating a New Method Tag	
5.8.2 I	Execute Method Tag	
5.9 Stru	cture Tag	
5.9.1 I	Define Structure Template	
5.9.2 (Creating a New Structure Tag	
5.9.3 I	How to access Structure Tags from Client	
5.10 Bric	e	
5.10.1	Brdge Setting	
5.11 Me	\$\$2955	
5.11.1	Message	
5.11.2	How to save messages automatically	
5.12 Diag		
5.12.1	Interface Diagnosis	
5.12.2	Cient Diagnosis	
5.12.3	Group Diagnosis	
5.12.4	Tag Diagnosis	
5.12.5	Event Diagnosis	
5.15 PIOJ	Common Properties Conom	
5.13.1	Common Properties, OPC	104
J.15.2 5 13 2 1	Common Properties, OPC	10
5.13.2.1	Common Properties, OPC, OPC UA Server Setting	
5.13.2.2	Common Properties, OPC, OPC UA Chefit Setting Concrete Contificate	
5 13 2 4	Common Properties, OFC, OFC UA Set Ver/Chent Setting, Generate Certificate	190
5 13 3	Common Properties SuiteJ ink	
5.13.5	Common Properties DynJ ink	
5 13 5	Project Properties General	
5.13.5	Project Properties, Contract.	
5.13.0	Project Properties I or	
514 Ser	ice Activation	
5 14 1	Registering Device XPlaner as a service nerogram	
5.14.2	How to show Device XPlorer setting dialog of service program	
5.14.3	Unregister from service program	
5.14.4	Unregister from service program on Windows 10 later	
5.15 Imm	orting and Exporting	
5.15.1	Import[Definition]	
	1 · ·	

5.1	5.1.1 Import MX OPC Server DA / UA Configuration File	
5.15.2	2 Export[Definition]	
5.15.3	3 Import[TagMemory]	
5.15.4	4 Export[TagMemory]	
5.15.	5 Tag Import	
5.1	5.5.1 Import the tag definition file of KEPServerEX	
5.1	5.5.2 Error List	
5.16	Hot Configuration	
5.17	Redundant Communication	
5.17.	1 Warm Standby	
5.17.2	2 Cold Standby	
5.18	Communication Period	
5.19	Slow Polling Mode	
5.20	User Management	
5.20.	1 Configuration	
5.20.2	2 Contents List	
5.20.3	3 Auto Login	
5.21	Change display language dynamically	
5.22	DCOM Configuration	
5.22.1	1 Overview	
5.22.2	2 Procedure	
6 Scrip	pt	
6.1	Event Script Settings	
6.2	Script Specification	
6.3	Extend Specification	
6.3.1	Reserved Word	
6.3.2	Constant Value	
6.3.3	Classes	
6.3	3.3.1 Tag Access Class	
6.3	3.3.2 Group Access Class	
6.3	3.3.3 Device Access Class	
6.3	3.3.4 Struct Access Class	
6.3	B.3.5 Port Access Class	
6.3	B.3.6 Event Script Access Class	
6.3	3.3.7 Method Access Class	
6.3	3.3.8 Time Class	
6.3.4	Functions	
6.3.5	Access Macros	
6.3.6	Priority of Finding Object	
6.3.7	Units of Running Script	
6.3.8	About Script Writing	
6.4	Samples	
6.4.1	Basic Example	
6.4.2	Easy CSV Logging	
6.4.3	Example which defines the class in the external file (Bridge)	
6.4.4	Example which defines the class in the external file (Timer)	
7 Trout	bleshooting	
7.1	Enor Messages	
7.1.1	The source of the Response timeout error in the Ethemet connection	
7.1.2	Ethemet Error Code (Winsock Error Code)	
7.1.3	Serial Error Code	
7.2	Others	

	7.2.1	If the application screen does not display properly	
8	Apper	ndix	
	8.1	How to use of the OPC Test Client	
	8.2	About Sample Programs	
	8.3	User Support	
	8.4	Copyright Information	
	8.4.1	Scintilla	
	8.4.2	Циа	
	8.4.3	tolua++	
	8.4.4	CGridListCtrlEx	
	8.4.5	OpenSSL	
	8.4.6	Libxml2	

1 Introduction

This manual explains how to use DeviceXPlorer OPC Server (hereafter referred to as DeviceXPlorer). For information on the settings, operating method, and error codes, etc., of the PLCs, refer to the "User's Guide (PLC Communication Edition)".

1.1 Overview

OPC (Ole for Process Control) is an interface specification for communication between applications that was formulated by the OPC Foundation, a standardization body made up of hardware and software vendors from around the world. There are a number of OPC interfaces, including OPC DA for communication with field devices, OPC HDA for accessing historical data, and OPC AE for monitoring alarms. And The Unified Architecture (UA) is THE next generation OPC standard that provides a cohesive, secure and reliable cross platform framework for access to real time and historical data and events.

DeviceXPlorer is communication software that is compliant with the OPC DA interface. It provides functions to communicate with PLC. Using DeviceXPlorer allows the user application to access field devices such as PLCs without being constrained by the PLC type or the communication interface. In addition, the user application (hereafter referred to as the client) can be set up in either a local or remote PC, allowing the construction of distributed systems.

1.2 Features

The main features of DeviceXPlorer are as follows:

- Passed with the OPC compliance test.
- Confirmed connectivity with package products from around the world, through OPC Interoperability Workshop in the United States and Japan.
- Compliant with OPC DA2.05A/ OPC DA3.0.
- Compliant with OPC A&E 1.10.
- Compliant with OPC UA.
- Supports SuiteLink.
- Supports DxpLink. This is original protocol based on HTTP Communication between DeviceXPlorer.
- Supports Ethernet communication and serial communication from a single server. Also supports communication with multiple PLCs such as MELSEC (Mitsubishi Electric Corporation), SYSMAC (OMRON Corporation), and TOYOPUC (JTEKT Corporation).
- Provides a variety of sample programs as accessories, for easy access from Visual Basic, VB.NET, and Excel, as well as Visual C/C++ and C#.NET.
- Provides scale conversion and BCD conversion inside DeviceXPlorer, reducing the work of sequence programming.
- Because communication with DeviceXPlorer is possible simply by setting up a communication unit such as Ethernet and RS232C on the PLC side, you do not need to add extra sequence programs in order to use DeviceXPlorer.
- It is possible to predefine separate device names in DeviceXPlorer for the PLC device names. It is also possible to access the PLCs without defining names, to save setup time.
- DeviceXPlorer can operate as a Windows service program.
- Because redundant communication is supported, it is possible to continue communication in the event of a communication failure by automatically switching the communication route.
- A simulation function allows you to develop an OPC client even in an environment in which it is not possible to use a PLC.
- DeviceXPlorer has the script function. Even when processing cannot be included in the client and PLC side, it can respond easily.

1.3 Protocol for Communication between Applications

DeviceXPlorer supports 4 types of protocol (OPC, OPC UA, SuiteLink, and DxpLink) for communication with upper-tier applications.

[OPC]

OPC is a standard specification based on the Microsoft OLE/COM technology. It provides mutual connectivity between industrial applications, field devices and business applications, etc. In the past, application developers had to develop drivers for accessing field devices, but the use of OPC interfaces makes it possible to achieve seamless communication between HMI, SCADA, industrial applications and field applications, and also made reuse possible. It also allows for remote computing via DCOM (Distributed COM) in network environments.

[OPC UA]

OPC UA (Unified Architecture) is the new specification of OPC. This is based on SOAP/XML/Web Service which spread follows as the next-generation information infrastructure. In addition to integration of the existing specification (DA, A&E, HDA), the data exchange of a full-scale object base becomes possible by defining an information model. The scope of OPC UA makes possible the safety and the stable data exchange which cannot stop in a plant floor but can be applied also to the domain of MES located more in a higher rank, or ERP.

[SuiteLink]

SuiteLink is a TCP/IP-based protocol developed by Wonderware. SuiteLink improves the reliability of communication by using TCP/IP, and also affixes time stamp and quality information, allowing the construction of highly reliable networks.

[DxpLink]

DxpLink is a HTTP based protocol developed by Takebishi. This transmits the data between DeviceXPlorer(s) seamlessly.

1.4 Licenses

One DeviceXPlorer license is required for each PC in which the software is installed. The max number of accessible modules is 255 per one DeviceXPlorer.

There is no constraint on the number of clients.

Refer to the 3.6 for the difference between Enterprise edition, Advanced edition and Standard edition.

2 Configuration

2.1 System Configuration

The DeviceXPlorer system configuration is as shown below.



- A single server supports multiple PLCs.

- The development languages that can be used to access each interface are as shown in the table below.

- Remote connection from a separate node via DCOM is possible. This is supported by OPC DA and OPC A&E.

- DxpLink, Data communications can be performed between DeviceXPlorer by DxpLink.

[Supported Development Languages]

Interface		Excel	VB6.0	VB.NET	C#.NET	VC6.0/8.0	SCADA
ODC	Custom interface					OK	OK
	Automation interface*1	OK	OK	OK			
DA	RCW			OK	OK		
OPC UA				OK	OK	OK	OK
OPCAE			OK	OK	OK	OK	OK
SuiteLink*2							OK
DxpLink		It can be used only for communication between DeviceXPlorer.					

*1 Automation interface don't support Windows x64 Edition.

*2 For using SuiteLink interface, installing Wonderware product is necessary.

2.2 **Operating Environment**

Item	Description		
Computer	Computer running Windows		
	Windows 11 (21H2) *1		
	Windows 10 IoT Enterprise 2019 LTSC		
	Windows 10 IoT Enterprise 2016 LTSB		
	Windows 10 (1809, 1903, 1909, 2004, 20H2, 21H2) *1		
	Windows 8.1		
OS	Windows 7		
05	Windows Server 2022		
	Windows Server 2019		
	Windows Server 2016		
	Windows Server 2012 R2		
	Windows Server 2012		
	Windows Server 2008 R2		
Application Trace	32 bit application (WIN32 / x86)		
Application Type	64 bit application (WIN64/x64) $*2*3$		
Memory	1GB or more		
Hard disk	1GB or more		
Disc device	CD-ROM drive		
LAN adapter	Adapter capable of operating on Windows		
Framework	.NET Framework 3.5 (32 bit application only)		

DeviceXPlorer operates in the following environments:

*1 There is a possibility that not be guaranteed to operate on the OS owing to the Windows Update. In Windows10 Home Edition, Windows Update type is fixed "Current Branch"(update is performed automatically), so we are recommend that Pro Edition or above.

*2 SuiteLink interface does not support 64 bit native application. So 64 bit DeviceXPlorer does not support SuiteLink.

*3 64 bit DeviceXPlorer does not support the following communications because of limitation of communication library.

- MELSEC EZSocket / GOT connection.
- SYSMAC FinsGateway / SysmacGateway / CX-Compolet connection
- TOYOPUC CPU Port connection
- FANUC FOCAS connection
- YASKAWA Robot Controller connection

- Mitsubishi CNC EZSocketNc connection

2.3 Support Controller

Name	Interface	Target Module name	
	Ethernet		
	Serial		
	Interface Board	MELSEC 1Q-R / 1Q-F / Q / L / QNA / A / FA series	
Mitsubishi Electric suite	EZSocket	GOI series	
	(including GX Simulator)	MC AppBuilder cooperation function	
	GOT		
	Ethernet		
	Serial		
	SysmacGateway		
Omron suite	FinsGateway	SYSMAC-NX/ NJ/CJ / CS / CV / C series	
	CX-Compolet		
	EtherNet/IP		
	Ethernet		
Yokogawa Electric suite	Serial	e-RT3/FA-M3V/FA-M3(R)series	
	Ethernet		
Jtekt suite	CPU port (communication DLL)	TOYOPUC-Nano/Plus/PC10/PC3J/PC2J series	
Hitachi suite	Ethernet	HIDIC-EHV / EH / H series	
		Products supported by Modbus	
		Mitsubishi Modbus module / Electric Controller /	
		EcoMonitorLight	
		OMRON K6CM	
	Ethernet (Modbus/TCP)	Hakko MONITOUCH	
		Koyo DirectLOGIC/KOSTAC series	
		IDEC MICRO Smart	
		azbil(Yamatake) controller	
		Hioki E. SmartSite2300 series	
		RKC controller	
		CHINO recorder/controller	
		Eurotherm controller	
		M-System remote IO / Tower Light	
ъл II ·/		Anywire DBA40 series	
Modbus suite		Wago I/O System	
		Cognex In-Sight	
		Delta DVP series	
		Panasonic FP/KT/KW series	
	Serial (Modbus/RTU.ASCII)	3S CoDeSys SoftPLC	
		Yokogawa STARDOM / Recorder /	
		Control and Measurement Station	
		Moxa switching hub	
		Hitachi HX series	
		IAI Position controller	
		PHOENIX CONTACT remote IO	
		MTT Alchis series	
		PATLITE LA6/AirGRID WD PRO series	
		GRAPFTEC GLT400 series	
Kovonao quito	Ethormot	KV8000 / 7500 / 7000 / 5500 / 5000 / 3000 / 1000 / 700	
		/ Nano	
Sharp suite	Ethernet	Satellite JW series	

DeviceXPlorer supports the following controllers:

т	Ethernet			
Fuji suite	Serial	MICREX-SX / F series		
37.1	Ethernet (MEMOBUS)	ND 2222 / 2222 / 2422 / 2222 / 2222 / 2222 / 2222		
Yaskawa suite	Serial(MEMOBUS)	MP 3300 / 3200 / 2400 / 2300 / 2200 / 900 series		
Toshiba suite	Ethernet	nv/V/PROSEC T series		
Panasonic suite	Ethernet	FP-X/FP2(SH)series		
De alit a		GuardLogix / ControlLogix / CompactLogix /		
Rockwell suite	EtherNet/IP	FlexLogix / DriveLogix series		
Sigmong quito	Fthormot	SIMATIC S7-1500 / S7-1200 / S7-400 / S7-300 /		
	Ethernet	S7-200 series		
GE suite	Serial(SNP)	90-30 series		
Lsis suite	Ethernet	XGT series (XGK / XGI / XGR)		
Kawasaki suite	Ethernet(DLL communication)	C/D/D+/E/F/S/S+/T/duAroD/duAroFcontroller		
Yaskawa robot suite	Simulator Connection	Robot Simulator		
Yamaha robot suite	Ethernet	RCX340 series / RCX-Studio (RCX340)		
IAI robot suite	Serial	RSEL,X-SEL,TT,SSEL,ASEL,PSEL,MSEL series		
Fanue suite	Ethernet (FANUC FOCAS)	FANILIC-PMC series		
	Serial(DPRNT)			
	Serial(DPRNT)	M800/M80/E80,M700V/M70V/E70,M700/M70,C80,C		
Mitsubishi CNC	E72 alastNa	70,M600,M60/60S,E60/E68 series		
	EZSOCKEUNC	C6/C64/C64T		
Mitsubishi EDM	Ethernet	Wire, Die-sinker, Fine hole EDM		
Shibaura Machine	Ethernet	TOSNUC series, TC200 series, TCmini series		
~ · · · · ·	Serial			
Sumitomo Heavy	Ethernet	SEEV-A, SE-DUZ, SEEV-A-HD, SE-HSZ, SE-HP, CL7000		
Industries		Series		
Japan Steel Works	HTTP communication	J-ADS, J-AD, J-EL3, J-E3 series		
Azbil(Yamatake) suite	Ethernet	NX series / CPL		
	Serial			
Mitsubisni RFID suite	Linernet	VC90 acries		
Corrow PCP suite	Serial Ethormot	V680 series		
Kouoneo BCP quito	Ethermet			
MADS TOUKEN	Ethernet			
SOLUTION BCB suite	Ethernet	TFIR-3182		
Miteubiebi Eporgy				
Saving Modules suite	HTTP communication	EcoServerIII / E-Energy		
MTConnect suite	MTConnect	Products supported by MTConnect		
DPRNT suite	Serial(DPRNT)	Equipment with serial output function		
BACnet suite	Ethernet	Products supported by BACnet		
IEC60870-5-104 Client	Ethernet	Products supported by IEC60870-5-104		
IEC61850MMS Client	Ethernet	Products supported by IEC61850MMS		
DNP3 Master	Ethernet	Products supported by DNP3		
EtherNet/IP suite	EtherNet/IP	Products supported by EtherNet/IP		
		Modbus/TCP Client		
Modbus Server suite	Ethernet	GRAPFTEC MT1000 series		
ODBC Client	ODBC	ODBC Database		
OPC DA Client	OPC DA	OPC DA OPC Server		
OPC UA Client	OPC UA	OPC UA OPC Server		
OPC UA Subscriber	OPC UA	OPC UA Publisher		
DDE Client	DDE	DDE Server		

DxpLink Client	DxpLink (HTTP communication)	DxpLink Server (DeviceXPlorer)	
Shared Memory	Shared memory	Internal memory of DeviceXPlorer	

* For target module details, refer to the "User's Guide (PLC Communication Edition)".

* Please contact us if you wish to use OPC UA subscribers.

3 Installation

3.1 Install Procedure

(1) Inserting the Product CD in the drive launches the installer. Choose setup language in dialog.



Important

- You must have Administrator rights to set up.
- .NET Framework 3.5 setup is required before installing the 32-bit application.
- (2) Install the components which are necessary to operate DeviceXPlorer. Press "Install".

InstallShield Wizard
DeviceXPlorer OPC Server requires that the following requirements be installed on your computer prior to installing this application. Click OK to begin installing these requirements:
Status Requirement
Pending MSXML 6.0 Parser (x86)
Install Cancel

(3) When the InstalShield Wizard is displayed, press "Next."

DeviceXPlorer OPC Server 6 - InstallShield Wizard		×
	Welcome to the InstallShield Wizard for DeviceXPlorer OPC Server 6 The InstallShield Wizard will install DeviceXPlorer OPC Server 6 on your computer. To continue, click Next.	
	< Back Next > Cancel	

(4) Agree with the License Agreement, and click "Yes."

DeviceXPlorer OPC Server 6 - InstallShield Wizard	×
License Agreement Please read the following license agreement carefully.	
Press the PAGE DOWN key to see the rest of the agreement.	
SOFTWARE LICENSE AGREEMENT IMPORTANT THANK YOU FOR PURCHASING OUR PRODUCT. THIS PRODUCT IS PROVIDED ONLY UPON YOUR AGREEMENT TO THIS AGREEMENT. PLEASE READ CAREFULLY THE TERMS AND CONDITIONS OF THIS SOFTWARE LICENSE AGREEMENT (HEREINAFTER REFERRED TO AS gAGREEMENTH). IF YOU DO NOT AGREE TO THE TERMS OF THIS AGREEMENT, PLEASE RETURN THE UNOPENED PACKAGE CONTAINING THE MEDIA TO THE DISTRIBUTOR OR TO THE SALES OFFICE. NO RETURNS WILL BE ACCEPTED IF THE PACKAGE IS OPENED. TAKING OUT THE MEDIA	^
Do you accept all the terms of the preceding License Agreement? If you select No, the setup will close. To install DeviceXPlorer OPC Server 6, you must accept this agreement. InstallShield	
< Back Yes No	

(5) Input user information and Serial Number. Click "Next."

DeviceXPlorer OPC Server 6 - InstallShield Wizard	×
Customer Information Please enter your information.	Nº2
User Name:	
Taro Takebishi	
Company Name:	
Takebishi	
Serial Number:	
123456789-12345678	
Install this application for:	
 Anyone who uses this computer (all users) 	
InstallShield	
< Back Next >	Cancel

Note

Please input the Serial Number that has been described to the product accurately.

If inputting invalid Serial Number, following dialog will be displayed. If you would like to use as demo edition, please input a hyphen symbol "-" in Serial Number.

DeviceXPlorer OPC Server 6 - InstallShield Wizard		
Serial number is invalid. Will you install this software as demo edition?		
	Yes No	

(6) Select where you wish to install the system or components you wish to install as may be necessary.

eviceXPlorer OPC Server 6 - InstallSh	hield Wizard	>
Choose Destination Location		
Select folder where setup will install	files.	
Setup will install DeviceXPlorer OPC	Server 6 in the following folder.	
To install to this folder, click Next. To another folder.	o install to a different folder, click Br	rowse and select
Destination Folder		
Destination Folder C:\Program Files (x86)\TAKEBISHI	\DeviceXPlorer OPC Server 6\	Browse
Destination Folder C:\Program Files (x86)\TAKEBISHI	\DeviceXPlorer OPC Server 6\	Browse
Destination Folder C:\Program Files (x86)\TAKEBISHI stallShield	\DeviceXPlorer OPC Server 6\	Browse

(7) Select Installing component.

DeviceXPlorer OPC Server 6 - InstallShield Wizard		×
Select Features Select the features setup will install.		
Select the features you want to install, and desele	ct the	features you do not want to install.
DeviceXPlorer OPC Server 6 PLC Communication Drivers Mitsubishi MELSEC Mitsubishi MELSEC GEZSocket Components OMRON SYSMAC OMRON SYSMAC Vokogawa FA-M3 Hitachi EH150/H Mitsubishi ELITE	<	Description PLC Communication Drivers
288.49 MB of space required on the C drive 111671.25 MB of space available on the C drive InstallShield	< Bac	k Next > Cancel

Note

The communication function selected here can be used. If you want to use all communication functions, check all of them.

(8) If MELSEC EZSocket component is selected, select the installation destination of EZSocket component.

DeviceXPlorer OPC Server 6 - InstallShield Wiz	zard		×
Choose Destination Location Select folder where setup will install files.			Z
Select EZSocket component install folder.			
Destination Folder C:WELSEC			Browse
InstallShield	< Back	Next >	Cancel

Note

When EZSocket components installation, following message may be displayed. In that case, update the software shown in the message.



(9) Select the program folder.

DeviceXPlorer OPC Server 6 - InstallShield Wizard	Х
Select Program Folder Please select a program folder.	Z
Setup will add program icons to the Program Folder listed below. You may ty name, or select one from the existing folders list. Click Next to continue.	pe a new folder
Program Folder: DeviceXPlorer OPC Server 6 Existing Folders:	
Accessibility Accessories Administrative Tools Maintenance StartUp System Tools	
InstallShield	Cancel

(10) Preparation for installation is now complete. Press "Install" to start installation.

DeviceXPlorer OPC Server 6 - Ins	stallShield Wizard	×
Start Copying Files Review settings before copyin	ig files.	
Setup has enough information change any settings, click Bad copying files.	to start copying the program files. If you w k. If you are satisfied with the settings, clic	ant to review or k Next to begin
Current Settings:		
Destination Folder C:\Program Files (x86)\TAKE EZSocket Component Destina C:\MELSEC Program Folder DeviceXPlorer OPC Server 6	BISHI\DeviceXPlorer OPC Server 6\ ation Folder	^
<		>
InstallShield	< Back Next >	Cancel

(11) When the Windows component is updated, it is necessary to restart PC.

DeviceXPlorer OPC Server 6 - InstallShield Wizard			
	InstallShield Wizard Complete Setup has finished installing DeviceXPlorer OPC Server 6 on your computer.		
	< <u>B</u> ack Finish Cancel		

3.2 Installation Files

DeviceXPlorer installation sets up the following files.

Description	Setup path	Note
DeviceXPlorer	Installation folder ¥BIN	
		Server Edition
User's Guide	Installation folder ¥Doc	PLC Communication Edition
		Software license agreement
Option File	Installation folder ¥Option	License Request File template
OPC DA componenta	Windows system folder	OPC DA2.0/3.0 custom interface
OFC DA components	Windows system loider	OPC DA2.0 automation interface
Windows components	Windows system folder	VC runtime library

3.3 Uninstall Procedure

You can uninstall DeviceXPlorer by following the Procedures below.

- Disconnect all connections from client applications and quit DeviceXPlorer.
 If it is running as a service program, go to the "Control Panel -> Services", and stop "DeviceXPlorer OPC Server 6".
- (2) In the Control Panel, select "Add/Remove Program"

Programs and Features				-	- D X
← → × ↑ 🖬 > Control P	anel > Programs > Programs and Features		√ Ö Se	arch Programs a	and Features $ \rho $
Control Panel Home	Uninstall or change a program				
View installed updates	To uninstall a program, select it from the list and then	click Uninstall, Change, or Repai	ir.		
Turn Windows features on or					
off	Organize 🕶 Uninstall Change				III • 🕜
	Name	Publisher	Installed On	Size	Version
	😋 CodeMeter Runtime Kit v6.90	WIBU-SYSTEMS AG	11/12/2019	64.6 MB	6.90.3691.500
	DeviceXPlorer OPC Server 6	TAKEBISHI Corporation	11/12/2019	259 MB	6.0.0.1
	C Microsoft OneDrive	Microsoft Corporation	11/11/2019	112 MB	19.002.0107.0005
	Microsoft Visual C++ 2010 x86 Redistributable - 10.0	Microsoft Corporation	11/12/2019	11.1 MB	10.0.40219
	TAKEBISHI Corporation Product version: 1 Help link: 1	6.0.0.1 http://www.faweb.netUpdate	Support link: http: information: http:	//www.faweb.n //www.faweb.n	et/en/ et/en/

(3) Remove "DeviceXPlorer OPC Server 6".

DeviceXPlorer OPC Server 6 - InstallShield Wizard	×
Welcome Modify, repair, or remove the program.	
Welcome to the DeviceXPlorer OPC Server 6 Setup Maintenance program. This program le you modify the current installation. Click one of the options below.	ts
OModify	
Select new program features to add or select currently installed features to remove.	9
Repair Reinstall all program features installed by the previous setup.	
Remove Remove all installed features. InstallShield	
< Back Next > Cance	el

(4) Even after DeviceXPlorer has been uninstalled, project file created by the user will remain.

Important

If you have activated the software key, please deactivate the software key before uninstalling. (Refer to 3.4.12)

3.4 License Activation

License activation is necessary in order to run DeviceXPlorer properly.

The license agreement for our software products grants the right to install and use the product on a specific PC. Depending on the product type, a software key or a hardware key may be required to operate the product.

Important

DeviceXPlorer license is activated through following 2 steps..

(1) Activation with serial number of DeviceXPlorer.

(2) Activation with hardware key or software key

3.4.1 Serial Number

The serial number is a unique number that you receive when you purchase a product.

After purchase, the customer must register as a user based on this serial number.

Also, using this serial number, it is necessary to register the serial number on DeviceXPlorer.

Important

DeviceXPlorer periodically conducts a serial number check to see if there are multiple DeviceXPlorer running on PCs in the same LAN.

Note that if DeviceXPlorer sharing the same serial number are found, operation will stop immediately.

3.4.2 Software Key

If you purchased software key product, "Ticket ID" is required to activate the software key. The "Ticket ID" can be acquired by registering the exact serial number at user registration after purchase, and it is required to activate the software.

3.4.3 Hardware Key

If your product requires a hardware key, both the serial number and the hardware key must be set up on the same PC. When the hardware key included in the package is inserted into the PC where DeviceXPlorer is installed, the hardware key is activated.

Note

The hardware key must always be inserted to the PC while DeviceXPlorer is running.

3.4.4 License Status and Application Operation

You could check a table below shows the relations between license activation status and application operation and confirm the license status on the "License" screen of the "Help" menu.

License status	Status	Application operation
Normal Mode	OK(KEY)	The license is effective, so no further actions are required.
Demo Mode	DEMO	Operates in demo mode for 1 hour.
NO KEY	NO KEY	Hardware key or software key is required.
STOP	STOP	The operation stops. Activate license is required.
		A temporary license has been applied. The license is valid until valid date.
		In software key edition, you need to activate the key within 14 days after
		installation.
		On the user registration page, enter your serial number and other required
T	TERM	information, submit it. We will inform you of the ticket ID necessary for
Iemporary		license activation.
widde		URL <u>https://www.faweb.net/en/user-form/</u>
		If you can't get a ticket ID after user registration, would you contact us to
		the following email address?
		Email address: <u>fa-support@takebishi.co.jp</u>
		If the software key or hardware key becomes temporarily unrecognizable,
		the application will continue to operate under the original license state as a
GRACE Mode	GRACE	grace period of 180 minutes in GRACE mode.
		However, if the application has been running for a long time, this grace
		period may be extended up to 10 days.

The items on the "License" screen are as follows.

Item	Description
Component	[PLATFORM] component: Application base.
Component	For others, the component name for each connected device is displayed.
	[PLATFORM] component: License name is displayed. ENTERPRISE, ADVANCED, STANDARD or
Version	DEMO.
	For others, the version of the component is displayed.
Status	The license status of each component is displayed.
Serial Number	The applied serial number is displayed.
Key information	The applied key information is displayed.
	The expiration date is displayed when the status is [TERM].
valid Date	In GRACE mode, the remaining grace period is displayed.

3.4.5 Serial Number

3.4.5.1 Serial Number Registration

DeviceXPlorer serial number authentication procedure.

- (1) Open the license screen from "Help" on DeviceXPlorer.
- (2) Select the "Component" to be authenticated, right-click and click "License Activation".
- (3) Input the serial number and click "Activate" to complete.

Component	PLATFORM	
Version	NONE	
Serial No.	123456789-123465678	
Key information		
		_

3.4.5.2 Change the activated Serial Number

You could change the activated serial number.

It is necessary to input the original serial number and the target serial number.

Change Lice	nse	×
Please inpu	it original Serial No. of the change.	
	123456789-12345678	
Please inpu	ıt target Serial No	
	00000001-00000001	
	Change Cancel	

3.4.5.3 **Deactivate the Serial Number:**

The Procedures of deactivate the serial number.
(1) Open the license screen from "Help" on the OPC server.
(2) Select the "Component" to be deactivated, right-click and click "License Activation".
(3) Input the serial number and click "Clear" to complete.

License Activation			
Component	PLATFORM		
Version	ENTERPRISE		
Serial No.	123456789-123465678	isonso Close	×
Key information	130-3803547377 [SWKEY]		^
Key Serial:130-380 Key Server:TAKEBI	03547377 [SWKEY] SHI-PC[255.255.255] Change Activate Close	Please input Serial No. of the deletion. Target Serial No. : 123456789-12345678 Clear Ca	ncel

3.4.6 Activation of License Flow

The activation of license flow for software keys and hardware keys is shown below.



3.4.7 Deactivation of License Flow

The deactivation of license flow for software keys and hardware keys is shown below.



Important

If you are unable to deactivate the software key due to PC failure or such, please contact our support.

3.4.8 Transfer of License Flow

When transferring a license to another PC, deactivate the license at the source PC and activate the license at the destination PC.

3.4.8.1 **Deactivate the license at the source PC**

Deactivate the license at the source PC with licensed DeviceXPlorer by following steps..

- (1) Deactivate the serial number of DeviceXPlorer.
- (2) If hardware key is activated, remove the hardware key.
- (3) If the software key is activated, deactivate the software key. Refer to "3.4.12 Deactivate the Software Key (Online)" or "3.4.13 Deactivate the Software Key (Offline)".
- (4) Uninstall DeviceXPlorer.

3.4.8.2 Activate the license in the transferred PC

Activate the license at the destination PC with DeviceXPlorer installed by following the steps below.

- (1) Register the serial number of DeviceXPlorer.
- (2) In case of hardware key, attach the hardware key to the PC.
- (3) In case of software key, activate the software key. Refer to "3.4.10 Activate Software key (Online)" or "3.4.11 Activate the Software Key (Offline)".

3.4.9 User Registration

Please complete user registration on the FAWEB website, (FAWEB: <u>https://www.faweb.net/en/</u>) with the correct serial number (9 digits -8 digits) that you acquired when purchased.

If you purchased the software key product, a ticket ID will be sent to your e-mail when you complete use registration on the FAWEB site. The ticket ID is required to activate the software key.

If you purchase Hardware key, Ticket ID will not be sent.



3.4.10 Activate the Software Key (Online)

The following shows the procedure for activating software key when a PC with DeviceXPlorer installed can connect to the Internet.

* The ticket ID is required to activate. Please complete 3.4.9 User Registration to acquire the ticket ID..

 Open the license registration web page ("License") in FAWEB. (The license registration web page: <u>http://license.faweb.net/</u>)



(2) Input the ticket ID in the "Ticket", which you acquired at user registration on the license registration page, and click "Next.

∼ такеві(ні	English	*
Home Auto Update		
Welcome to CodeMeter License Central WebDepot		
Welcome to CodeMeter License Central WebDepot. You can transfer your licenses to your CmContainer Please enter your ticket and click "Next".	using this WebDepot.	
Ticket: AAAAA-BBBBBB-CCCCC-DDDDD-EEEEE Next		
© TAKEBISHI CORPORATION		
Legal Notice CodeMeter License Central WebDepot v19.07.210.500.ws		

(3) My Licenses screen is displayed. Confirm that the ticket ID is correctly filled, and click "Activate Licenses".

👕 ТАКЕВІ(НІ			English	
Home My Licenses Auto L	Ipdate			
My Licenses				
Name	Ticket	Activated On	CmContainer	Status
Takebishi Product CmActLicense Item	AAAAA-BBBBB-CCCCC-DDDDD-EEEEE	}		Available
Activate Licenses				
© TAKEBISHI CORPORATION				
Legal Notice CodeMeter License Centra	I WebDepot v19.07.210.500.ws			

(4) Click "Activate Selected License Now".

Use the ticket ID acquired by this operation to activate the license.

₩ ТАНЕВІ(НІ			English	88 💌
Home My Licenses Auto Upda	te			
Available Licenses				
To activate your licenses: 1. Select the licenses you want to activate 2. Select the locally connected CmContain 3. Click "Activate Selected Licenses Now"	er to which you want to transfer the licenses.			
z Name	Ticket	Activated On	CmContainer	Status
\star Takebishi Product CmActLicense Item	AAAAA-BBBBB-CCCCC-DDDDD-EEEEE	3		Available
Select CmContainer 130-281881709 (Takebishi CmActLicense 60	001002) * U			
Activate Selected Licenses Now			File-based lic	ense transfer
My Licenses				
© TAKEBISHI CORPORATION				
Legal Notice CodeMeter License Central We	sbDepot v19.07.210.500.ws			

(5) The following screen is displayed when process is completed.

When the message "License transfer completed successfully!" is displayed, Software Key Activation is complete.

Online Lice	ense Transfer
Starting lice	ense transfer.
Creating lic Downloadin	ense request.
Importing li	cense update to CmContainer.
Creating re	ceipt.
Uploading r	eceipt.
	License transfer completed successfully!
ОК	

3.4.11 Activate the Software Key (Offline)

The following shows the Software Key Activation procedure when a PC on which DeviceXPlorer is installed cannot connect to the Internet.

* Use a PC that can access the Internet (hereinafter referred to as an Online PC) to activate a license for a PC (hereinafter referred to as an Offline PC) that has a DeviceXPlorer that cannot access the Internet.

* The ticket ID is required to activate. Please complete 3.4.9 User Registration to acquire the ticket ID..

(1) Place the "License Request File Template" stored on the installation disc (Option¥SWkeyOfflineActivation) or in the installation directory of the DeviceXPlorer (Option¥SWkeyOfflineActivation¥) in the any location on the offline PC.

License request file template "Template 6001002 2004 WibuCmLJF"

Template	_0	001002_2004.001	ouomini							
🗎 🛃 = Doc	ument	15					-		×	
File Home	Share	View							~ 0	
< → · ↑ 🖪	> Thi	s PC > Documents				5 V	Search Documents		,p	
		Name	Date modified	Type	Size					
A Quick access		TAKEBISHI	11/12/2019 4:22 PM	File folder						
Desktop	1	Template_6001002_2004	11/12/2019 3:44 PM	WIBU CM license i	2 KB					
Documents	1									
Pictures	*									
Music										
Videos										
 OneDrive 							0##	lir	ne F	PC .
This PC										
	-									
Network										

(2) On the offline PC, start the "CodeMeter Control Center" from the Start menu or the following path. CodeMeter Control Center File path to store; C\Program Files (x86)\CodeMeter\PRuntime\Din\CodeMeterCC.exe

	CodeMeter	1410	
	Backup	Offline	PC
	CmAct		
	CmDust		
	CodeMeter Command	Prompt	
C	CodeMeter Control Cer	nter	
0	CodeMeter User Help		
	Logs		

(3) Open CodeMeter Control Center, and Copy & Drop the "License Request File template" on "License" of CodeMeter Control Center.

CodeMeter Control Center	- 🗆 🗙 📳 🖸 🗌	⇒ Documents				-		>
ile Process View Help	File H	ome Share View						×
License Events	$\leftarrow \rightarrow$ *	1 🗄 > This PC > Documer	its		~ Ö	Search Documents		5
No CodeMeter License info	rmation available.	Name	^	Date modified	Туре	Size		
No CmContainer found.	🖈 Quick	TAKEBISHI		11/12/2019 4:22 PM	File folder		_	
		😬 Template_6	001002_2004.WibuCmLIF	11/12/2019 3:44 PM	WIBU CM lie	cense i 2 KB	1	
(+ Copy)	Mus Wide OneD This P	c is ive						
	web & deriv				0ffl	ine P	C	

(4) After placing "License Request File template", "Empty License Container" is displayed on "License" in CodeMeter Control Center. Select the added license container and click "Update License".

S CodeMeter Control Center	_		×
File Process View Help			
License Events			
Takebishi CmActLicense 60010 130-2596107912 Name: Takebishi CmActLicense	6001002		
Serial: 130-2596107912			
Version: CmActLicense 3.00			
Status: 🕥 Empty license cont	ainer		
License Update Remove License			
CodeMeter service is running.		WebAd	min

(5) Click the "Next.>" button.



(6) Check "Create license request" and click "Next".



(7) Save the created "License Request File " in any folder, specify the save folder to save and click "Next".



(8) The "" License Request File" is created, the following screen is displayed.

Click "Finish". Generation of a "License Request File" based on the template is completed by the above Procedures.

		?	>
CmFAS Assistant			
The license request file has been successfully created.			
The license request file has been successfully created. You can send it now to the vendor of the software by email.			
Fini	sh	ŀ	lelp

(9) Transfer the "License Request File" that created in Offline PC to any folder on the Online PC.

1 🖂 🗖	⊋ Doc	uments						-	×	🗟 i 🔽 📕 👳 i Docu	ment	5				
File H	ome	Share	View						~ 👩	File Home St	hare	View				
⊢ → •	↑ 🗎	> This	PC > Documents >				võ	Search Documents	P	← → * ↑ 😫 >	This	PC > Documents >				~ Ö
			Name	Date modified	Туре	Size						Name	Date modified	Туре	Size	
A Quick	access		TAKEBISHI	11/12/2019 4:22 PM	File folder					🖈 Quick access		TAKEBISHI	11/12/2019 4:22 PM	File folder		
Desk	top	<i></i>	Template_6001002_2004.WibuCmLIF	11/12/2019 6:29 PM	WIBU CM license i	2 K	В			Desktop	Я	Template_6001002_2004.WibuCmLIF	11/12/2019 6:29 PM	WIBU CM license i	2	KB
- Dow	nioads	×	130-2596107912.WibuCmRaC	11/12/2019 6:37 PM	WIBU Control File					Downloads	*	130-2596107912.WibuCmRaC	11/12/2019 6:37 PM	WIBU Control File	3	KB
🗎 Docu	iments	A								ocuments	\mathcal{A}					_
📰 Pictu	res	*								Pictures	*					
👌 Mus	c									Music						
📱 Vide	os									🚰 Videos						
OneDr	ive									 OneDrive 					_	
💻 This P	С		0661 :	DO						This PC			Onli	no Dí	<u>)</u>	
🧊 3D O	bjects		UTTIINE	PG						3D Objects					,	
Desk	ton									Deckton						
																_

(10) Open the license registration web page("License") in FAWEB on the Online PC. ("License" in FAWEB : <u>http://license.faweb.net/index.php</u>)



(11) Input the ticket ID in the "Ticket:", which you acquired at user registration on the license registration page, and click "Next.

On	Home Auto Update	English	勝 I
	Welcome to CodeMeter License Central WebDepot Welcome to CodeMeter License Central WebDepot. You can transfer your licenses to your CmContainer Please enter your ticket and click "Next".	using this WebDepot	14 14
	Ticket: AAAAA-BBBBB-CCCCC-DDDDD-EEEEE Next		
	© TAKEBISHI CORPORATION		
	Legal Notice CodeMeter License Central WebDepot v19.07.210.500.ws		

(12) My Licenses screen is displayed. Confirm that the ticket ID is correctly filled, and click "Activate Licenses".

Online PC			English	
Home My Licenses	Auto Update			
My Licenses				
Name	Ticket	Activated On	CmContainer	Status
Takebishi Product CmActLice	inse Item AAAAA-BBBBB-CCCCC-DDDDD-EEEEE	3		Available
Activate Licenses				
© TAKEBISHI CORPORATION	u			
Legal Notice CodeMeter Lice	nse Central WebDepot v19.07.210.500.ws			

(13) Available Licenses screen is displayed. Click "Offline License Transfer". Click "File-based license transfer".

Online PC	Lindate		English	**
Available Licenses				
To activate your licenses: 1. Select the licenses you w 2. Select the locally connec 3. Click "Activate Selected I	ant to activate. ed CmContainer to which you want to transfer the icenses Now".	licenses.		
Name Takebishi Product CmAct	Ticket	Activated On	CmContainer	Status Available
Select CmContainer 130-281881709 (Takebishi Cn	ActLicense 6001002) 🔹 🚺			
Activate Selected Licenses	Now		File-based lic	ense transfer
My Licenses				
Legal Notice CodeMeter Licer	ise Central WebDepot v19.07.210.500.ws			

(14) The following screen is displayed. Click on "Select File" and select the "License Request File" that transferred in procedure (9). Then click on "Start Activation Now".

		English 🕱 💌
Uni	ine PC	
	Auto Update	
	Available Licenses	
	Upload Request Download Update	Upload Receipt
	To activate your licenses via file transfer - First step "Upload Request":	
	If you have activated licenses from this ticket already, you can transfer additional licenses into the same to use another CmContainer, you need a license request file of this new CmContainer.	CmContainer(s). If you want
	 Select an already used CmContainer or create a license request file with Firm Code 6001002 for the want to transfer the licenses to. This file can for example be created with CodeMeter Control Center. I. Start CodeMeter Control Center on the computer where the desired CmContainer is more template now. Import this template by dragging the downloaded file to CodeMeter Control Center. C. Click "License Update". Choose a filename for the license request file. Transfer the license request file that you just created to this computer. Select the license request file that you just created to this computer. Select the license request file. Click "Commit to save the license request file. Transfer the license request file. Select the license request file. Select the license request file. Click "Commit to save the license request file. Select the license request file. Click "Commit to save the license request file. Select the license request file. Click "Commit to save the license request file. Select the license request file. Click "Commit to save the license request file. Select the license request file. Select the license request file. Click "Continue". 	CmContainer where you How II works Attachere: Download
	Takebishi Product CmActLicense Item AAAAA-BBBBB-CCCCC-DDDDD-EEEEE	Available
	Select an already used CmContainer No CmContainer found! ~	
	or	
	Pick a license request file (*.WibuCmRaC) of another CmContainer	Browse
	Start Activation Now	
		Direct license transfer
	My Licenses	
	© TAKEBISHI CORPORATION	
	Legal Notice CodeMeter License Central WebDepot v19.07.210 500.ws	

(15) Click "Download License Update File Now" to create the "License Update File".

Online PC			English	1
Home My Licenses Auto Update				
Download License Update File				
Upload Request 🗸	Download Update		Upload Receipt	
CodeMeter Control Center. How it works 3. After you have successfully transferred the licen: Download License Update File Now Ne	se update file to the CmConta	iner, click "Next" to c	onfirm the license tran	sfer.
T My Linenses	_		Direct inc	2158 0 815181
© TAKERISHI CORPORATION				
Legal Notice CodeMeter License Central WebDebot	V10 07 210 500 WC			

(16) Copy the "License Update File" to any location on offline PC.

I v i Documents							🔄 🖂 🔄 🚽 Documents												
File Home St	nare	View						File	File Home Share View										
\leftrightarrow \rightarrow \uparrow \textcircled{B} ,	This	sPC > Documents >				~	5 Sei	arch ←	→ ~ ↑ 🗄) > Th	is PC 🔅	> Documents >				νõ	Search Docum		
		Name	Date modified	Туре	Size						Nan	me	Date modified	Туре	Size				
Quick access		TAKEBISHI	11/12/2019 4:22 PM	File folder					Quick access			TAKEBISHI	11/12/2019 4:22 PM	File folder					
Desktop	<u> </u>	Template_6001002_2004.WibuCmLIF	11/12/2019 6:29 PM	WIBU CM license i		2 KB			Develop		1.00	Template_6001002_2004.WibuCmLIF	11/12/2019 6:29 PM	WIBU CM license i	2 KE	3			
Downloads		Raf 120,2596107912 Wilhur ConRaf	11/12/2010 6-27 PM	WIRLL Control File		3 KR			Downloads	7		120,2506107012 WilhurCmRaC	11/12/2010 6-27 DM	WIRLL Control File	3.63				
Dicturer	2	130-2596107912.WibuCmRaU	11/12/2019 8:06 PM	WIBU CM remote	_				dicturer	-	3	130-2596107912.WibuCmRaU	11/12/2019 8:06 PM	WIBU CM remote	. 11 Ki				
h Music	~								Music	~									
Videos									Videos										
in the second																			
								•	OneDrive							_	_		
0									This PC					NEELH	no	D			
U									🕽 3D Objects								J		
									Desktop										
									Decuments										

(17) Start CodeMeter Control Center on an Offline PC. Select the license that is "Empty license container" and Click "License Update".



(18) Check "Import license update" and click "Next".


(19) Select "License Update File" saved in Offline PC and click "Commit".

OK



(20) To confirm that the license of the Offline PC has been updated, create a receipt file from "here" on this screen.



When you activate the software key in an offline environment, you must create a receipt file and upload it to "License" page in FAWEB. Unless you upload the receipt file, you will not be able to perform some operations such as disabling the software key.

(21) Specify any folder and save the created receipt on the Offline PC and click "Commit".*The file is generated with the same name as the "online request file", change the file name if necessary.



(22) When the created license file is saved, the following screen is displayed.



(23) Transfer the "receipt file" saved in Offline PC to on Online PC.



(24) Open the license registration web page on the Online PC and upload the receipt transferred from the Offline PC. Click "Select File" and select the "receipt file".

Online PC	English	
Home My Licenses Auto Update		
Confirm License Transfer		
Upload Request / Download Update	Upload Receipt	
To transfer your licenses via file - Third step "Upload Receipt": 1. Create a license receipt file from the CmContainer with Serial 130-2596107912 and Firm Code 600 example be created with CodeMeter Control Center. How it works [2] 2. Select the created license receipt file. 3. Click "Upload Receipt Now". If you haven't imported the license update file yet, you can download it again. Click "Back" to get to the Pick license receipt file (*.WibuCmRaC) Choose File No file chosen	01002. This file can for e download page.	
Upload Receipt Now Back	Direct lice	nse transfer
My Licenses		
© TAKEBISHI CORPORATION		
Legal Notice CodeMeter License Central WebDepot v19.07.210.500 ws		

(25) After selecting "Receipt File", click "Upload Receipt Now".

To transfer your licenses via file - Third step "Upload Receipt":
1. Create a license receipt file from the CmContainer with Serial 130-2596107912 and Firm Code 6001002. This file can for
2 Select the created increase access file
3. Otick "Linhad Receipt Now"
If you haven't imported the license update file yet, you can download it again. Click "Back" to get to the download page.
Pick license receint file (* WibuCmRaC)
Choose File Reciept Wibuch Rac
Upload Receipt Now Back Direct license transfer
My Licenses
© TAKEBISHI CORPORATION
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Legal Notice CodeMeter License Central WebDepot v19.07.210.500.ws

(26) When uploading of "receipt file" is completed, the following screen is displayed.

↑ такеві{ні						English	*	
Home My Li	censes Auto I	Update						
License Transfe	r Successfully	Comple	eted					
The license transfe	er has been comple	eted succes	ssfully.					
ОК								
© TAKEBISHI CORP	ORATION							
Legal Notice CodeN	leter License Centra	al WebDep	oot v19.07.210).500.ws				

(27) When you click "OK", the following screen is displayed and Software Key Activation for the Offline PC is complete.

√ такеві\$ні			English	
Home My Licenses Aut	o Update			
Name	Ticket	Activated On	CmContainer	Status
Takebishi Product CmActLicense Item	AAAAA-BBBBB-CCCCC-DDDDD- EEEEE	2019-11-12 18:04:57	• 130- 281881	/ ctivated
Re-Host Lik enses				
© TAKEBISHI CORPORATION				
Legal Notice CodeMeter License Cer	ntral WebDepot v19.07.210.500.ws			

3.4.12 Deactivate the Software Key (Online)

(1) Open the license registration web page ("License" <u>http://license.faweb.net/index.php</u>) in FAWEB.



(2) Input the ticket ID in the "Ticket:", which you acquired at user registration on the license registration page, and click "Next. (Ticket ID linked to product serial number.)

₩ TAREBIŞHI	English	
Home Auto Update		
Welcome to CodeMeter License Central WebDepot		
Welcome to CodeMeter License Central WebDepot. You can transfer your licenses to your CmContainer Please enter your ticket and click "Next".	using this WebDepo	x.
Ticket: AAAAA-BBBBB-CCCCC-DDDDD-EEEEE		
Next		
© TAKEBISHI CORPORATION		
Legal Notice CodeMeter License Central WebDepot v19.07.210.500.ws		

(3) The screen will change to the My License Display screen. In order to proceed 'deactivate the software key', Click "Re-host Licenses".

TAREBI(HI Home My Licenses Aut	o Update		English	
My Licenses				
Name	Ticket	Activated On	CmContainer	Status
Takebishi Product CmActLicense Item	AAAAA-BBBBB-CCCCC-DDDDD- EEEEE	2019-11-12 18:04:57	• 130- 281881709	Activated
Re-Host Licenses				
© TAKEBISHI CORPORATION				
Legal Notice CodeMeter License Ce	ntral WebDepot v19.07.210.500.ws			

(4) "Re-Hostable Licenses" screen is displayed. Click "Deactivate Selected License Now".

🕆 такевіўні			English	*
Home My Licenses Auto U	Jpdate			
Re-Hostable Licenses				
To re-host licenses from one CmCor 1. Make sure that the CmContainer wi to this computer, connect it now and 2. Select the licenses you want to re-h 3. Click "Deactivate Selected Licenses 4. After the successful deactivation of	ntainer to another CmContainer: th Serial 130-281881709 is connected to dick: "Rescan for CmContainer", tost. s Now". the selected licenses, you can activate the Ticket	this computer. If this em again in another (CmContainer is not c CmContainer.	onnected
Takehishi Product CmActLicense	AAAAA-BBBBB-CCCCC-DDDDD-	2019-11-12	130-	Activated
Item	EEEEE	18:04:57	281881709	Acavatoo
Deactivate Selected Licenses Now			File-based li	icense transfer
My Licenses				
© TAKEBISHI CORPORATION				

(5) The following screen is displayed when process is completed..When the message "License transfer completed successfully!" is displayed, Software Key Activation is complete.



3.4.13 Deactivate the Software Key (Offline)

The following shows the procedure for deactivate the software key when the PC on which DeviceXPlorer is installed cannot connect to the Internet.

* Use a PC that can access the Internet (hereinafter referred to as Online PC) to transfer the software key of the PC (hereinafter referred to as Offline PC) where DeviceXPlorer that cannot access the Internet is installed.

 Open "CodeMeter Control Center" on the Offline PC. Select the license you want to transfer, and click "License Update".

CodeMeter Control Center File Process View Help				-		×
 Takebichi CrnActLicense 60010 130-2596107912 	Name: Ta Serial: 13 Version: Cr	kebishi CmActLicense 6001002 10-2596107912 mActLicense 3.00				
CodeMeter service is running.	Status: C	Ucense activated	0fflin	e	PC	

(2) Click the "Next".



(3) Check "Create license request" and click "Next".



(4) Save the created "License Request File" in any folder, click "Commit".



(5) The "License Request File" is created, the following screen is displayed. Click "Finish".

	?	×
← S CmFAS Assistant		
The license request file has been successfully created.		
The license request file has been successfully created.		
You can send it now to the vendor of the software by email.		
Finish	He	elp

(6) Copy the "License Request File" from the folder of the Offline PC to the Online PC.



(7) Open the license registration web page ("License") in FAWEB.(The license registration web page: <u>http://license.faweb.net/index.php</u>)



(8) Input the ticket ID got at the time of user registration, and click "Next". (Ticket ID linked to product serial number is issued.)

[™] такеві{ні	English	*
Home Auto Update		
Welcome to CodeMeter License Central WebDepot		
Welcome to CodeMeter License Central WebDepot. You can transfer your licenses to your CmContaine Please enter your licket and click "Next".	r using this WebDepot	L ₂
Ticket: AAAAA-BBBBB-CCCCC-DDDDD-EEEEE		
Next		
© TAKEBISHI CORPORATION		
Legal Nolice CodeMeter License Central WebDepot v19.07.210.500 ws		

(9) My Licenses screen is displayed. (The license installed on the offline PC is displayed.) Click on "Re-Host license" to proceed the procedure of deactivating the software key.

Home My Licenses Auto Update My Licenses	My Licenses Auto Update Censes Ticket Activated On CmContainer tatus shi Product CmActLicense AAAAA-BBBBBB-CCCCCC-DDDDD- EEEEE 2019-11-12 18:04:57 130- 281881709 ctivated
ing Licenses	Ticket Activated On CmContainer latus shi Product CmActLicense AAAAA-BBBBBB-CCCCCC-DDDDD- EEEEE 2019-11-12 130- 18:04:57 281881709
Name Ticket Activated On CmContainer tatus	shi Product CmActLicense AAAAA-BBBBBB-CCCCCC-DDDDD- 2019-11-12 • 130- / ctivated EEEEE 18:04:57 281881709
Takebishi Product CmActLicense AAAAA-BBBBB-CCCCC-DDDDD- EEEE 2019-11-12 130- 281881709 A tivated	

(10) The following screen is displayed. Click "File-based license transfer".

*An error message may displayed, which is no problem.

This is because the selected license does not exist on the Online PC.

Home My Licenses Au	nto Update			
Re-Hostable Licenses				
To re-host licenses from one Cm 1. Make sure that the CmContaine to this computer, connect it now 2. Select the licenses you want to 3. Click "Deactivate Selected Lice 4. After the successful deactivation	nContainer to another CmContainer: er with Serial 130-2596107912 is connecte v and click "Rescan for CmContainer". re-host. nese Now". n of the selected licenses, you can activate	d to this computer. If the them again in anothe	his CmContainer is not r CmContainer.	t connected
z Name	Ticket	Activated On	CmContainer	Status
 Takebishi Product CmActLicens Item 	W7XNE-J6UQP-R4CRK-L3NLE- KY29P	2019-11-13 10:59:37	130- 2596107912	Activated
Error The CmContainer with ser 0x1808810E CodeMeter License Centr 2019-11-13 06:41:30 (UTC Rescan for CmContainer	rial 130-2596107912 was not found. Please al WebDepot v19.07.210.500.ws C)	e connect it to your PC	or use file-based licer File-based	nse transfer. license transf
Error The CmContainer with set Ox1803810E CodeMeter License Centr 2019-11-13 06:41:30 (UTC Rescan for CmContainer My Licenses D TAKERISHI CORPORATION	rial 130-2596107912 was not found. Please al WebDepot v19.07.210.500.ws C)	e connect it to your PC	or use file-based licer File-based	nse transfer. Ticense transf
Error The CmContainer with set Ox1808810E CodeMeter License Centr. 2019-11-13 06:41:30 (UTC Rescan for CmContainer My Licenses TAKEBISHI CORPORATION Legal National CodeMeter License Code	rial 130-2596107912 was not found. Please al WebDepot v19.07.210.500.ws C)	e connect it to your PC	or use file-based licer	nse transfer.

(11) When the License Transfer screen is displayed, click 'Choose File' and select the 'License Request File' that you copied from your offline PC. Click on 'Upload Request and Continue Now'.



(12) Create the "license update file" on the following Procedures.

Click "Download License Update Fil	e Now".
------------------------------------	---------

∼ такеві ∫ні	English	
Home My Licenses Auto Update		
Download License Update File		
Upload Request 🗸 Download Update	Upload Receipt	
 Click "Download License Update File Now" and save the file on your computer. Import this license update file to the CmContainer with Serial 130-2596107912. This file can for exan CodeMeter Control Center. How it works After you have successfully transferred the license update file to the CmContainer, click "Next" to container. 	nple be imported with firm the license transf	er.
Download License Update File Now Next	Direct licen	se transfer
My Licenses		
© TAKEBISHI CORPORATION		
Legal Notice CodeMeter License Central WebDepot v19.07.210.500.ws		

(13) Copy the "License Update File" in any folder on the Offline PC.

Г

							Ele Home	Share	ts View					
Online PC			Date modified	v ⊘ Search € Date modified Type Size			← → ↑			Size	v õ	Search Docum		
🔲 Desktop 🖶 Downloads	*	Template_6001002_2004.WibuCmLIF	11/12/2019 4:22 PM 11/12/2019 6:29 PM 11/12/2019 6:27 PM	File folder WIBU CM license i. WIBL Control File		2 KB	Desktop	A A	TAKEBISHI Template_6001002_2004.WibuCmLIF 120.2596107912 WibuCmBaC	11/12/2019 4:22 PM 11/12/2019 6:29 PM 11/12/2019 6:37 PM	File folder WIBU CM license i. WIBL Control File		2 KB	
 Documents Pictures 	A A	3130-2596107912.WibuCmRaU	11/12/2019 8:06 PM	WIBU CM remote -		1	uments Pictures	* *	30-2596107912.WibuCmRaU	11/12/2019 8:06 PM	WIBU CM remote -	. 1	1 KB	
Music							Music							
 OneDrive This PC 							 OneDrive This PC 				Offl	in	a P	00
3D Objects							3D Objects							U
Desktop							Desktop							

(14) Start the CodeMeter Control Center on your offline PC. Select the license to deactivate and click "License Update".

CodeMeter Control Center File Process View Help License Events	Offline PC
Takebishi CmActLicense 60010 Name: Takebishi CmActLicense 130-2596107912 Serial: 130-2596107912 Version: CmActLicense 3.0	vense 6001002
Status: Status: License activa	ted
CodeMeter service is running.	WebAdmin

(15) When the following screen is displayed, select "Import license update" and click "Next".

	?	×
← ⓒ CmFAS Assistant		
Please select the desired action		
○ Create license request		
Choose this option if you want to create a license request file in order to send it to t software.	the vendor	r of the
Import license update		
Choose this option, if you received a license update file from the software vendor a import this file.	nd want to	0
○ Create receipt		
Choose this option if you want to confirm the successful import of a license update f software vendor.	file for the	
Next >	He	lp

(16) Select "License Update File" saved in any folder and click "Commit".

		?	×
÷	CmFAS Assistant		
	Please select the file name		
	C:/Users/seigi/Documents/130-2596107912.WibuCmRaU		
	Select a file under which the license update file is stored on your computer. Then dick on 'c import the new licenses.	ommiť to	5
	Commit	Hel	p

(17) When "License Update File" is imported, the following screen is displayed.



(18) To confirm that the license of the Offline PC has been updated, create a receipt file from "here" on this screen.

The lic	ense updat	e has been	successfull	y imported.			
You will fi for the v	ind details for th rendor please clic	e imported licen <mark>3 <u>here</u>,</mark>	ses in the Code№	1eter WebAdmin.	In order to crea	ate a rec	eipt

Important

When you deactivate the software key in an offline environment, you must create a receipt file and upload it to "License" page in FAWEB. Unless you upload the receipt file, you will not be able to perform operations such as activating the software key.

(19) Specify where to save of the created receipt file in any folder on the Offline PC and click "OK".

* The created "receipt file" is automatically named same as the "online request file". Change the file name if necessary.

	?	×
← 🞯 CmFAS Assistant		
Please select the file name		
C:/Users/seigi/Documents/Reciept.WibuCmRaC		
this file to the vendor by email.		
	Commit He	elp

(20) When the created license file is saved, the following screen is displayed.



(21) Copy the "receipt file" saved in Offline PC to on Online PC.

1-5														
] 🛃 📙 🖛 De	ocumer	nts						🚽 📙 🖛 🛛 Doo	ument	5				
File Home	Share	View					File	Home	Share	View				
· • f] > Th	is PC > Documents				~ 0	5	→ • ↑ 🗎	> This	PC > Documents				~ Ö
		Name	Date modified	Туре	Size					Name	Date modified	Туре	Size	
Quick access		TAKEBISHI	11/12/2019 4:22 PM	File folder			*	Quick access		TAKEBISHI	11/12/2019 4:22 PM	File folder		
Downloads	*	Template_6001002_2004.WibuCmLIF 120-2596107912.WibuCmPaC	11/12/2019 6:29 PM	WIBU CM license i		2 KB		Downloads	*	Template_6001002_2004.WibuCmLIF 130-2596107012 WibuCmPaC	11/12/2019 6:29 PM	WIBU CM license i		2 KB
Documents	*	130-2596107912.WibuCmRaU	11/12/2019 8:06 PM	WIBU CM remote		1 KB	4	Documents	*	30-2596107912.WibuCmRaU	11/12/2019 8:06 PM	WIBU CM remote	1	1 KB
Pictures	*	Reciept.WibuCmRaC	11/12/2019 8:16 PM	WIBU Control File		9 KB		E Pict es	*	Reciept.WibuCmRaC	11/12/2019 8:16 PM	WIBU Control File		9 KB
Music														
								Vide s						
	F-F	Lino PC					-	OneDrive						
U											()n	line	PG	

(22) Open the license registration web page on the Online PC, click "Next".

Online PC	English		
Download License Update File Upload Request √ Download Update	Upload Receip		
To transfer your licenses via file - Second step "Download Update": 1. Click "Download License Update File Now" and save the file on your computer. 2. Import this license update file to the CmContainer with Serial 130-2596107912. This file can for exa CodeMeter Control Centrer. How it works ∎ 3. After you have successfully transferred the license update file to the CmContainer, click "Next" to co	mple be imported v	ith Insfer.	
Download License Update File Now Next	Direct I	cense transfer	
© TAKEBISHI CORPORATION			
Legal Notice CodeMeter License Central WebDepot v19.07.210.500.ws			

(23) Upload the receipt file copied from the Offline PC. Click on "Choose File" and specify where to store the receipt file. After specifying the receipt file, click "Upload Receipt Now".

		English	
Unline PC			
Confirm License Transfer			
Upload Request V Download	Update	Upload Receipt	
To transfer your licenses via file - Third step "Upload Receipt":			
1. Create a license receipt file from the CmContainer with Serial 130-2	596107912 and Firm Code	e 6001002. This file can for	
example be created with CodeMeter Control Center. How it works	3		
3. Click "Upload Receipt Now".			
If you haven't imported the license update file yet, you can download it	again Click "Back" to get to	the download page	
Pick license receipt file (*.WibuCmRaC)			
Choose File Reciept.WibuCmRaC			
Unload Receipt Now Back			
		Direct licen	ise transfe
My Licenses			
TAKEBISHI CORPORATION			
egal Notice CodeMeter License Central WebDepot v19.07.210.500.ws			

(24) When "receipt file" is uploaded, the following screen is displayed to complete the deactivation of the software key.

∽ такеві(ні			English	
Home My Licen	ises Auto Update			
License Transfer S	Successfully Comple	eted		
The license transfer h	as been completed succe	ssfully.		
ОК				
© TAKEBISHI CORPOR	ATION			
Legal Notice CodeMete	er License Central WebDer	oot v19.07.210.500.ws		

When deactivation of the DeviceXPlorer on the Offline PC is completed, the status will be displayed as "Available".

🌱 TAREBI(HI			English	*
Home My Licenses Auto L	Jpdate			
My Licenses				
Name	Ticket	Activated On	CmContainer	Status
Takebishi Product CmActLicense Item	AAAA-BBBB-CCCCC-DDDD-EEEEE	-		Available
Activate Licenses				
CORPORATION				
Legal Notice CodeMeter License Centra	I WebDepot v19.07.210.500.ws			

3.4.14 Using the Software Key in the Virtual Environment

This section describes the procedure for using a hardware key license on a DeviceXPlorer in a virtual environment. Software key can be activate directly on the guest OS. However, the software key may not be activated correctly due to changes in the operating environment. Therefore, it is recommended to activate the software key on the host OS and use the license key from the guest OS.

Please follow the steps below to set up the host OS environment.

3.4.14.1 Set up CodeMeter Runtime on Host OS

In an environment where DeviceXPlorer is not installed, CodeMeter Runtime is required to be installed to use the license key.

- (1) Download the "CodeMeter Runtime setup file From the FAWEB download page (https://www.faweb.net/en/download/), and install it.
- (2) When the setup screen starts, click "Next", check "I accept the license agreement", and click "Next".



(3) Input the user information, and click "Next".

🖟 CodeMeter Runtime Ki	v6.90 Setup	- 🗆	×
Installation Scope Choose the installation	scope and folder		
User name: Organization:	Taro TAKEBISHI		
O Install just for	(seigi) e Kit v6.90 will be installed in a per-user fi	older and be available	
just for your user	s of this <u>m</u> achine		
CodeMeter Runtim and be available fo	e Kit v6.90 will be installed in a per-machir r all users. You must have local Administra	ne folder by default ator privileges.	
	Back	lext Can	cel

(4) Set the function to be set up as shown below, and click "Next".

CodeMeter Runtime Kit	t v6.90 Setup		_		×
Custom Setup Select the way you war	nt features to be instal	led.			
Click the icons in the tre	e below to change the	e way features w	vill be installed.		
	<mark>eter Runtime Kit</mark> Network Server WibuShellExtensior User Help	This features in Runtime Kit on	nstalls the Code your computer.	Meter	
	Automatic server s	This feature re drive. It has 3 The subfeature hard drive.	equires 42MB on of 4 subfeature es require 22MB	your hard s selected on your	
				B <u>r</u> owse	
Reset	Disk <u>U</u> sage	<u>B</u> ack	<u>N</u> ext	Cance	el

(5) When the following screen displayed, click "Install" to start the installation.

😾 CodeMeter Runtime Kit v6.90 Setup 🦳 — 🗌 🗙	😸 CodeMeter Runtime Kit v6.90 Setup — 🗆 🗙
Ready to install CodeMeter Runtime Kit v6.90	Completed the CodeMeter Runtime Kit v6.90 Setup Wizard
Click Install to begin the installation. Click Back to review or change any of your installation settings. Click Cancel to exit the wizard.	Click the Finish button to exit the Setup Wizard.
	Build 3691
Back Install Cancel	Back Finish Cancel

(6) The following describes the procedure to allow communication through CodeMeter's firewall in the firewall settings of the host OS. Open the "Allow an app or feature through Windows Firewall". (Control Panel > System and Security > Windows Firewall)

🔄 🎯 👻 🕈 🔮 🕨 Control P.	anel > All Control Panel Items > Windows Firewall				
Control Panel Home	Help protect your PC with Windows P Windows Firewall can help prevent hackers or m Internet or a network	irewall licious software from gaining access to your PC through the			
through Windows Firewall Change notification settings	Private networks	Connected 🔿			
Turn Windows Firewall on or off	Networks at home or work where you know and trust the people and devices on the network				
P Restore defaults	Windows Firewall state:	On			
Advanced settings Troubleshoot my network	Incoming connections:	Block all connections to apps that are not on the list of allowed apps			
	Active private networks:	🔮 takebishi.co.jp			
	Notification state:	Notify me when Windows Firewall blocks a new app			
	Guest or public networks	Not connected (

(7) Click the "Allow another app..." and add "CodeMeterRuntimeServer" from "Browse.". Allow communication through CodeMeter's firewall. Path: C:\Program Files (x86)\CodeMeter\Runtime\DeltabolinkCodeMeter.exe



(8) Set up private and public according to the network environment.

@	Allowed apps					- 🗆 ×
🛞 🍥 👻 🕆 🔗 Kontrol Panel 🔸 All Co	ontrol Panel Items > Windows Firewall > Allowed apps			~ ¢	Search Control Panel	Q
	Allow apps to communicate through Windows Firewall To add, change, or remove allowed apps and ports, click Change settings,					
	What are the risks of allowing an app to communicate?	😽 Chi	ange settings			
	Allowed apps and features:					
	Name	Private	Public ^			
	Bing Food & Drink Bing Health & Fitness	33	S S			
	□ BranchCache - Content Retrieval (Oses HTTP) □ BranchCache - Hosted Cache Client (Uses HTTPS) □ BranchCache - Hosted Cache Server (Uses HTTPS)					
	BranchCache - Peer Discovery (Uses WSD) CheckPoint.VPN					
	CodeMeter Runtime Server	V V				
	Connect to a Network Projector					
	Core Networking DeviceXPlorer OPC Server	V				
		Details	Remove			
		Allow a	nother app	1		
		ОК	Cancel]		

3.4.14.2 License activation on the host OS

Hardware key: Attach the hardware key to the host OS.

Software key: Activate the software key on the host OS, Please refer to Software key activation procedure.

3.4.14.3 License server activation on the host OS

(1) Open "CodeMeter Control Center" from the Startup menu. Make sure CmStick is listed for hardware key, or "Takebishi CmActLincense" is listed for software key. Then click "WebAdmin" to open the "CodeMeter WebAdmin" in the browser.

CodeMeter Control Center			-		×
License Events					
CmStick/C 3-4962638	Na	™=:Takebishi CmActLicense 6001 002 nal:130-1379358593			
	Versi	on: CmActLicense 3.00			
	Stat	tus: 🚭 License activated			
	License Update	Remove License			
CodeMeter service is running.				Web/	Admin

	J	C	odeMe	eter WebAd	dmin		C ^r
ashboard	Container ~	License Monitoring ~	Diagnosis ~	Configuration ~	Info		
All Contain	er (3-4962638	B)				00 =	English (US)
A	<no name=""></no>		3-	-4962638		CmStick/C	4.12
Ø	▲ Licenses	♥ CmContainer Info	👻 User Data	❤ Backup and Restore			
Anduc FOR	Wane TAKEBI	SHI CORPORATION		Unit Counter	Valid Until	License Quantity	Feature Map
2220	-			n/a	n/a	1	n/a

(2) Click "License Monitoring" on "CodeMeter WebAdmin" and confirm that "6001002-2220" license is available.

SYSTEMS	С	odeMet	ter WebAo	dmin			C.	
Dashboard Container ~	License Monitoring ~	Diagnosis v	Configuration ~	Info	0	0 .	📌 English (US)	~
Available License	'MachineName'	AYO'						
Product Code PORame TAKE	BISHI CORPORATION		🕴 Feature Map	License Quantity	-	Used 🕴	Available	
2220 -			n/a	1	3	0	1	1

(3) Move the cursor to the setting and click "Server" > "Server Access".

	CodeMeter WebAdmin					C		
Dashboard Container - License Monitoring	✓ Diagnosis ✓	Configuration ~	Inf					*
All Licenses		Basic	>		0	0	- 55	English (US)
Available Licenst MachineName'		Server	>	Server Acce	155			
		Advanced		License Acc	ess Pe	missi	ons	
A . 6001002 TAKEBISHI CORPORATION		Eeature Ma	p i	License Quantity		Use	d 0	Available
Product Code - Name								

(4) "Server Access" screen appears. Check "Enable" for "Network Server" and click "Apply".

SYSTEMS	CodeMeter WebAdmin					Co		CodeMeter WebAdmin		C⁴	
nboard Container v	License Monitoring 🗸	Diagnosis 🗸	Configuration ~	Info		*					
Server Configuration Se	rver Access				0 0	English (US)					
Server Access	cense Access Permissions										
Network Server-		(1994)									
O Disable											
Enable											
Network Port:	22350										
CmWAN Server-											
Disable											
0											

(5) Click "License Access Permission", then click "Basic" in "Mode" and "Add" in "Basic Mode Configuration".

	CodeMeter	WebAdmin	C ⁴
ishboard Container ~ 1	lcense Monitoring ~ Diagnosis ~ Co	nfiguration ~ Info	*
Server Access	e Access Permissions		U ma English (US) -
Mode Basic			
O Advanced			
CodeMeter Server is current	ly running in License Access Permission M	lode: Basic	
-Basic Mode Configu	ration		
localhost			
	dd Remove		
Enable FSB Access			
	Apply Undo Changes Re	estore Defaults	
rrent Server: localhost (1:	27.0.0.1) 🔮 🕚	WebAdmin Version: 6.90	

(6) Input the IP address assigned to the guest OS.

Basic Advanced	localhost needs some info from you	×
odeMeter Server is currently r.	Enter the Client's name or IP address	
Basic Mode Configuration	192.168.XXX.YYY	×
localhost	OK Cancel	

(7) Confirm that the IP address of the guest OS entered in "Client" of "Basic Mode Configuration" has been added, and click "Apply". (This procedure adds a PC that can access the license with the hardware key.)

SYSTEMS	CodeMeter WebAdmin	C
shboard Container - L	icense Monitoring - Diagnosis - Configuration - Info	
Server Configuration Licens	e Access Permissions	😗 😨 🛤 English (U
Server Access	e Access Permissions	
Mode		
 Basic 		
O Advanced		
192.168.XXX.WY	d. Remove	
Enable FSB Access		
Enable FSB Access	Apply Undo Changes Restore Defaults	

Important

Be sure to set the license access permission. (Guest OS IP specification) Otherwise, the license assigned to the hardware key may be used from an unintended PC on the network.

3.4.14.4 License activation on the Guest OS

On the guest OS, open the DeviceXPlorer and check the license.

If the serial number is registered correctly, the host OS key is activated and the key information is displayed. If the status is OK (KEY), the license is activated correctly.

If the key information shows "License key required", the key on the host OS is not activated correctly. In this case, check the environment again.

🔹 Untitled - DeviceXPlorer OPC Serve	er				
File Edit View Project Tools	Help				
📝 📂 💾 🔏 🖬 🗖	Manuals	• %	🎭 🗠 🌏 🗻 🎆	斄 🏀 🔤 🛠 🔅	
Project Explorer 🛛 🔻 🕈 🗙	Online Registration				
II 🖬 🖬 🖬	Send mail to Support	- C14-	Status	Serial Number	Key information
Project 'Untitled'	Connect to Product s wet	E	OK(KEY)	202108267-	3-4962734 [HWKEY]
🚊 🔎 SYSTEM [MemoryMap]	License		OK		No license key required
SYSTEM			OK		No license key required
(a) - · · · · · ·	About DeviceXPlorer		OK		No license key required
	טוויד ד	0.4.0.1	OK		No license key required
	HIDIC	6.4.0.1	OK		No license key required
	SATELLITE	6.4.0.1	OK		No license key required
	MICREX	6.4.0.1	OK		No license key required
	FP	6.4.0.1	OK		No license key required
	MP	6.4.0.1	OK		No license key required
	KV	6.4.0.1	OK		No license key required
	TOSHIBA	6.4.0.1	OK		No license key required
	AB	6.4.0.1	OK		No license key required

3.4.15 Using the Hardware Key

This section describes the procedure to use hardware key with DeviceXPlorer.

- (1) Insert the hardware key into USB port of PC where DeviceXPlorer is installed. *The Hardware Key must be inserted to PC while DeviceXPlorer is operating.
- (2) If the key information is on the license screen and the status is "OK(KEY)", the key is activated correctly.

Intitled - DeviceXPlorer OPC Server	r				
File Edit View Project Tools	Help				
i 📝 📂 💾 i 🐰 🖻 🖻	Manuals	• 36. 1	🗞 🗠 🚷 🙇 🍈	斄 🍈 орс 🚿	
Project Explorer 🚽 🔻 🗙	Online Registration				
19 🖬 16 16	Send mail to Support		Status	Serial Number	Key information
Project 'Untitled'	Connect to Product s w	E	OK(KEY)	20 6AE	3FD 3-4962734 [HWKEY]
📄 🔎 SYSTEM [MemoryMap]	License		OK		No license key required
SYSTEM			OK		No license key required
(<u></u>)	About DeviceXPlorer		OK		No license key required
	1 1 100	0.4.0.1	OK		No license key required
	HIDIC	6.4.0.1	OK		No license key required
	SATELLITE	6.4.0.1	OK		No license key required
	MICREX	6.4.0.1	OK		No license key required
	FP	6.4.0.1	OK		No license key required
	MP	6.4.0.1	OK		No license key required
	KV	6.4.0.1	OK		No license key required
	TOSHIBA	6.4.0.1	OK		No license key required
	AB	6.4.0.1	OK		No license key required

3.4.16 Using the Hardware Key in the Virtual Environment

This section describes the procedure to use a hardware key with the DeviceXPlorer in a virtual environment of a guest OS.

If the virtual environment allows the guest OS to authenticate the USB device (hardware key) of the host OS, then there is no problem. However, depending on the virtual environment, the guest OS may not be able to authenticate the USB device (hardware key) of the host OS.

In such a virtual environment, please follow the procedure below to use the hardware Key in the DeviceXPlorer of the guest OS, which is activated by the host OS.

"3.4.14.1 Set up CodeMeter Runtime on Host OS"

"3.4.14.2 License activation on the host OS"

"3.4.14.3 License server activation on the host OS"

"3.4.14.4 License activation on the Guest OS"

3.5 Library Information

By selecting "Library Information" from the pop-up menu on the list displayed in the license, you can check the library information used by each component.

ibraly Version	
File	Version
DxpMelsecBoardEngine.dll	6.0.0.1
DxpMdFuncEngine.dll	6,0,0,1
DxpMelsecEZSocketEngine.dll	6.0.0.1
DxpEZFuncEngine.dll	6.0.0.1
DxpMelsecSerialEngine.dll	6.0.0.1
DxpSerialEngine.dll	6.0.0.1
DxpMelsecEZSocketEngine.dll	6,0,0,1
DxpEZFuncEngine.dll	6,0,0,1
DxpMelsecEthernetEngine.dll	6,0,0,1
DxpEthemetEngine.dll	6.0.0.1
<	>
	Close

3.6 The Differences between each Editions

dition	Accessible models	Executable Script (Include Bridge)	OPC UAServer I/F	Modbus/TCP Server I/F
Enterprise	All models	Unlimited	Supported	Supported
Advanced	1 model	1 piece only / 1 second fixed cycle	Supported	Not Supported
Standard	1 model	1 piece only / 1 second fixed cycle	Not Supported	Not Supported

3.7 Communication Suite that can be Selected for Advanced / Standard Edition

Su	ite
Mitsubishi MELSEC iQ-R/Q/L/FX/QnA/A Series	YASKAWA Robot Controller
OMRON SYSMAC-NJ/CJ/CS/CP/CV/C Series	KEYENCE KV Series
JTEKT TOYOPUC-PC10/PC3J/PC2J Series	ROCKWELLAB Logix Series
YOKOGAWA FA-M3 Series	SIEMENS SIMATIC-S7 Series
HITACHI EH/H Series	AZBIL (YAMATAKE) CPL Protocol
SHARP SATELLITE JW Series	Modbus/TCP, Modbus/RTU, Modbus/ASCII
FUJI MICREX-SX/F Series	FANUC PMC Series
PANASONIC FP-X/FP7/FP2 Series	KAWASAKI Robot Controller
YASKAWAMP Series (MEMOBUS)	OPC DA2.05A/3.0 Client function
LSIS XGT Series	

The difference between Enterprise edition and Standard edition is listed below.

3.7.1 Selecting the Communication Suite

The procedure for selecting the communication suite in the advanced edition and standard edition is shown below.
Important

When selecting a communication suite, launch DeviceXPlorer by "run as administrator" of right click menu.

(1) After activate license for Advanced Edition or Standard Edition, if no communication suite is selected, the following dialog will be displayed. Please select the suite.

Suite settings			×
Select the	suite you wish to license.		
	Mitsubishi MELSEC 🗸 🗸 🗸		
<u>.</u>	Mitsubishi MELSEC		
	Omron SYSMAC Jtekt TOYOPUC	Cancel	
ge in a startum	Yokogawa FA-M3 Hitachi HIDIC		-
go ma startop	Sharp SATELLITE		
	Fuji MICREX		
	Panasonic FP		
	Keyence KV		
Mes	Rockwell AB		
	L sis XGT		
	azbil (Yamatake) CPL		
	MODBUS Communication Device		
	Fanuc CNC Kawasaki Robot Controllor		
	NAWASANI NUUUL CUTITUIIEI		

(2) Click "Yes"



Note

Communication suite will be valid after restart DeviceXPlorer.

3.7.2 Changing the Communication Suite from license menu.

The procedure for selecting the communication suite in the advanced edition and standard edition from license menu is shown below.

Important

When selecting a communication suite, launch DeviceXPlorer by "run as administrator" of right click menu.

(1) Select "License" of "Help" menu.

Tuntitied - DeviceXPlorer OPC Server							- (X
File Edit View Project Tools H	felp							
2010	11 🔍 🔮 ⋟	Q 20 8 8 9	> 🌒 🗻 😭 🖉	🔅 🔅 OPC 🐇 🗾				
	Start Page License	×				4 Þ	Property	
	Component	Version	Status	Serial Number	Key information	^	1.000	
Deniant 'Heritlan'	PLATFORM	ADVANCED	OK(KEY)	123456789-12345678	3-4962638 [HWKEY]		22 24	2 12
O UN SYSTEM	MELSEC	6.0.0.1	OK(KEY)					
SVSTEM [Mamore Man]	SYSMAC	6.0.0.1	DEMO					
CTOTEM (Metholymop)	TOYOPUC	6.0.0.1	DEMO					
	FAM3	6.0.0.1	DEMO					
	HIDIC	6.0.0.1	DEMO					
	SATELLITE	6.0.0.1	DEMO					
	MICREX	6.0.0.1	DEMO					
	FP	6.0.0.1	DEMO					
	MP	6.0.0.1	DEMO					
	KV	6.0.0,1	DEMO					
	TOSHIBA	6.0.0.1	DEMO					
	AB	6.0.0.1	DEMO					
	SIMATIC	6.0.0.1	DEMO					
	LSIS	6.0.0.1	DEMO			~		
Project E. Structur.						>		
Message	200 - S							+ 8 x
💼 🖗 શ 🔬 📾 🖉 🍸								
L. No Date Time	Туре	Message						
eady				Administrato	r t ♥ MonitorStop [Decimal]		Disconn	ected

(2) Move the cursor to the component to be changed, and right-click and click "Select Suite

Tuntitled - DeviceXPlorer OPC Serve	er					- 0	х
File Edit View Project Tools	Help						
IX 📂 🖪 I & Ib F	11 🔍 😵 ⋟	9 20 30 9> 9	> 🕄 🔺 😜 (🖉 🛠 👓			
Project Explorer 🛛 👻 🤅	Start Page License	x				d 👂 Property 🛩	
	Component	Version	Status	Serial Number	Key information	^	,
Project 'Untitled'	PLATFORM MELSEC	ADVANCED 6.0.0.1	OK(KEY) OK(KEY)	123456789-12345678	3-4952538 (HWKEY)	21 21 2	Ba
SYSTEM (MemoryMap)	SYSMAC	8.0.0.1	DEMO		divide.		
	TOYOPUC	6.0.0.1	DEMO	License A	civate		
	FAM3	6.0.0.1	DEMO	Library Ve	ersion		
	CATELLITE	6001	DEMO				
	MODEV	5001	DEMO	Suite sele	ection		
	EP	6001	DEMO				
	MP	6001	DEMO				
	KV.	6001	DEMO				
	TOSHIBA	6001	DEMO				
	AR	6881	DEMO				
	SIMATIC	6001	DEMO				
	LSIS	6001	DEMO			~	
🕈 Project E 🔏 Diagnos 🗇 Structu	st					>	
💿 🖗 🜒 🔝 🖘 🖉 💙 👘							
L No Date Time	Туре	Message					
Message 😗 Monitor(1)							
elect the suite you wish to license.				a Administrator	t @ MonitorStop [Decimal]	Disconnected	

(3) Click "Yes".



Communication suite will be valid after restart DeviceXPlorer.

3.8 Demo edition

If install DeviceXPlorer as demo edition, input a hyphen symbol "-" in Serial Number when installing. There is not the functional limit in demo edition. But demo edition runs for only one hour.



3.9 Notes on the usage by the non-administrator rights

The user cannot run the following operations, if user of the non-administrator rights uses DeviceXPlorer. So, please be careful.

- Install / Uninstall
- Register as service program / Unregister from service program
- License Activation, Change, Clear, Transport
- Selection of communication model

[Limitation]

UAC	How to perform operation mentioned above
UAC ON	Please run by administrator.
UAC OFF	Please run by user account which has administrator rights.

3.10 Notes at 64-bit application

3.10.1 Notes on using the OPC Classic (OPC DA / OPC AE) server function

When the 64-bit DeviceXPlorer is used, to enumerate some OPC Server's from a 64-bit OPC Client application, it is necessary to enumerate using OpcEnum of the 64-bit application.

If OpcEnum registered as a service is "C:¥Windows¥SysWOW64¥OpcEnum.exe", it is necessary to carry out service registration of the "C:¥Windows¥System32¥OpcEnum.exe."

Please execute "Reg_OPCEnum32to64.Bat" in installation path as "Run as administrator".

3.10.2 Unsupported connections in 64-bit application

Some communication models are not supported in the 64-bit application.

- MELSEC EZSocket / GOT connection
- SYSMAC FinsGateway / SysmacGateway /CX-Compolet connection
- TOYOPUC CPU port connection
- FANUC FOCAS connection
- YASKAWA robot connection
- Mitsubishi CNC EZSocketNc connection

3.11 Note at connecting with GENESIS 64 / MC Works64 via OPC DA interface

When connecting using the OPC DA interface from an application that starts as a service such as GENESIS64 / MC Works64, it is necessary to set the DCOM settings appropriately in advance. A setting example is shown below. Please refer to 5.22 for details on DCOM settings.

(1) [Start DCOM Configuration Utility]

From the Start menu, select "Run" and enter "DCOMCNFG.EXE" to launch the DCOM configuration utility.

(2) [Specific Properties (General)]

Right mouse click on "DeviceXPlorer OPC Server 6" from "DCOM Config" under "My Computer", and select Properties from the pop-up menu.



(3) [Specific Properties (ID/Identity)]

Select the "ID" tab, and specify "The interactive user" and apply setting.

DeviceXP	lorer OPC	Server 6 P	roperties			?	×		
General	Location	Security	Endpoints	Identity					
Which user account do you want to use to run this application?									
()[The interactive user]									
OThe	launching u	ser.							
⊖ This	<u>u</u> ser.								
Us <u>e</u> r:						Browse.			
Pass	word:								
Co <u>n</u> fi	rm passwore	d:							
○ The	system acc	ount (servi	ces only).						
Learn more about <u>setting these properties</u> .									
		[ОК	Ca	ncel	Ap	plγ		

(4) Restart the PC

By restarting the PC, the application started as a service will be able to connect to DeviceXPlorer OPC Server via the OPC DA interface.

4 General Performance Specifications

4.1 Specifications Table

Item			Description				
Ser	vice Activation		Possible				
Lar	nguage		Japanese, English,	Japanese, English, Simplified Chinese, Traditional Chinese, Korean			
Ma	x. ports/PLCs		255				
Sup	ported protocol	ls	OPC-DA, OPC A&E, OPC UA, SuiteLink, DxpLink				
Acc	essible devices		Refer to User's Guide (PLC Communication Edition).				
Spe	Specification of different item (tag) names		Possible				
OP	С	OPC Item ID	Use delimiters to s	pecify device, group and tag names.			
		Version	2.05A/3.0				
	0000	Prog.ID	Takebishi.Dxp.6				
	OPC DA	CLASS ID	8D8CD4DC-1EA6-45bf-9AAE-A69D53A50006				
		OPC Access Path	Possible				
		Version	1.10				
	OPCA&E	Prog.ID	Takebishi.DxpAe.6				
		CLASS ID	8D8CD4DC-1EA6	-45bf-9AAE-A69D53A50206			
		URI	opc.tcp://machinenar	ne]:52240			
	OPC UA	Protocol	TCP. OPC UA Pub/	Sub(UADP)			
		Application Name	Any (default: "DXF	PV6")			
Sui	teLink	Topic name	Any (default: "Devi	ice name")			
DynLink Port no		Any (default: 9980)					
2.1		1 010110	VT BOOL	Logical values			
			VT I1	8-bit signed integers			
			VT III1	8-bit unsigned integers			
			VT I2	16-bit signed integers			
			VT III2	16-bit unsigned integers			
			VT I4	32-bit signed integers			
Dat	a type		VT III4	32-bit unsigned integers			
Du	a type		VT R4	32-bit real number			
			VT 18	64-bit signed integers			
			VT III8	64-bit unsigned integers			
			VT R8	64-bit real number			
			VT BSTR	Character string			
			VT ARRAY	Array			
			Word device bit pos	sition specification			
			16-bit signed integ	ars			
			16-bit unsigned int	2020			
			32-bit signed integ	are			
			32-bit unsigned int	2022			
			64-bit signed integ	are			
Fvt	and od format		64-bit unsigned int	cro corore			
Extended format			64-bit unsigned integers				
			Single procision fle	ating point			
			Double precision floating point				
			Double precision floating point				
			Character string				
			Text format binary	Text format binary			
			Text format octal				

Text format decimal					
Text format hexadecimal					
Bit inverse					
Boolean conversion					
Batch File Write					
Array					
Read-only					
Write-only					

4.2 **OPC DA Interfaces**

4.2.1 Prog.ID

The Prog.ID for DeviceXPlorer is "Takebishi.Dxp.6" or "Takebishi.Dxp".

4.2.2 Item ID

Specify the OPC Item ID as the device name, group name(Structure Tag name), and tag name set in DeviceXPlorer, separated by periods (.).

To access "Tag1" in the figure below, specify "Device1.Tag" as the item ID.

Project Explorer 🔷 🔻 🛪	Tag List : Device1 🗙		
	😨 🍙 🔎 🛐 Device 1		
📑 Project 'Untitled'	Name	Data Type	Location
📄 🗐 SYSTEM	- Tag001	Short	D0
SYSTEM [MemoryMap]	-🕰 Tag002	Short	D1
🗎 🖃 Device1 [Mitsubishi MELSE0			
Device1Port [Ethernet]			

If there is a group attribution, specify the group name in between the device name and the tag name. To access "Tag001" in the figure below, specify "Device1.Group1.Tag001" as the item ID.

Project Explorer 🛛 🔻 🕈 🗙	Tag List : Group1 🗙	
🗐 🖾 🖷 🖷	😨 💣 🔎 🗿 Device 1.Group 1	
🔢 Project 'Untitled'	Name	Data Type Location
🖕 🗐 SYSTEM	- Tag001	Short D0
SYSTEM [MemoryMap]	- Tag002	Short D1
🖻 🖳 Device1 [Mitsubishi MELSEC		
Device1Port [Ethernet]		
Group I		

Note							
The item ID for DeviceXPlorer does not include the port name.							
The port view appears as shown below, but the item ID is "Device1 Tag2".							
1 11	,			-			
Project Explorer 🛛 👻 🕈 🗙	Tag List : Device1 🗙						
II 🔽 🖬 🍒	😨 💋 🔎 🗿 Dev	vice1	-				
🔊 Project 'Untitled'	Name	Data Type	Location				
🖨 🔎 SYSTEM [MemoryMap]	-🔂 Tag001	Short	D0				
SYSTEM	-🖾 Tag002	Short	D1				
Device 1Port [Ethernet]							
II II							

4.2.3 Access Path

If you specify an access path, you can omit the device name and group name from the item ID. For example, to access "Tag1" of "Device1", you would normally need to specify "Device1.Tag1", but if you specify "Device1" as the access path, the item ID becomes "Tag1". By specifying an access path, you can specify simpler item IDs, which makes it possible for clients to manage separate tags for separate device names.

Add Item				×
Access Path	Device 1			
Browse Items ☐- Root ☐- Device1 ↓ ⊕- Group ⊕- SYSTEM	1	Server Tags Tag001 Tag002		
Tag001 Added Items List				Add >>
			ОК	Cancel

4.2.4 OPC Custom Interfaces

The support statuses of OPC DA custom interfaces are as shown below. The tables should be interpreted as follows:

Interface name	OPC DA interface name
DA2	The OPC DA2.05A interface is shown as "o".
DA3	The OPC DA3.0 interface is shown as "o".
Opt	The optional interface is shown as "o".
Member function	Name of the member function in that interface
Support status	OK: Supported, N/A: Not supported

[OPC Server Object]

These are the main objects that expose the OPC server.

Interface name	DA2	DA3	Opt	Member function	Support status
				SetLocaleID	OK
IODOC comment		0		GetLocaleID	OK
IOPOCommon Shaved interface	0			QueryAvailableLocalIDs	OK
Shared interface				GetErrorString	OK
				SetClientName	OK
		0		AddGroup	OK
				GetErrorString	OK
IOPCServer	0			GetGroupByName	OK
Main interface	0			GetStatus	OK
				RemoveGroup	OK
				CreateGroupEnumerator	OK
IConnectionPointContainer	0	0		EnumConnectionPoints	OK

Interface for accessing the connection points for IOPCShutdown				FindConnectionPoints	OK
				QueryAvailableProperties	OK
IOPCItemProperties	0	0		GetItemProperties	OK
Interface for browsing the available item properties				LookutItemIDs	OK
				QueryOrganization	OK
				ChangeBrowsePosition	OK
IOPCBrowseServerAddressSpace	0	0	0	BrowseOPCItemIDs	OK
Interface for browsing the available item IDs				GetItemID	OK
				BrowseAccessPaths	N/A*1
IOPCServerPublicGroups	0	0	0	GetPublicGroupByName	N/A
Interface for managing public groups	0	0	0	RemovePublicGroup	N/A
				IsDirty	N/A
IPersistFile				Load	N/A
Interface for storing and reading files of OPC server	0	0	0	Save	N/A
configuration information				SaveCompleted	N/A
				GetCurFile	N/A
IOPCBrowse				GetProperties	OK
Interface for browsing the address space and		0		Browso	OK
obtaining item properties				Diowse	
IOPCItemIO				Read	OK
Interface for directly obtaining an item value without creating a group		0		WriteVQT	OK

*1 E_NOTIMP will be returned.

[OPCGroup Object]

These objects allow the OPC server to manage the item collection.

Interface name	DA2	DA3	Opt	Member function	Support status
				GetState	OK
IOPCGroupStateMgt				SetState	OK
Interface that manages the status of the whole	0	0		SetName	OK
group				CloneGroup	OK
IOPCPublicGroupStateMgt	0	0	0	GetState	N/A
Interface for changing to a public group	0	0	0	MoveToPublic	N/A
IOPCGroupStateMgt2		0		SetKeepAlive	OK
Interface for setting and running KeepAlive		0		GetKeepAlive	OK
				AddItems	OK
				ValidateItems	OK
IOPCItemMgt				RemoveItems	OK
Interface that controls the operation of items in the	0	0		SetActiveState	OK
group				SetClientHandles	OK
				SetDatatypes	OK
				CreateEnumerator	OK
IOPCSyncIO	0	0		Read	OK
Interface for synchronous reading / writing	0	0		Write	OK
IOPCSyncIO2				ReadMaxAge	OK
Interface for synchronous reading using MaxAge /		0		WriteVOT	OK
writing to the quality flag or time stamp				writevąi	UN
IOPCAsyncIO	0	0		Read	OK
Interface for asynchronous access	0	0		Write	OK

				Refresh	OK
				Cancel	OK
				Read	OK
				Write	OK
IOPCASyncIO2				Refresh	OK
Interface for asynchronous access	0	0		Cancel2	OK
				SetEnable	OK
				GetEnable	OK
				ReadMaxAge	OK
IDPUASynciO3		0		WriteVQT	OK
Interface for asynchronous access (using MaxAge)				Refresh2	OK
IConnectionPointContainer					
Interface for accessing the connection points for	0	0		EnumConnectionPoints	OK
IOPCShutdown					
MataObject				DAdvise	OK
Interface to run on an OPC group	0	0		DUnadvise	OK
				FindConnectionPoint	OK
IODCIterry Dec allocated Mart				SetItemDeadband	OK
Interface for gravit in the dead hand of an item		0		GetItemDeadband	OK
Interface for specifying the dead band of an item				ClearItemDeadband	OK
				SetItemSamplingRate	OK
IOPCItemSamplingMgt				GetItemSamplingRate	OK
Interface for specifying the sampling interval for		0	0	ClearItemSamplingRate	OK
each item				SetItemBufferEnable	OK
				GetItemBufferEnable	OK

[EnumOPCItem Attributes Object]

Interface name	DA2	DA3	Opt	Member function	Support status
				Next	OK
IEnumOPCItemAttributes	0	0		Skip	OK
Searches the group items and attributes				Reset	OK
				Clone	OK

4.2.5 **OPC Automation Interface**

The automation interface is a wrapper interface for the purpose of using custom interfaces from interpreter languages such as VB and VBA. It offers the same interface functions as the custom interface. For details, see the OPC DA Automation Interface Specification (issued by the OPC Foundation).



4.2.6 Quality flag

The quality flags returned by DeviceXPlorer to the client are as follows. For details of each quality flag, see the OPC Data Access specification that comes with DeviceXPlorer.

Quality flag	Value	Description
OPC_QUALITY_BAD	0x00	NG
OPC_QUALITY_UNCERTAIN	0x40	Value undefined
OPC_QUALITY_GOOD	0xC0	OK
OPC_QUALITY_CONFIG_ERROR	0x04	Configuration error
OPC_QUALITY_NOT_CONNECTED	0x08	Not connected
OPC_QUALITY_DEVICE_FAILURE	0x0C	Device failure
OPC_QUALITY_SENSOR_FAILURE	0x10	Sensor failure
OPC_QUALITY_LAST_KNOWN	0x14	Due to a communication error, the last correctly
		read value is used
OPC_QUALITY_COMM_FAILURE	0x18	Communication error
OPC_QUALITY_OUT_OF_SERVICE	0x1C	Out of service (invalid item)
OPC_QUALITY_WAITING_FOR_INITIAL_DATA	0x20	Waiting for initial data
OPC_QUALITY_LAST_USABLE	0x44	Last usable value
OPC_QUALITY_SENSOR_CAL	0x50	Sensor being calibrated
OPC_QUALITY_EGU_EXCEEDED	0x54	Engineering value conversion result exceeded
		range
OPC_QUALITY_SUB_NORMAL	0x58	Few data sources
OPC_QUALITY_LOCAL_OVERRIDE	0xD8	Value forcibly overwritten

4.2.7 Error code

When accessing an OPC interface, DeviceXPlorer may return a COM error or an OPC error. These errors are explained in the table below.

Note

If you are using Visual Basic, the occurrence of a COM error or an OPC error is an exception. By trapping the exception, you can check the error code.

[COM Errors]

COM error	Value	Description
E_FAIL	0x80004005	Processing failed (this error is returned when write
		processing failed due to a communication problem)
E_INVALIDARG	0x80070057	Invalid argument
E_NOINTERFACE	0x80004002	The interface does not exist
E_NOTIMPL	0x80004001	The interface was not implemented
E_OUTOFMEMORY	0x8007000E	Insufficient memory
CONNECT_E_ADVISELIMIT	0x80040201	The maximum number of connection points is already
		reached, and no more can be accepted (this error is
		returned when asynchronous writing is continuously
		implemented while a communication error is occurring)
OLE_E_NOCONNECTION	0x80040004	The communication point does not exist
DV_E_FORMATETC	0x80040064	The format specified in FORMATETC is invalid

[OPC Errors]

OPC error	Value	Description
OPC_E_INVALIDHANDLE	0xC0040001	Invalid handle
OPC_E_BADTYPE	0xC0040004	Cannot convert to the specified data type
OPC_E_PUBLIC	0xC0040005	Cannot implement for public group
OPC_E_BADRIGHTS	0xC0040006	Operation denied due to the item's access rights (attempted to write to a ReadOnly file)
OPC_E_UNKNOWNITEMID	0xC0040007	The item ID does not exist (unregistered tag requested of OPC server)
OPC_E_INVALIDITEMID	0xC0040008	Invalid item ID (item ID not specified)
OPC_E_INVALIDFILTER	0xC0040009	Invalid filter string
OPC_E_UNKNOWNPATH	0xC004000A	Cannot recognize access path
OPC_E_RANGE	0xC004000B	Value out of range
OPC_E_DUPLICATENAME	0xC004000C	Duplicate name
OPC_S_UNSUPPORTEDRATE	0x0004000D	Server does not support the requested rate
OPC_S_CLAMP	0x0004000E	The written value was clamped
OPC_S_INUSE	0x0004000F	Cannot continue operation because the object is in use
OPC_S_UD_COMM_ERROR	0x00048000	Function is succeeded. But quality has problem.
OPC_E_UD_COMM_ERROR	0x80048000	Communication is failure.
OPC_E_INVALIDCONFIGFILE	0xC0040010	Invalid file format set for server
OPC_E_NOTFOUND	0xC0040011	Requested object not found
OPC_E_INVALID_PID	0xC0040203	Invalid property ID
OPC_E_DEADBANDNOTSET	0xC0040400	No dead band set for the item
OPC_E_DEADBANDNOTSUPPORTED	0xC0040401	The item does not support a dead band
OPC_E_NOBUFFERING	0xC0040402	A sampling buffer is not supported
OPC_E_INVALIDCONTINUATIONPOINT	0xC0040403	The continuation point for the Browse interface is invalid
OPC_S_DATAQUEUEOVERFLOW	0xC0040404	The server's sampling buffer overflowed
OPC_E_RATENOTSET	0xC0040405	No sampling rate was set
OPC_E_NOTSUPPORTED	0xC0040406	Writing quality flags and time stamps not supported
4.3 **OPCA&E Interface**

DeviceXPlorer supports OPC A&E1.10.

4.3.1 Prog.ID

The Prog.ID for DeviceXPlorer is "Takebishi.DxpAe.6" or "Takebishi.Dxp.Ae".

4.3.2 ItemID

OPC ItemID is the same as that of the view of an OPC DA interface. Please refer to 4.2.2 for details.

Untitled.dxp - DeviceXPlorer OPC Server	*					
File Edit View Project Tools He	lp					
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1) 📃 💽 🎾 😫	j 🗞 🍫 🐳 🏈	🚣 🍈 🖉	🛊 🥳 орс 🦿	%	
Project Explorer 🛛 🔻 🕈 🗙	Tag List : Device1 🗙 Structure :	Template01				4 Þ
II 🛛 🖬 🖬	😨 💋 🔎 🛐 Device1				✓ Mel	lsecEthernet
Project 'Untitled'	Name	Data Type	Location	Value	Quality	Processing
📄 🖳 🖳 SYSTEM	- ChangeRateAlarm	Short	D1	0.010000	Good (C0h)	Custom/Alarm
SYSTEM [MemoryMap]	- DevAlarmTag	Short	D2	0.020000	Good (C0h)	Custom/Alarm
E-W Device1 [Mitsubishi MELSEC]	- DiscreateAlarmTag	Bool	MO	On	Good (C0h)	Alarm
Device (Port [Ethernet]	- LevelAlarmTag	Short	Do	0.010000	Good (C0h)	Custom/Alarm

In an OPCA&E client, it looks as follows.



Important In order to treat as an alarm tag, it is necessary to configure an alarm tag property appropriately. Please refer to 5.7.7 for an alarm configuration.

4.3.3 Custom Interfaces

Object	Interface name	Opt	Member function	Suppor t status
			SetLocaleID	OK
			GetLocaleID	OK
	IOPCCommon		QueryAvailableLocalIDs	OK
			GetErrorString	OK
			SetClientName	OK
			GetStatus	OK
			CreateEventSubscription	OK
			QueryAvailableFilters	OK
			QueryEventCategories	OK
			QueryConditionNames	OK
			QuerySubConditionNames	OK
			QuerySourceConditions	OK
	IODOF (C		QueryEventAttributes	OK
	IOPCEventServer		TranslateToItemIDs	OK
OPCEventServer Object			GetConditionState	OK
			EnableConditionByArea	OK
			EnableConditionBySource	OK
			DisableConditionByArea	OK
			DisableConditionBySource	OK
			AckCondition	OK
			CreateAreaBrowser	OK
			EnableConditionByArea2	N/A*1
			EnableConditionBySource2	N/A*1
	IODOF-martCommerce		DisableConditionByArea2	N/A*1
	IOPCE ventServer2	0	DisableConditionBySource2	N/A*1
			GetEnableStateByArea	N/A*1
			GetEnableStateBySource	N/A*1
	ICompaction Deint Containen		EnumConnectionPoints	OK
	IConnectionPointContainer		FindConnectionPoint	OK
			ChangeBrowsePosition	OK
ODCEssort Asso Descreto Obio et	IODOE-met Arma Decomposed	-	BrowseOPCAreas	OK
OF CEVENIAI eadrowser Object	IOFCEVentAreabrowser	0	GetQualifiedAreaName	OK
			GetQualifiedSourceName	OK
			SetFilter	OK
			GetFilter	OK
			SelectReturnedAttributes	OK
	IOPOF ront Subscription Mat		GetReturnedAttributes	OK
ODOF	IOF OrventSubscriptionivigt		Refresh	OK
OF OEvent Subscription Object			CancelRefresh	OK

The support statuses of OPCAE custom interfaces are as shown below.

*1 E_NOTIMP will be returned.

IConnectionPointContainer

GetState

SetState

EnumConnectionPoints

FindConnectionPoint

OK

OK

OK

OK

4.4 **OPC UA Interface**

DeviceXPlorer supports OPC UA.

4.4.1 Specifications Table

The specification table of OPC UA is shown below.. Endpoint URL, security policy, and security mode settings It can be changed on the common property(Tool menu "Option").

Version	1.04
Туре	Server
Endpoint URL	opc.tcp://[IP address or machine name]:52240
Profile	Standard UA Server Profile
Security Policy	None, Basic128Rsa15, Basic256, Basic256Sha256, Aes128Sha256RsaOaep, Aes256Sha256RsaPss
Security Mode	None, Sign, SignAndEncrypt
User Authentication	Anonymous, User Name/Password, X509 User Certificate
Product URI	urn:Takebishi:DeviceXPlorerOPCServer
Encoding	Binary
Maximum Session Count	50
Maximum Session Count /Client	50
Maximum Subscription Count / Session	Unlimited
MonitoredItem / Subscription	Unlimited
Minimum Sampling Interval	50ms
Minimum Publish Interval	100ms
IndexRange	Not Support
OPC UA Pub/Sub	-
Transport Profile	http://opcfoundation.org/UA-Profile/Transport/pubsub-udp-uadp
Minimum Publish Interval	
	oUms

*User authentication settings can be set from User Management.

* Please contact us if you wish to use OPC UA Publisher.

4.4.2 Service

The support statuses of OPC UA Service are as shown below.

		Function	G
Service Set	Service	(Our	Suppor
		classification)	t status
	FindServers	Enum	×
Discoverty Service Set	GetEndpoints	Core	0
	RegisterServer	Enum	×
Some Oboursel Constant Set	OpenSecureChannel	Core	0
Secure Channel Service Set	CloseSecureChannel	Core	0
	CreateSession	Core	0
Section Corrigo Set	ActivateSession	Core	0
Session Service Set	CloseSession	Core	0
	Cancel	Core	0
	AddNodes	NodeManager	×
Node Management Samia Sat	AddReferences	NodeManager	×
Nodemanagement Service Set	DeleteNodes	NodeManager	×
	DeleteReferences	NodeManager	×
	Browse	Browse	0
	BrowseNext	Browse	0
View Service Set	TranslateBrowsePathToNodeIds	Browse	0
	RegisterNodes	View	×
	UnregisterNodes	View	×
Quarter Section Set	QueryFirst	Query	×
Query Service Set	QueryNext	Query	×
	Read	DA	0
Att into Source Set	HistoryRead	Historical	×
Authoute Service Set	Write	DA	0
	HistoryUpdate	Historical	×
Method Service Set	Call	Method	0
	CreateMonitoredItems	DA	0
	ModifyMonitoredItems	DA	0
MonitoredItem Service Set	SetMonitoringMode	DA	×
	SetTriggering	DA	0
	DeleteMonitoredItems	DA	0
	CreateSubscription	DA/A&C	0
	ModifySubscription	DA/A&C	0
	SetPulishingMode	DA/A&C	0
Subscription Service Set	Publish	DA/A&C	0
	Republish	DA/A&C	0
	TransferSubscriptions	DA/A&C	×
	DeleteSubscriptions	DA/A&C	0

4.5 SuiteLink Interfaces

DeviceXPlorer supports SuiteLink interface of wonderware.

Important

Tags of LONGLONG and ULONGLONG are not supported for SuiteLink interface.

4.5.1 Application Name

The application name for DeviceXPlorer is "DXPV6". The application name can be changed on the Common Properties screen (Tools -> Options)

Start as Service Program	Execute as Normal Application	^	1
Namespace Delimiter			Cancel
Extend Tag Delimiter	:		• •
Language	English		Apply
Automatic Login User	Administrator		
Running Processor Setting	None		
OPC			
Update Rate (msec)	500		
Timer Tick for Async Update Mode (msec)	10		
Return cache in error	Enable		
Return success for communication failure at	Disabled		
Initial DataChange Timeout	15000		
OPC UA Server Setting	Enable		
OPC UA Client Setting	C:¥ProgramData¥TAKEBISHI¥DeviceXPlorer		
OPC UA publisher settings	Enable		
SuiteLink			
SuiteLink Application Name	DXPV6		
Nofity Cache First	Disabled		
DxpLink			
DxpLink Sever Function	Enable		
DxpLink Port No	9980		

Item	Description
SuiteLink	Specify SuiteLink Server name. Default is "DXPV6".
Application Name	
Notify Cache first	Send cache value of tag at first notification immediately when SuiteLink clients connect the server. You can avoid SuiteLink timeout on SuiteLink client.

4.5.2 Topic Names and Item Names

DeviceXPlorer allows you to set a topic name for each device.

The default topic name is "Device name" and the default item name is "Tag name".

To access "Tag1" in the figure below, specify "Device1" as the topic name and "Tag1" as the item name.

Project Explorer 🔷 🔻 🗙	Tag List : Device1 🗙		
📰 🖬 🍯	😨 💣 🔎 🛐 Devic	e1	
🔢 Project 'Untitled'	Name	Data Type	Location
🖕 🗐 SYSTEM	🖧 Tag1	Short	D0
SYSTEM [MemoryMap]			
🖻 🕼 Device 1 [Mitsubishi MELSEC			
Device1Port [Ethernet]			

You can specify a topic name and update interval for each device on the "Device Options Screen".

Communication Setting Update Rate 1000 msec 	Simulation Signal ● Sine ● Ramp ● Random ● Shared Memory
Redundant Communication Standby device Standby type Cold	SuiteLink(D) Application Name DXPV6 Topic Name Device1
Switching Type Auto Return to primay automatically	Other

Item	Description
SuiteLink	Place a check in this box to enable the SuiteLink interface.
Application Name	Shows the currently set SuiteLink application name. This property can be changed only in Common Properties (Tools -> Options).
Topic Name	Allows you to set a topic name of your choice for each device.
Update Rate	Allows you to set the interval for communication with the PLC.

4.6 **DxpLink Interface**

DeviceXPlorer corresponds to the DxpLink interface (HTTP communication) which is an original interface of our company.

4.6.1 DxpLink Server Settings

DxpLink Server function can be changed on Common Properties screen (menu Tools -> Options).

Start as Service Program	Execute as Normal Application			UK
Namespace Delimiter			<u> </u>	Cance
Extend Tag Delimiter	:			
Language	English			Apply
Automatic Login User	Administrator			
Running Processor Setting	None			
OPC				
Update Rate (msec)	500			
Timer Tick for Async Update Mode (msec)	10	_		
Return cache in error	Enable			
Return success for communication failure at .	. Disabled			
Initial DataChange Timeout	15000			
OPC UA Server Setting	Enable			
OPC UA Client Setting	C:¥ProgramData¥TAKEBISHI¥DeviceXPlorer			
OPC UA publisher settings	Disable			
SuiteLink				
SuiteLink Application Name	DXPSV6			
Nofity Cache First	Enabled			
DxpLink				
DxpLink Sever Function	Enable	-		
DxpLink Port No	9980			

Item	Description
DxpLink Server Function	Place a check in this box to enable the DxpLink Server function.
Port No	Specify the port No of DxpLink Serer.

4.6.2 DxpLink Communication Settings

DxpLink communicates per Device. Enable / Disable of DxpLink function can be specified on "Device Options".

evice Option Publisher		OK
Communication Setting	Simulation Signal	Cance
<u>Eix Update rate</u>	Sine	Apply
Maxage 0 msec	Ramp	
Skip communication after retry	Shared Memory	
Slow polling mode	☑ D <u>x</u> pLink	
Slow Interval 10000 msec	Communication Term 1 min	

Item	Description				
Server Function	Place a check in this box to enable the DxpLink Interface.				
Communication Term	Specify the communication term(min) which is communication time after DxpLink client requests.				
Update Rate	Allows you to set the interval for communication with the PLC.				

4.6.3 DxpLink Communication

DeviceXPlorer has DxpLink Server function and DxpLink Client function.

DxpLink is HTTP communications protocol of our original.

The environment where DCOM connection is difficult, when the communication interface by the side of PLC is restricted, PLC data can be seamlessly accessed by using a DxpLink function.



4.6.4 DxpLink Protocol Specification

The DxpLink communication is realized by exchanging XML documents by POST command of HTTP from the client.

Contents	Contents
HTTP Version	1.1
Maximum Clients	64
Request Method	POST
Message Body	XML Document (XML1.0)

The XML document for request from DxpLink client and response from DeviceXPlorer is based on the following commands.

4.6.4.1 Enumerate Device (GetDevice)

Request
Example
xml version="1.0" encoding="UTF-8"?
<transportation command="GetDevice"></transportation>

Nar	ne	Kind	Туре	Contents
Trar	nsportation			
	Command	Attribute	String	Fixed "GetDevice"

Response

Example

1 ransportation					

Name		Kind	Туре	Contents
Transportation				
	Command	Attribute	String	Fixed "GetDevice"
	ErrorCode	Attribute	32bit Unsinged Int	
	Delimiter	Element	Delimiter	Refer to type of "Delimiter"
	Device	Element	Device	Refer to type of "Device"
				Enumerated the number of tags in the target
				path.

Nan	ne	Kind	Туре	Contents
Delin	miter			
	Extend	Attribute	Character	Extend Item Name Delimiter
	Namespace	Attribute	Character	Namespace Delimiter

Name		Kind	Туре	Contents
Device				
	Name	Attribute	String	Device Name
	Туре	Attribute	String	The kind of Device (Component name)

4.6.4.2 Enumerate Tag (GetTags)

Request

Example

<?xml version="1.0" encoding="UTF-8"?> <Transportation Command="GetTags"> <TargetPath Name="Device1"/>

</Transportation>

Nar	ne	Kind	Туре	Contents
Tran	nsportation			
	Command	Attribute	String	Fixed "GetTags"
	TargetPath	Element	TargetPath	Refer to type of "TargetPath"

Nan	ne	Kind	Туре	Contents
Targ	etPath			
	Name	Attribute	String	The target path of device of group to enumerate
				tag.
				eg "Deviœ1Group1"

Response

Example <?xml version="1.0" encoding="UTF-8"?> <Transportation Command="GetTags" ErrorCode="0"> <Delimiter Extend="." Namespace="."/> <TargetPath Name="Device1"> <TargetPath Name="Device1"> <TargetPath Name="Tag1" Size="1" Type="SHORT"/> <Tag Name="Tag2" Size="1" Type="SHORT"/> <Tag Name="Tag3" Size="6" Type="SHORT | ARRAY"/> </TargetPath> </Transportation>

Nan	ne	Kind	Туре	Contents
Tran	sportation			
	Command	Attribute	String	Fixed "GetTags"
	ErrorCode	Attribute	32bit Unsinged	
			Int	
	Delimiter	Element	Delimiter	Refer to type of "Delimiter"
	TargetPath	Element	TargetPath	Enumerated the number of tags in the target
				path.

Nan	ne	Kind	Туре	Contents
Delin	miter			
	Extend	Attribute	Character	Extend Item Name Delimiter
	Namespace	Attribute	Character	Namespace Delimiter

Name		Kind	Туре	Contents
TargetPath				
	Name	Attribute	String	Device Name
	Tag	Element	Tag	Refer to type of "Tag"
				Enumerated tags in the target path.

Nan	ne	Kind	Туре	Contents
Tag				
	Name	Attribute	String	Tag Name
	Size	Attribute	32bit Unsinged	The number of element of array.
			Int	"1" is returned when the tag is not array.
	Type	Attribute	String	The datatype string of tag.
				Refer to "The datatype string of tag."

4.6.4.3 Read Value of Tag (GetTagsValue)

Request

Example
xml version="1.0" encoding="utf-8"?
<transportation command="GetTagValues"></transportation>
<targetpath name="Device1"></targetpath>
<tag name="Short"></tag>
<tag name="String"></tag>
<tag name="ShortArray"></tag>

Name		Kind	Туре	Contents
Tran	nsportation			
	Command	Attribute	String	Fixed "GetTagValues"
	TargetPath	Element	TargetPath	Refer to type of "TargetPath"

Name		Kind	Туре	Contents
Targ	etPath			
	Name	Attribute	String	The target path of device of group to enumerate
				tag.
				eg "DeviœlGroup1"
	Tag	Element	Tag	Refer to type of "Tag"
				Specify tags you want to read.

Response

Example
xml version="1.0" encoding="UTF-8"?
<transportation command="GetTagValues" errorcode="0"></transportation>
<targetpath name="Device1"></targetpath>
<tag name="Short" size="1" type="SHORT"></tag>
<value>0</value>
<timestamp>2012/09/27 06:10:24 GMT</timestamp>
<quality>192</quality>
<tag name="String" size="1" type="STRING"></tag>
<value>testvalue</value>
<timestamp>2012/09/27 06:10:24 GMT</timestamp>
<quality>192</quality>
<tag name="ShortArray" size="10" type="SHORT ARRAY"></tag>
< <u>Value>0,0,0,0,0,0,0,0,0,0</u>
< <u>TimeStamp>2012/09/27 06:10:24 GMT</u>
<quality>192</quality>

Name		Kind	Туре	Contents
Tran	sportation			
	Command	Attribute	String	Fixed 'GetTagValues'
	ErrorCode	Attribute	32bit Unsinged	
			Int	
	TargetPath	Element	TargetPath	Refer to type of "TargetPath"

Name		Kind	Туре	Contents
TargetPath				
	Name	Attribute	String	Device Name
	Tag	Element	Tag	Refer to type of "Tag"
				The tags you specified.

Name		Kind	Туре		Contents
Tag					
	Name	Attribute	String		Tag name
	Size	Attribute	32bit	Unsinged	The number of element of array.
			Int		"1" is returned when the tag is not array.
	Type	Attribute	String		The datatype string of tag.
					Refer to "The datatype string of tag."
	Value	Element	String		The value which is based on the datatype of tag.
	TimeStamp	Element	String		
	Quality	Element	16bit	Unsinged	
			Int		

4.6.4.4 Write Value of Tag (SetTagsValue)

Request

Example <?xml version="1.0" encoding="UTF-8"?> <Transportation Command="SetTagValues"> <TargetPath Name="Device1"> <TargetPath Name="Tag"> <Value>123</Value> </TargetPath> </TargetPath>

Name		Kind	Туре	Contents
Tran	sportation			
	Command	Attribute	String	Fixed "SetTagValues"
	TargetPath	Element	TargetPath	Refer to type of "TargetPath"

Nar	ne	Kind	Туре	Contents
Targ	petPath (1997)			
	Name	Attribute	String	The target path of device of group to enumerate
				tag.
				eg "Deviœ1Group1"
	Tag	Element	Tag	Refer to type of "Tag"
				Specify tags you want to write value.

Name		Kind	Туре	Contents
Tag				
	Name	Attribute	String	Tag Name
	Value	Element	String	Specify the value which is based on datatype of
				tag.

Response

Example <?xml version="1.0" encoding="UTF-8"?> <Transportation Command="SetTagValues" ErrorCode="0"> <TargetPath Name="Device1"/>

</Transportation>

Name		Kind	Туре	Contents
Transportation				
	Command	Attribute	String	Fixed "SetTagValues"
	ErrorCode	Attribute	32bit Unsinged	
			Int	
	TargetPath	Element	TargetPath	Refer to type of "TargetPath"

Nan	ne	Kind	Туре	Contents
TargetPath				
	Name	Attribute	String	Device Name

4.6.4.5 Constants

■ The Datatype String of Tag

Datatype of tag	Array	The Datatype String of tag for DxpLink
BOOL		"BOOL"
BYTE		"BYTE"
UBYTE		"UBYTE"
SHORT		"SHORT"
USHORT		"USHORT"
LONG		"LONG"
ULONG		"ULONG"
LONGLONG		"LONGLONG"
ULONGLONG		"ULONGLONG"
FLOAT		"FLOAT"
DOUBLE		"DOUBLE"
STRING		"STRING"
BOOL	•	"BOOL ARRAY"
BYTE	•	"BYTE ARRAY"
UBYTE	•	"UBYTE ARRAY"
SHORT		"SHORT ARRAY"
USHORT		"USHORT ARRAY"
LONG		"LONG ARRAY"
ULONG		"ULONG ARRAY"
LONGLONG		"LONGLONG ARRAY"
ULONGLONG		"ULONGLONG ARRAY"
FLOAT		"FLOAT ARRAY"
DOUBLE		"DOUBLE ARRAY"
STRING		"STRING ARRAY"

4.7 Modbus/TCP Server Interface

For details, see the document "DeviceXPlorer OPC Server User's Guide (PLC Communication Edition)" (DeviceXPlorer_Plc.pdf).

5 Operation

5.1 **Tutorial**

If you are using DeviceXPlorer for the first time, follow the steps below to make the necessary settings and easily check operation.

5.1.1 Installing and Setting Up an Ethernet Adapter

Install an Ethernet adapter to the local PC and open Control Panel -> Local Area Connection -> Properties.

📮 Local Area Connection Properties									
Networking									
Connect using:									
Mintel 21140-Based PCI Fast Ethemet Adapter (Emulated)									
Configure									
This connection uses the following items:									
Client for Microsoft Networks Client for Microsoft Networks Client for Microsoft Networks Client and Printer Sharing for Microsoft Networks Client Intermet Protocol Version 4 (TCP/IPv6) Client Protocol Version 4 (TCP/IPv4) Client Protocol Version 4 (TC									
Install Uninstall Properties									
Description									
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.									
OK Cancel									

Open the "Internet Protocol (TCP/IP)" properties screen, set the IP address and host name, etc., and click "OK".

Internet Protocol Version 4 (TCP/IPv4) Properties										
General										
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.										
Obtain an IP address automatical	ly									
• Use the following IP address:										
IP address:	192.168.1.1									
Subnet mask:	255.255.255.0									
Default gateway:	· · ·									
Obtain DNS server address auton	natically									
• Use the following DNS server add	resses:									
Preferred DNS server:	210.134.1.1									
Alternate DNS server:	· · ·									
Validate settings upon exit	Advanced									
	OK Cancel									

5.1.2 Installing DeviceXPlorer

Insert the installation disk into the CD drive of the PC and install DeviceXPlorer.

Install DeviceXPlorer using an account with Administrator privileges.

5.1.3 Starting DeviceXPlorer

From the Programs menu, start "DeviceXPlorer OPC Server 6"->"DeviceXPlorer OPC Server 6".

5.1.4 Start Page

Note

Starting of device Explorer will display a start page as follows. Please push "New Project" and create a new project.

🔮 Untitled.d:	kp - DeviceXPlor	rer OPC Server*					- 0	×
File Edit	View Project	Tools Help						
1 💋 💋	🖪 X	à 🖪 🕅	N. 1	ہ 🙊 🔕 🍪 🕫 🕫 🖉 🕵	🔆 opc 🛠 🕎			
Project Explore	1F	+ # × [Start Page 🗙			▲ ▶ Property		→ # ×
	A		111			Device SYSTEM		~
Project 'L	Intitled			CTDUTD		Connection Test	(Action)	
	CTEM Manual	M1		USF.KVF.K		🖂 🖯 Basic		
	ISIEM [Memory]	марј				(Device name)	SYSTEM	
						Read Only	Disabled	
				272 C227 C27 T		Stop Tag's Quality Upda	Disabled	
				My Recent Project		Device Option		
						Communication Set	1000	
			New Proi	ect		Eix Undate rate	Disabled	
			1			Max are	A A A A A A A A A A A A A A A A A A A	
			Open pro	ject file		Skip communication	Disabled	
			5			All tags communicati	Disabled	
						E Slow polling mode		
						Slow polling mode	Disabled	
						Slow Interval	10000	
						Return error immedia	Disabled	
						E Redundant Commun	ication	
						Redundant Communi	Disabled	
						Standby device	Warm	
						Switching Tune	Auto	
						Beturn to primav aut	Disabled	
						Retry by Both System	Enabled	
						Switching Condition	Disabled	
						Switching Condition	Tag == CommFailur	re(0x_
						Target Tag	Tag	
						Switching Condition	0	
						Relational operator	==	
						Target Quality flag	CommFailure(0×18)	£
						Relational operator	1	
						Port close when swit	Enabled	
						Port close when swit.	criableu	
			Clouder	and an and for a miner file				
			Close the pa	ge when reading project nie.				
Project	hiagnos	Structur	Display a pa	ge in a startup				
								- 1 ×
📟 🖁 🗐	siii "E 🚜	Y						_
L. No	Date	Time	Туре	Message				^
00018	2019/11/08	20:07:29.788	Device 1Port	Address=192.168.19.186 Port=1025				
00019	2019/11/08	20:11:13.292	Device 1Port	Ethernet port closed.				
00020	2019/11/08	20:11:26.056	Device 1Port	Ethernet port open complete.				
00021	2019/11/08	20:11:26.056	Device 1Port	Ethernet information:Protocol=UDP Address=localhost Port=0				100
00022	2019/11/08	20:11:26.056	Device 1Port	Address=192.168.19.186 Port=1025				
00023	2019/11/08	20:11:36.273	Device 1Port	Ethernet port closed.				~
Message	G Watch(1)	🐉 Monitor(1)						
Ready					Tag Count 0[SYSTEM]	nistrator MonitorStop [Decimal]	Disconn	ected
						The second se		

Item	Description
New Project	Creates a new project.
Open project file	Opens a project.
My Recent Project	Shown recently used project file.
Close the page when	Select whether close Start Page when DeviceXPlorer load project file.
Reading project file.	
Display a page in a	Select whether Start Page is displayed when DeviceXPlorer start.
startup	

5.1.5 Project Wizard

(1) Since a project wizard will be displayed if a new project is created, select the target for communication, and input a Device name and Port name, and click the "OK."



Item	Description
Effective license	The components in which the license is effective are enumerated.
Installed Component	The components which are installed are enumerated.
Project name	Specify project name.
Location	Specify project file path
Device name	Input Device name for creating Device.
Port name	Input Port name for creating Port.

(2) Specify the port information. You can confirm the existence of the IP address you entered by clicking the "PING" button. For details, refer to 5.3.

Create project					
Port properties	Port properties PING Test	Machine	Z1710-02		
Device properties	Adapter (Automatic)		~		
Tag properties	Explanation Status IPv4 Address	DHCP IPv6 Address			
	Network Protocol				
	Adapter IP Address <u>A</u> dapter Port No.	localhost			
	Target IP A <u>d</u> dress Target P <u>o</u> rt No.	192.168.19.186 1025 ~			
	<u>S</u> end Delay <u>T</u> imeout	0 msec 3 sec			
	<u>R</u> etry count	3 times			
]	Cance	< <u>B</u> ack	<u>N</u> ext > Fin	ish

(3) Specify the Device information.. You can check the communication with the PLC by clicking the "Connection test" button . For details, refer to 5.4.

Create project	
Port properties	Device properties Connection Test
Device properties	CPU TYPE
Tag properties	○iQ- <u>R</u> ○iQ-E ● Q ○ L ○ QnA ○ A ○ FX □ Use Q4E Protocol □ Use Block Access Command
	NETWORK Network, No. PC No, 255 Unit Station No. Unit I/O No. Hultiple CPU System Redundancy CPU System None Other Control Standby
	Communication CPU monitoring timer 10 sec Remote Password
	ACCESS POINTS Bit R/W Bit Poke Word B/W 950 Word Poke 160
	Cancel < <u>B</u> ack <u>N</u> ext > Finish

(4) Specify the Tag information. For details, refer to 5.6.

Port properties	Tag properties	17.1		line		_	
Device properties		Auto Eo	rmat	100			
Tag properties	Device Type	D	~	Data Register			
	Device No	0		Block No.	0		
	Data Type	SHORT	~	Byte Position	Lower Byte		
	Length	1	1	Bit Position	0		
			Attribute	Attribute	ReadWrite	Y	
	🗌 Array			Calculation	NONE	\sim	

(5) Above, Port settings and Device settings indispensable for communication with partner apparatus, and Tag settings were completed.

The rest should perform addition of a tag and various option setup according to a system.

Untitled.dxp - DeviceXPlorer OPC Server						
File Edit View Project Tools He	p					
12 😂 🖪 1 % 🖻 🗗 1	🔎 🐼 ≽ 👰	🎦 🗞 🎭 🗠	🔇 🙈 🏟 🖇			
Project Explorer 🔷 🗢 🛪 🗙	Tag List : Device1 🗙					
	🕼 🔊 🗩 🗿 Device1					
📑 Project 'Untitled'	Name	Data Type	Location			
⊨ I SYSTEM	- ChangeRateAlarm	Short	D1			
SYSTEM [MemoryMap]	- DevAlarmTag	Short	D2			
Device1 [Mitsubishi MELSEC]	- DiscreateAlarmTag	Bool	MO			
Device (Port [Ethernet]	- LevelAlarmTag	Short	Do			

5.1.6 Accessing DeviceXPlorer from a Client

📲 Untitled.dxp - DeviceXPlore	r OPC	Server*			
File Edit View Project	Tools	Help	þ		
i 📝 📂 💾 i 🐰 🖬	l l	User Ma	anagement	• 🍉 🗐 💡	5 📀 🚦
Project Explorer	OPC [Launch	OPC Client	×	
🔢 🖾 🌆 🖬	* (Option		vice1	
🔢 Project 'Untitled'			Name		Data Type
🖨 🗐 SYSTEM			-🔂 Tag001		Short
SYSTEM [MemoryM	ap]		-🔂 Tag002		Short
Device1 [Mitsubishi ME	LSEC]		-🔂 Tag003		Short
	ie(]		-🖾 Tag004		Short

From the Tools menu, select "Start OPC Test Client".

In the OPC Test Client menu, select "Connect" and connect to "Takebishi.Dxp.6".

New OPC Server				×
OPC Server Prog.ID Takebishi.Dxp.6 Server Node ("\#se Server Process- © Default	rver" or "server" or " C InProcess	www.server.com") Refresh	Available Servers Takebishi.Dxp.5 Takebishi.Dxp.6 Takebishi.MelsecEthernet.1	-
OPC DA Version	C OPC-DA3,0			
,			ОК	Cancel

Next, select "Server" and "AddGroup" in "OPC" menu, and add group.

1	VcSample	eOpc							
File	OPC	View	Help						
Ta	C	onnect			E		TagName	Value	
	Se	erver		>		AddGrou	qu		
	G	roup		>		Error Me	essage		
	lte	em		>		Server P	roperties		
						Client Pr	operties		
						Disconn	ect		
					_				

Add Group		×
OPC Group Name Active Update Interval Deadband	Group0	ms % FS
Time Bias	0	min
Locale ID	0	
	OK Car	icel

Next, select "Group" and "AddItem" in "OPC" menu, and add tags.

1	/cSampleOpc						ן ר	Add Item	×
File	OPC View Hel	lp						Access Path	
⊡. Ta	Connect		E		TagName	Value		Browse Items	Server Tags
	Server	>						Bevice1 SYSTEM	Tag001 Tag002 Tag003
	Group	>		AddItem					Tag004 Tag005
	Item	>	~	AsynclO2 AsynclO2 AsynclO2 Active Advise UnAdvise Group Pro	Reflesh (Cache) Reflesh (Device) Cancel			Device1.Tag004;Device1.Tag005; Added Items List Device2.Tag004 Device1.Tag005 Device1.Tag007	120008 120008 120009 12000 2000 2000 2000 2000 2000 2
			_						OK Cancel

Check that the client successfully obtained data. (If "0xC0" appears under Quality, communication is functioning normally.)

🧏 VcSampleOp	DC .						-		×
<u>File OPC Vie</u>	w <u>H</u> elp								
🖃 Takebishi.Dxp	p.6		TagName	Value	Quality	TimeStamp			
Group0			Device1.Tag001	1	0xC0	11/08/2019 19:43:25.568			
			Device1.Tag002	2	0xC0	11/08/2019 19:43:25.568			
			Device1.Tag003	0	0xC0	11/08/2019 19:43:25.568			
			Device1.Tag004	8874	0xC0	11/08/2019 19:43:25.568			
			Device1.Tag005	-1234	0xC0	11/08/2019 19:43:25.568			
			Device1.Tag006	10000	0xC0	11/08/2019 19:43:25.568			
			Device1.Tag007	1234	0xC0	11/08/2019 19:43:25.568			
			Device1.Tag008	-20000	0xC0	11/08/2019 19:43:25.568			
			Device1.Tag009	32767	0xC0	11/08/2019 19:43:25.568			
			Device1.Tag010	-26215	0xC0	11/08/2019 19:43:25.568			
Date T	Time	Message							
2019/11/08 1	19:39:32.518	Connected	to [Takebishi.Dxp.6]	/ hr= [0]					
2019/11/08 1	19:40:54.252	IOPCServer	::AddGroup Called / I	nr= [0]					
2019/11/08 1	19:43:25.539	IOPCItemN	Igt::AddItem Called /	hr= [0]					
2019/11/08 1	19:43:25.541	Success							
2019/11/08 1	19:43:25.568	IOPCSyncl(O::Read Called / hr= [0]					
		-							
								NUMA	
кеафу								MUN	11.

5.2 Screen Layout

Untitled.dxp - DeviceXPlorer OP	Server*						– o ×
File Edit View Project Too	is Help						
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ो 🏦 💹 🐨 🎾 🧌	3 🗞 🎭 🧠 🌏 i		IPC 🛠 🔽			
Project Explorer 🛛 👻 🕸 🗙		Tag List : Device1 x			4 Þ	Property	* 8.1
	🔏 Diagnostics	🖓 🖾 🔎 😩 Device1		1	✓ MelsecEthernet	Device Device1	2
Project 'I Intitled	- Outer interface	Name	Data Tuna	Location	Mahun		
A-G SYSTEM		in Turne	Data type	Location	value	Connection Test	(Action)
SYSTEM [MemoryMap]	Suitel ink	The coop	Short	07		🖯 Basic	
Device1 [Mitsubishi MELSEC	Event	Tag002	Short	02		(Device name)	Device1
Device 1Port [Ethernet]		Tag004	Short	D4		CPUTTYPE	Lib Type=MeisecEthernet_
		-Tagoos	Short	DS		Use Block Access Com.	Disabled
		- Tag006	Short	D6		Use Q4E Protocol	Disabled
	Diagnostia	Tag007	Short	D7		Network No.	0
	Diagnostic	-IN-Tag008	Short	DB		PC No.	255
	View	Tag009	Short	D9		Unit Station No.	0
	VIEW	-02 Tag010	Short	D10		Multiple CPU System	None
						CPU monitoring timer	10
						Remote Password	
Droject	final and the second					ACCESS POINTS	
Froject						Word R/W	960
Evplore	Structure					Bit Poke	188
Explore						Word Poke	160
			-	·		Communication Sett	ing
			Tag List e	etc		Undate Rate	1000
			0			Fix Update rate	Disabled
	Structure Template					Prope Grie	rty
essage	* :	× Monitor(1)	Device Prese	7 1	▼ Ø ★ Watch(1)		v 1
		Piegister	Device STS1	EM Y		10	
No Date Time 00001 2019/11/08 20:13 00002 2019/11/08 20:13 00003 2019/11/08 20:13	Type Message 156.387 SYSTEM DeviceXPlorer V 156.426 SYSTEM Temporary licen Start to loading	fersi se fi proje	A98 7654 3210	v	alue Name	Value	Qu
			Register			Watch	
M	essage		Monitor	J		Monitor	J
1		>	Teo Co	unt 10/Device11	<	MonitorStop [Decimal]	So Disconnected

[Project Explorer]

Project Explorer allows you to visually monitor the setting status of ports, devices, and groups, and allows you to create or edit them. Using the toolbar, you can also sort by device, port, or protocol (PLC).

Icon	Name	Description
	Device View	A tree with a device as a root in a hierarchical structure.
	Port View	A tree with port information as a root in a hierarchical structure.
BT	Protocol View	A tree with PLC information as a root in a hierarchical structure.
10	Device Folder View	A tree with Device Folder as a root in a hierarchical structure.

Right-click Project Explorer to view the pop-up menu of related functions.



[Diagnostic View]

Diagnostic View allows you to check information such as the access status of each interface and the current value of each tag.

Diagnostics 🗢 🕂 🗙	Tag List : Device1	Diagnostics List	t 🗙 Event Lis	st : Device1	
🔏 Diagnostics	Client Name	Groups	Items	Active Items	Error Items
😑 🝼 Outer interface	🕢 VcSampleOpc	1	10	10	0
DPC DA	-				
SampleOpc					
GroupU					
ManitaradItama					
Device 1					
SuiteLink					
Device1					
Event					
Device 1					

[Structure Template]

Structure Template allows you to check information of structure defined.

Structure Template 🔷 👻	д ×	Structure : Template02 🗙			
Structure		Member name	No	Data Type	Processir
Template01		🖃 🔩 Member01	01	[Template01]	
iemplate02		- Member01	01.01	Short	
		- Member02	01.02	Short	
		- Member03	01.03	Short	
		- Member04	01.04	Short	
		- Member05	01.05	Short	
		- Member06	01.06	Short	
		- Member07	01.07	Short	
		- Member02	02	Short	
		🗠 Member03	03	Short	

[Tag List etc.]

The property information of Tag List, Structure Template Tag List, Script List etc. are shown.

Tag List : Device	e1 x					
😨 💋 🔎 💈	Device1		← Me			
Name	Tag List : Device1 Stru	icture : Template02 🗙				
- Tag001	Member name	Tag List : SYSTEM Struct	ure : Template02 Eve	nt List : SYSTEM 🗙	License	4
- Tag002	🖃 🔩 Member01	🔞 👩 🗩 🛐 SYSTE	M			
- Tag003	- Member01	Script	Event	Condition	Run	
- Tag005	Member02	Script1	Period	{ 500 }	Run	
	Member03	Script2	Period	{ 500 }	Run	
l	Member04	Script3	Period	{ 500 }	Run	
		Script4	Period	{ 500 }	Stop	
		Script5	Period	{ 500 }	Run	

[Property Grid] This grid shows information of selecting Object. And you can configure object.

Property	▼ ‡	×
Device Device1		•
21 21 😨 🖾 🔎 🛛		
Connection Test	(Action)	
Basic		
(Device name)	Device1	
Parameter	LibType=MelsecEthernet;	=
OPU TYPE	Q -	
Use Block Access Comm	Disabled	
Use Q4E Protocol	Disabled	
Network No.	0	
PC No.	255	
Unit Station No.	0	
Multiple CPU System	None	
Redundancy CPU System	None	
CPU monitoring timer	10	
ACCESS POINTS		
Word R/W	960	
Bit Poke	188	
Word Poke	160	
Device Ontion		
CPU TYPE Select target CPU TYPE		

[Message View/Watch View]

This shows messages such as communication error information and diagnostic information.

Me	ssage				👻 🎚	×
STP	8	🤬 🕾 🛃	7			
I	No	Date	Time	Туре	Message	*
R	00054	2012/05/13	12:36:23.621	Device1Port	Recv(31):D00000FFFF030016000006F00C80000000000000000000000000000	0
1 🕅	00055	2012/05/13	12:36:24.611	Device1	Read D0-D9 point=10	
1 🕅	00056	2012/05/13	12:36:24.611	Device 1Port	Send(21):500000FFFF03000C0028000104000000000A80A00	
I 🥷	00057	2012/05/13	12:36:24.621	Device 1Port	Recv(31):D00000FFFF030016000006F00C80000000000000000000000000000	0
1 🕅	00058	2012/05/13	12:36:25.611	Device 1	Read D0-D9 point=10	
1 🕅	00059	2012/05/13	12:36:25.611	Device1Port	Send(21):500000FFFF03000C0028000104000000000A80A00	
1 🕅	00060	2012/05/13	12:36:25.621	Device1Port	Recv(31):D00000FFFF030016000006F00C80000000000000000000000000000	0 📃
						Ŧ
-					4	

[Watch Monitor]

Arbitrary tags can be registered and you can monitor the current value.

Watch(1)					→ ‡ ×
🔎 🏹 🐟 🗊					
Name	Value	Quality	Timestamp	Comment	
Device1.D1000	12	Good (C0h)	2012/05/1:05		
Device1.R1234	0	Good (C0h)	2012/05/1:05		
Device1.M0	Off	Good (C0h)	2012/05/1:05		
Device1.Tag001	111	Good (C0h)	2012/05/1:05		
Device1.B1234	Off	Good (C0h)	2012/05/1:05		
Device1.D0:A10	111, 200, 0, 0, 0, 0, 0, 0, 0	, 0 Good (C0h)	2012/05/1:05		

[Register Monitor]

Even if there is no ladder tool, the register value on PLC can be monitored.

Monitor(1))									→ ‡ ×
	Reg	ister D	0		Dev	ice De	evice1		•	
Register		+0	+1	+2	+3	+4	+5	+6	+7	
D0		111	200	0	0	0	0	0	0	E
D8		0	0	26471	0	0	0	0	0	
D16		0	0	0	0	0	0	0	0	
D24		0	0	0	0	0	0	0	0	
D32		0	0	0	0	0	0	0	0	
D 40		0								

5.2.1 Menus

The menus available in DeviceXPlorer are shown in the table below.

[File Menu]

Item		Description	
New		Creates a new project.	
Open		Opens a project.	
Close		Closes a project.	
Save		Overwrites and saves the project file.	
Save as		Saves the project under a new name.	
Immont	Definition	Imports project information.	
Import	TagMemory	Imports Tag memory and DeviceXPlorer shifts to Offline Mode.	
Ermont	Definition	Exports project information in the XML or CSV format.	
Export	TagMemory	Exports Tag memory(tag name, value, quality, timestamp).	
The recently project list		Shown recently used project file.	
Exit		Exists DeviceXPlorer.	

[Edit Menu]

Item	Description
Cut	Cuts the selected tag(s).
Сору	Copies the selected tag(s).
Paste	Pastes tag information.
Delete	Deletes the selected device, group or tag.
Select all	Selects all the tags included in the selected devices.
Find	Searches for a specified tag name.
Array Viewer	Show array viewer.
Write Value to Tag	Write current value to tag.
Properties	Shows the Properties screen for the selected item.

[View Menu]		
Item		Description
Monitor	Device monitor	Reads the tag value and displays it to allow you to check the communication status and value.Communication is performed only for the device shown in the window.
	Cache monitor	Shows the value of the tag being accessed by the client. Values are not shown for tags not being accessed.
Offline		Shifts to Offline Mode.
Communication inform	nation	Shows the communication status and number of errors for each device.
	INFO	Shows general information messages.
	WARNING	Shows warning messages.
	e filters INFO WARNING ERROR FATAL ERROR Script log Communication Data OPC Interface Access SuiteLink Trace DxpLink Trace All on	Shows error messages.
WARNING Show ERROR Show FATAL ERROR Show Soriet log Show	Shows fatal error messages.	
	Script log	Shows Script messages.
Message filters	Communication Data	Traces the status of communication with the PLC.
	OPC Interface Access	Traces the access status of the OPC interface.
	SuiteLink Trace	Traces the access status of the SuiteLink interface.
	DxpLink Trace	Traces the access status of the DxpLink interface.
	All on	Enables all of the above 6 messages.
	All off	Disables all of the above 6 messages.
	Project Explorer	Shows Project Explorer.
	Message View	Shows Message View.
Window	Diagnostics View	Shows Diagnostics View.
WILLOW	Watch	Shows Watch Monitor.(Max 8 view)
	Monitor	Shows Register Monitor.(Max 8 view)
	Start Page	Shows Start Page
Pause Message Displa	у	Temporarily pauses the output of trace information.
Toolbar		Switches the toolbar display on and off.
Status bar	-	Switches the status bar display on and off.
OfflineCache monitorCache monitorOffline\$Communication information\$Communication information\$INFO\$WARNING\$ERROR\$FATAL ERROR\$Script log\$OPC Interface Access7SuiteLink Trace7OPC Interface Access7SuiteLink Trace7All on1All off1Project Explorer\$Message View\$Diagnostics View\$Value Message Display7Toolbar\$Statu Sbar\$Value Format\$Binary\$Octal\$Decimal6Hexadecimal6Update Views1Update Views1	Specifies tag value format for tag monitor and tag	
	Decimal Hexadecimal	diagnostics.
Update Views		Updates the displayed content.

[Project Menu]				
Item		Description		
Project wizard		Starts the project wizard to generate ports, devices, and tags all at once.		
	Port	Creates new communication port information.		
	Device	Creates new device information.		
	Group	Creates new group information.		
	Tag	Creates new tag information.		
Tressort	Structure Tag	Creates new Structure Tag information.		
Insert	Method	Crates new Method.		
	Device folder	Create new Device folder.		
	Device Generator	Starts Device Generator.		
	Port Generator	Starts Port Generator.		
	Tag Generator	Starts Tag Generator.		
	Port (P)	Sets communication port information.		
Properties	Device (D)	Sets the device information.		
	Group (G)	Sets group information.		
	Tag (T)	Sets tag information.		
Set as startup project		Sets the current project file as a startup project.		
Project 1 properties		Opens the Properties screen (configuration information) for		
r rojecti properties		the project.		

[Tools Menu]

Item		Description
	Configuration	Sets the User information.
User Management	Login	Logins
	Logout	Logouts
Start OPC test client		Starts the OPC test client.
		Opens the Properties screen (shared information) for the
Options		project.

[Help Menu]

Item		Description		
	User's Guide (Server Edition)	Shows Server Edition.		
	User's Guide (PLC Communication	Chows DLC Communication Edition		
	Edition)	Shows FLC Communication Edition.		
	OPC-DA 3.0 Specification			
	(Custom Interface)			
Manuals	OPC-DA 2.05A Specification	Shows the OPC DA interface an eifertions		
	(Custom Interface)	Snows the OPC DA Interface specifications.		
	OPC-DA 2.0 Specification			
	(Automation Interface)			
	OPC-AE 1.10 Specification			
	(Custom Interface)	Snows the OPC AL interface specifications.		
Online Registra	tion	Performs user registration for the product.		
Send mail to support		Starts the mailer.		
Connect to Product's Web Site		Opens the product information site.		
License		Shows and sets license information.		
About DeviceXI	Plorer	Shows the versions information for DeviceXPlorer.		

5.2.2 Toolbar

Toolbar and shortcut key are assigned to following as.

FUNCTION	ICON	SHORTCUT
New	/	Ctrl+N
Open	1	Ctrl+O
SaveAs		Ctrl+S
Cut	8	Ctrl+X
Сору		Ctrl+C
Past		Ctrl+V
Delete	1	DEL
Device Monitor		F3
Cache Monitor	~	F4
Create Port	>	Ctrl + P
Create Device	-	Ctrl + D
Create Group	2	Ctrl + G
Create Tag		Ctrl + T
Create Structure Tag	%	Ctrl+M
Create Method	2	Ctrl+I
Create Device Folder		Ctrl+W
Project Wizard	4	Ctrl+W
Device Generator	¢.	Ctrl+Shift+D
Port Generator	*	Ctrl+Shift+P
Tag Generator	Ø	Ctrl+Shift+T
OPC Test Client	OPC	
Option	*	
Project Property		Alt + F7

5.2.3 Another Shortcut Key

FUNCTION	SHORTCUT
Write value	(While selecting tag) Shift + Enter
Array Viewer	(While selecting tag) Ctrl + Enter
Change the Name	(While selecting Device or Port, etc.)F2

5.2.4 Property Grid

The property information is expressed to a property grid as the click of the project name on Project Explorer, a Device name, or a Port name, the click of the tag name in a Tag list view, etc.

A check and change of a settings can be performed intuitively, without opening a dialog.

🗄 🤰 📝 🖉 🖉 🔎 👘	
Connection Test	(Action)
 Basic 	
(Device name)	Device1
Parameter	LibType=MelsecEthernet;
OPU TYPE	Q -
Use Block Access Comm	Disabled
Use Q4E Protocol	Disabled
Network No.	0
PC No.	255
Unit Station No.	0
Multiple CPU System	None
Redundancy CPU System	None
CPU monitoring timer	10
ACCESS POINTS	
Word R/W	960
Bit Poke	188
Word Poke	160
Device Ontion	*
CPU TYPE Select target CPU TYPE	

Property Grid icons are assigned to following as.

INCON	Description	INCON	Description
	Shows properties.		Shows Device settings dialog.
Å↓	Shows properties alphabetical.		Shows Group settings dialog.
	Apply button (Properties loaded are update.)		Shows Port settings dialog.

5.2.5 Clip of List View

A tab clip can be carried out if tabs, such as a Tag list, Structure list, an event script list, are right-clicked. With clipping, it can leave a tab to always display.

File Edit View Project Tools He	lp			
178212661	1 🗾 🔨	😭 🖓 <	🗞 🇞 💫	
Project Explorer 🛛 🔻 🕂 🗙	Tag List : Device1	× Structure : Tem	nplate02 Event Li	st : SYSTE
	😨 🖾 🔎 🍋	Close tab C	trl+F4	
Project 'Untitled'	Name	Close tabs	cation	Valu
SYSTEM	- Tag00:	Clip this Tab)	
⊞* [Mitsubishi MELSEC]	- Tag002	Snort		
	- Tag003	Short	D2	

5.3 **Ports**

Select Project View -> Ports to view port information. Port information shows a dialog that varies depending on the type of communication port, such as Ethernet or serial.

💽 Untitled.dxp - DeviceXPlorer OPC Serve	*					- 0	×
File Edit View Project Tools Help	1						
2 📂 🗖 🕹 🖻 🖪	🏓 💇 ⋟	99 😭 9	b % % 🍕) 🕰 🤅	🖗 🌾 орс 🤌	× 💷	
Project Explorer 🔷 🔻 🗙	Tag List : Device1 🗙			4 Þ	Property		
	😨 👩 🔎 🛐 Devid	ce1	✓ MelsecEtl	hernet	Port Device1Port		~
Project 'Untitled' ⊨ SYSTEM	Name	Da	ata Type	Locatior	Basic	B	^
SYSTEM [MemoryMap]	- Tag002	Sh	ort	D2	(Port Name)	Device1Port	17.6
😑 🗐 Device1 [Mitsubishi MELSEC]	- Tag003	Sh	ort	D3	Parameter PING Test	Lib Type=Ethen	net;inf
Device 1 Port [Ethernet]		Sh	ort	D4	Select Adapter	Enabled	
		Sh	ort	D5	Adapter Name	(Automatic)	
		Sh	ort	D6	IP	IPv4	
	-🖾 Tag007	Sh	ort	D7	Transport protocol	UDP/IP	~
	-🔂 Tag008	Sh	ort	D8		1*	
	-🔂 Tag009	Sh	ort	D9			
	-🔂 Tag010	Sh	iort	D10			
Project E 🔏 Diagnos 🗇 Structur	<			>			
Watch(1)							→ ↓ ×
🔎 💽 🤏 🗊							
Name Value		Quality	Timestamp	Attribute	Comment		
Wessage 🥵 Monitor(1) 👹 Watch(1)							
Ready	-		Tag Count	10[Device1]	administrator 😹	MonitorS	top [Dec

Important

- You can create up to 255 ports.
- A Port name is a name on management and is not related to the name space accessed from a client.

The following are displayed in Port Settings of Ethernet. Setting properties differ for every communication port. Please refer to 5.3.4 if you use Ethernet port or refer to 5.3.5 if you user Serial port. For other ports, refer to the "User's Guide (PLC Communication Edition)".

5.3.1 Creating New Ports

File Edit View	Pro	ject Tools Help				
i 📝 😂 💾	s.	Project Wizard	Ctrl+W		Qa 0 0.	0x 0x 🐴 🗽
		Insert	•	۶	Port	Ctrl+P
Project Explorer		Properties	+	9	Device	Ctrl+D
III 🖾 🖬		Set Current Project as Sta	rtun	앒	Group	Ctrl+G
🔊 Project 'Untitled'			intop	-96-	Tag	Ctrl+T
📗 🚊 🔎 SYSTEM [Mei	-	Property of Untitled	Alt+F7	Des/	Structure Tag	Ctrl+R

From the Projects menu, select Insert-> Port.

Select the port type and input the Port name.

Installed Port	Memory Map		Abcdefg hijkinn coor st uwwyz. A
	Ethernet		Ethernet
	🚿 EthernetRFID		
	DxpLink		Description Provide the way to communicate with controlers via Ethernet
	COM Library		Internet Protocol
	ttherNet/IP		TCP/IP UDP/IP
	DBC		
	TOYOPUC Communication Library		
ļ	FZSocket GOT	~	<u> </u>
Project name	Untitled		New project
Location	C:#Users#seigi#Documents#TAKEBISHI#DeviceXPlorer OPC Server 6#Project		✓ <u>B</u> rowse
<u>D</u> evice name	Port Name Port1		

The port dialog will appear. Enter the communication parameters and click "Finish".

Port properties	PING Test]	Machine		
	Select Adapter Adapter (Auto Explanation Status	omatic)	DHCP	~	
	IPv4 Address		IPv6 Address		
	Network Protocol	•		/ <u>6</u>)P/IP	
	Adapter IP Address Adapter Port No.	i loc	alhost	~	
	Target IP Address	169	9.254.152.194		
	Send Delay	0	msec		
	Retry count	3	times		

5.3.2 Changing the Port Name

You can change the port name by either clicking on the port name again once it is selected, or by using the F2 key to enable in-place activation.

* You cannot change to a port name that already exists.

Project Explorer 🔷 🔻 🛪
Project 'Untitled'
Device1 [Mitsubishi MELSEC]
Device 1 Port

5.3.3 Port Settings

To display Port Setting dialog,

- You select a Port name in Project Explore and select Properties->Port.
- You click Port Jump button on Tag List View.
- You Right-Click and select "Property".

[Project menu]

File Edit View	Project Tools Help	_		
7 📂 💾 🛛	A Project Wizard Ctrl+W	-	역기 😭	<u></u>
	Insert			a .
Project Explorer	Properties 🕨	•	Port	
📰 🖾 🖷	Set Current Project as Startup		Device	
🔢 Project 'Untitled'			Group	ata Ty
SYSTEM	Property of Untitled Alt+F7		Tag	hort
📗 🖮 👰 Device1 [Mits	IDISHI MELSECJ III - 🔂 Taq002	-		mort

[Port Jump button]

File Edit View Project Tools He	lp
1 🖉 📂 💾 🔏 🖻 🖪 1	1 🔊 🐼 ≽ 🖓 🍃 🗞
Project Explorer 🛛 🔻 🕂 🗙	Tag List : Device1 🗙
	😨 🔊 🔎 🗐 Device 1
Project 'Untitled' SYSTEM Device 1 [Mitsubishi MELSEC] Device 1Port [Ethernet]	Name Port Display Port properties Tagooz Tagooz Tagooz Short

[Right Click]



The port dialog will appear. Enter the communication parameters and click "OK".

Please refer to 5.3.4 if you use Ethernet port or refer to 5.3.5 if you user Serial port. For other ports, refer to the "User's Guide (PLC Communication Edition)".

PING Te	st	Ma	chine	Cancel
Select Ad	lapter			A
Adapter	(Automatic)	6	~	мрруу
Explanation				
Status		DH	OP	
IPv4 Address		IΡν	6 Address	
Network		● IPv <u>4</u>	∩ IPv <u>§</u>	
Protocol		OTCP	IP	
Adapter IP A	ddress	localhos	~	
Adapter Port	No.	0	~	
Target IP Ad	dress	192.168.	9.186	
Target Port N	No.	1025	~	
Send Delay		0	msec	
Timeout		3	sec	
Retry count		3	times	

5.3.4 Setting Ethernet Ports

ort						
<u>P</u> ING Tes	t		Machine			
Select Ad	apter		- some	-		
Adapter	(Automatic)					~
Explanation						
Status			DHCP			
IPv4 Address] IPv6 Ad	dress		
Network		۲	IP∨ <u>4</u>		◯ IPv <u>6</u>	
Protocol		0	<u>T</u> CP/IP		◉ <u>u</u> dp/ip	
Adapter IP Ad	ldress	loca	lhost			
<u>A</u> dapter Port	No.	0		~]	
Target IP Add	ress	192	168.19.18	6	1	
Target Port N	0.	102	5	~]	
Send Delay		0		msec		
Timeout		3		sec		
Detro escut		3		times		

Item	Description	
PING Test	Sends and receives a Ping command to / from the IP address of the PLC. In the	
	environment where the transmission of a message of the PING command is limited, you	
	cannot use this function.	
Machine	Shows the computer name.	
Select Adapter	Check if you fix adapter.	
Adapter	Shows a list of the adapters installed on the computer.	
Explanation	Shows Ethernet adapter name.	
Status	Shows "Connect" when a LAN cable is connected.	
DHCP	Shows "Enable" when DHCP is in use.	
IPv4 Address	Shows the IPv4 address of the selected adapter.	
IPv6Address	Shows the IPv6 address of the selected adapter.	
Network	Select IPv4 or IPv6.	
Protocol	Select TCP/IP or UDP/IP.	
Adapter IP address	Shows the IP address of the selected adapter. When you does not fix adapter, you can specify	
	the IP address of the adapter or machine name that will communicate with the PLC. When	
	you specify localhost'or '0.0.0.0', DeviceXPlorer chose available adapter automatically.	
Adapter Port No.	Specify the port number of the selected adapter. If you specify port number "0", the OS will	
	automatically assign an available port. The port number can be specified 0 or any numbers	
	between 1024 and 65535.	
Target IP address	Specify the machine IP address or machine name of the Target.	
Target Port No.	Specify the port number of the Target. Set a number between 0 and 65535.	
Send Delay	Specify the waiting time before sending the next command after a response is received from	
	the other equipment on the millisecond time scale. Set a number between 0 and 65535.	
Timeout	Specify the waiting time between sending a request message and receiving a response	
	message. If a response cannot be returned within the specified time, it results in a timeout	
	error. Set a number between 0 and 60.	
Retry Count	Specify the number of times to retry when a timeout error occurs. Set a number between 0	
	and 10.	

Note

When you specify port number to something other than 0 in using TCP / IP, if the connection of the port has lost, the port becomes TIME_WAIT status. Until the port becomes CLOSED status from TIME_WAIT, the port is not available. This is the specification of TCP/IP. In this time, the DeviceXPlorer cannot communicate with the controller through this port, and DeviceXPlorer outputs the log 'Open Error(Code=10048)'. If you use TCP / IP, it is recommended to specify 0 to the adapter port number and use un passive open mode at the PLC side.

[PING]

PING is a function that checks the existence of the recipient IP address by sending an ICMP request packet to the set recipient IP address and receiving a response packet. When PING is implemented, the following information is displayed.

< Successful: "Reply from" >	< Failed: "Reply Timeout">
PING Test 🛛 🔀	PING Test
Pinging 192.168.1.2 [192.168.1.2] with 32 bytes of data: Reply from: 192.168.1.2 : bytes=32 time=571ms TTL=250 Reply from: 192.168.1.2 : bytes=32 time=501ms TTL=250 Reply from: 192.168.1.2 : bytes=32 time=501ms TTL=250 Reply from: 192.168.1.2 : bytes=32 time=501ms TTL=250	Pinging 192.168.1.2 [192.168.1.2] with 32 bytes of data: Request time out.
<u>R</u> etry <u>Q</u> ose	

Important

For using PING on Windows Vista or later OS, you should set "Inbound connection" of "Public Profile" in Administration Tools-"Secured Windows Firewall" to "Allow.

And if UAC is valid, please start DeviceXPlorer as "run by Administrator". If UAC is valid and you don't start as "run by Administrator", you will see error "socket error [10013]"

Windows Firewall with Advanced Security on Local Computer Pr	
Domain Profile Private Profile Public Profile IPsec Settings	
Specify behavior for when a computer is connected to a public network location.	
State	
Firewall state: On (recommended)	
Inbound connections: Block (default)	
Outbound connections: Allow (default)	
Settings Specify settings that control Windows Firewall behavior. Customize	
	PING Test
Logging	
Specify logging settings for Customize	ERROR : socket error [10013]
	·
Learn more about these settings	· · · · · · · · · · · · · · · · · · ·
OK Cancel Apply	<u>R</u> etry Close

5.3.4.1 Timeout Settings for TCP/IP

When using the TCP protocol, it is necessary to set an appropriate timeout value and number of retries in DeviceXPlorer.

The following is an explanation of the relationship between the TCP communication operation and the timeout setting, assuming that the PC is running on Windows OS.

[Sending Commands from PC]

After a PC has sent a command, if there is no acknowledgement returned from the PLC, the command is resent at the TCP level at the intervals shown below.



Winsock Error (10054) will be happened if ACK is not returned.

In Windows OS, the default RTO (Retransmission Time-Out) for Ethernet is 0.5 seconds. When the maximum number of retransmissions has been reached (default: 5 times / 31.5 seconds), error 10054 (the connection was reset from the remote side) is returned to the application layer. DeviceXPlorer then cuts the connection and reopens it. The RTO is changed dynamically, and the timeout value increases by doubling and redoubling.

[Sending Response to PC from the PLC (MELSEC-Q)]

In the MELSEC-Q series, if there is no acknowledgement from the PC after the PLC has sent a response, retransmission occurs at the TCP level in accordance with the TCP retransmission timer (default: 10 seconds). When the TCP ULP timer value is exceeded, a RESET flag is sent.



While the line is disconnected, the RESET flag cannot reach DeviceXPlorer. Once the connection is restored and a command is sent from DeviceXPlorer, the RESET flag is returned as a response. At the same time, 10054 is returned to the application layer (indicating that the connection was reset from the remote side), so DeviceXPlorer cuts the connection and reopens it.

Important

If the TCP protocol is selected, we recommend that the timeout be set to "31.5 seconds or more" and the number of retries be set to "0".
5.3.5 Serial Port Settings

Port		
Com <u>P</u> ort Baud Rate	0	
19200		~
Parity		
● N <u>o</u> ne	() O <u>d</u> d	◯ E <u>v</u> en
Flow Control		
Hardware	(RTS/CTS)	\sim
Data Bit		
○ 7b <u>i</u> t) 8bi <u>t</u>	
Stop Bit		
● <u>1</u> bit	() <u>2</u> bit	
<u>S</u> end Delay	0	msec
Ti <u>m</u> eout	3	sec
<u>R</u> etry Count	3	times

Item	Description
Com Port	Set COM port number between 1 and 256.
Baud rate	Select baud rate for communication.
Parity	Set the parity bit, on or off.
Flow control	Select "Hardware (RTS / CTS)" to perform RTS / CTS flow control.
Data length	Specify the data length.
Stop bit	Set the stop bit.
	Specify the waiting time before sending the next command after a response is received from the
Send delay	other equipment on the millisecond time scale.
	Set a number between 0 and 65535.
Timoout	Specify a number between 0 and 60 (on the second time scale) as the time to wait between
Timeout	sending a request message and receiving a response message.
Dotary Timos	Specify the number of times to retry when a timeout error occurs. Set a number between 0 and
neury runes	10.

Note

In binary communication, communication is 8 bits / character, so the data length must be set to "8".

5.3.6 Port Generator

The package generation of the port setup can be carried out. It can start from a project menu to the Insert ->Port Generator.

File Edit View	Project Tools Hel	p	_		
i 📝 🖂 🦳 I	🞄 Project Wizard	Ctrl+W		93 💁 💁 📖	-05 🙆 L.e.
	Insert	•	≫	Port	Ctrl+P
Project Explorer	Properties	•	1	Device	Ctrl+D
💽 🖾 🖬 🖬	Set Current Proje	ect as Startup	8	Group	Ctrl+G
📑 Project 'Untitled'				Tag	Ctrl+T
SYSTEM	Property of Untit	iled Alt+F7	9,2	Structure Tag	Ctrl+R
Device I [Mits	ort [Ethernet]	-🔂 Tag002	DQ.	Method	Ctrl+M
		- Tag003	-	Device folder	Ctrl+I
		- Tag005	1	Device generator(V)	Ctrl+Shift+D
		-🖾 Tag006		Port Generator	Ctrl+Shift+P
		- Tag007 - Tag008	1	Tag Generator	Ctrl+Shift+T

Select the port type and input the Port name.

Port Generator			×
Installed Port	Метогу Мар	^	Abcdefig hijklinn opprist avannyz. Ab stravaniz, Abcdefig hijklinn opprist
	Ethernet		Ethernet
	5 EthernetRFID		
	DxpLink		Description Provide the way to communicate with controlers via Ethernet.
	2 COM Library		Internet Protocol
	Ether Net/IP		UDP/IP
	ODBC		
	TOYOPUC Communication Library		
	FZSocket GOT	\mathbf{v}	
Project name	Untitled		New project
Location	C#Users#seigi#Documents#TAKEBISHI#DeviceXPlorer OPC Server 6#Project		✓ Browse_
Device name	Port Name Port 1		
			OK Gancel

The port dialog will appear. Enter the communication parameters and click "Next".

Po	ort Generator				
	Port properties	Por	t properties	t	Machine
	Port Generate Setting		-⊡Se <u>l</u> ect Ada Adapter	apter (Automatic)	
			Explanation		
			Status		DHCP
			IPv4 Address] IPv6 Address

Enter the generation number of Port and Increment value and click "Finish".

Port Generator							
	Port Generate Setting						
Port properties							
r or c proportioo	Port Name	Port 1					
	The generation number of Port	1					
🌳 Port Generate Setting	Setting						
	Adapter Port No						
	Set value	0					
	Increment value	0					
	Target IP Address						
	Set value	169.254.152.194					
	Increment value	0					
	🖃 Target Port No.						
	Set value	5000					
	Increment value	0					
		Cancel < Back Next > Finish					

Item	Description
Port Name	Shows the 1st Port name.
The generation Number of Port	Specify the number of creation between 1 and 255.
Properties	The property which can be configured changes with communication ports. An increase can be specified depending on the Port property.

5.3.7 Dynamic Port

To create port dynamic or to change port properties, SYSTEM device has "\$PortParameter".

Project Explorer 🛛 👻 🕂 🗙	Tag List : SYSTEM 🗙		
	😨 👩 🔎 😰 SYSTEM		
🔊 Project 'Untitled'	Name	Data Type	Location
SYSTEM [MemoryMap]	🐢 \$Off	Bool	SystemTag
SYSTEM	🐢 \$On	Bool	SystemTag
Device (Port [Ethernet]	🚯 \$PortParameter	String	SystemTag
Device I [Mitsubishi MELSEC]	🐢 \$ReadComplete	Bool	SystemTag

Name	Туре	Contents	Data Type	Attributio n
\$PortParameter	Global System Tag	The parameter system tag for port generation.	STRING	R/W

For example, to create Ethernet Port, you write this tag follows.

LibType=Ethernet;Info=Device1Port,2,localhost,0,192.168.19.122,5000,3,3,0,0,0,3,0,1,

This string format is different from Port type. You can get this Parameter string from Property Grid.

Pr		→ # ×		
Po	rt Device1Port	▼		
	2 🛛 🖉 🖉			
	Basic			
	(Port Name)	Device1Port		
	Parameter	LibType=Ethernet;Info=Device	i 1 F	Port,2,localhost,0,192.168.19.122,5000,3,3,0,0,0,3,0,1,
	PING Test	(Action)		
	Select Adapter	Enabled		
	Adapter Name	(Automatic)		
	IP	IPv4		
	T			

5.4 **Devices**

Device has a properties to communicate with target. Select Project View -> Devices to view device information.

🔮 Untitled.dxp - DeviceXPlorer C	OPC Server	*					-		×
File Edit View Project To	ols Help								
🛛 📂 💾 X. 🖻	R N	🔎 🔀 🎾	92 😭	🏷 🗞 🍕) 🔺 🤅	0PC 🧑 斄 🕅	<		
Project Explorer	▼ # ×	Tag List : Device1 🗙			4 ⊳	Property			
		😨 🍙 🔎 😩 Devi	ice1	✓ MelsecEt	thernet	Device Device1			~
Project 'Intitled'		Name	C	Data Type	Location	21 21 2 2	•		
- I SYSTEM		- Tag001	s	hort	D1	Connection Test	(Action)		^
SYSTEM [MemoryMap]		- Tag002	S	Short	D2	 Basic (Device name) 	Device 1		
E- Morel [Mitsubishi MELSE		-🖾 Tag003	5	ihort	D3	Parameter	LibType=N	1elsecEth	ne
Device [Port [Ethernet]		-🖾 Tag004	9	ihort	D4	CPU TYPE	Q		
		-🖾 Tag005	S	hort	D5	Use Block Access C	Disabled		
		-🖾 Tag006	S	hort	D6	Use Q4E Protocol	Disabled		
		-🔂 Tag007	S	hort	D7	Network No.	0		
		- Tag008	S	hort	D8	PU No. Unit Station No.	255		~
		-🖾 Tag009	5	hort	D9				_
Project E SDiagnos St	ructur	<			>				лх
									+ A
			0.17	T 1	A 11 11 11	C 1			
Name	Value		Quality	limestamp	Attribute	Comment			
😪 Message 🎲 Monitor(1) 🧉 🖉	Watch(1)								
Ready				Tag Count	10[Device1]	🐰 Administrator	Moni	torStop [Dec

Important

- A Device name is concerned with the name space accessed from a client. As shown in the above, To access Tag001 in Device1, it becomes the name space "Device1.Tag001."

- There is no restriction on the maximum number of devices.

Since Device properties differ for every device type, for detail, refer to the "User's Guide (PLC Communication Edition)". The following are displayed in Device of MelsecEthernet.

operty [Device1]	Disher	OK
Connection <u>T</u> est		Cancel
CPU TYPE O iQ- <u>R</u> O iQ Use Q4E <u>P</u> rotoc Use Block Acce	-E ◉ OL OQnA OA OFX ol ses Command	Apply
NETWORK Networ <u>k</u> No. PC No <u>.</u> <u>U</u> nit Station No.	0 255 ~ 0	
Unit I/O No.	Multiple CPU System None 1 2 3 4 Redundancy CPU System None Qontrol Ostandby	
Communication CPU <u>m</u> onitoring tim Remote Password	her 10 sec	
ACCESS POINTS Bit R/W Word <u>R</u> /W 96	Bit Poke 188 0 Word Poke 160	

5.4.1 Creating a New Device

Setup steps differ by the case whether select a port or not.

5.4.1.1 Not select a Port

In Project Explorer, nothing is chosen but the "Insert->Device" from a project menu.

📲 Untitled.dxp - De	QP Untitled.dxp - DeviceXPlorer OPC Server*							
File Edit View	roject Tools H	lelp						
i 📝 🔭 💾 I	Project Wizard	Ctrl+W	07 0- 0	0x 0x 🕰 🛵 📸				
	New		🕨 🎾 Port	Ctrl+P				
Project Explorer	Properties	I	Device	Ctrl+D				
📑 🖬 🖬	Set Current Pro	piect as Startup	😭 Group	Ctrl+G				
🔢 Project 'Untitled'		Jett us startup	- 🎯 Tag	Ctrl+T ior				
SYSTEM	Property of Unit	titled Alt+F7	Structure Tag	Ctrl+R G				
📗 👘 🔎 SYSTEM	SYSTEM [MemoryMap] Taq002							

Select the Device and Port type and input Device name and Port name.

New Device						×
Effective licens Mitsubishi M Omron SYSI	MELSEC	Mitsubishi MELSEC	🍠 Ethernet	^	Abcdefg hijklimn opge st uwwn st uwwn, Abcdefg hijklimn op	^
Jtekt TOYO Yokogawa F Hitachi HIDI	PUC A-M3 IC	Mitsubishi MELSEC	Serial		Mitsubishi MELSEC Ethernet	
Sharp SATE Fuji MICRE> Panasonic F	ELLITE X TP	Mitsubishi MELSEC	EZSocket		Develotion	
Yaskawa Mf Keyence KV Toshiba PLC	P / 0	Mitsubishi MELSEC	EZSocket GOT		Provide the way to communicate with Mitsubishi PLC by Ethernet.	
Rockwell Al Siemens SIM	B MATIC	Mitsubishi MELSEC	MELSEC Interface Board		Supported PLC Series	
MTConnect DPRNT com Mitsubishi C	Communication De munication device	Omron SYSMAC	T Ethernet		 iQ-K Series iQ-F Series Q Series 	
Fanuc CNC Kawasaki R	obot Controller	Omron SYSMAC	Serial		L Series FX Series On A Series	
Yamaha Rot IAI program	controller v	Omron SYSMAC	CX-Compolet		Authentic licence	~
<	>	Omron SYSMAC	EtherNet/IP	¥		
Project name	Untitled				New project	
Location	C:¥Users¥seigi¥Docu	uments¥TAKEBISHI¥DeviceXPlore	er OPC Server 6¥Project		✓ Browse	
<u>D</u> evice name	Device1		Port Name Device1Port			
					OK Cancel	

Item	Description
Device Name	Specify Device name for creation.
Port Name	Specify Port name for creation.

According to a wizard, Port Settings, Device Settings, and Device option are Settings.

N	lew Device		
	✤ Port properties	Port properties <u>PING Test</u>	Mashina
	Device properties	⊠Se <u>l</u> ect Adapter Adapter (Automatic)	Macrime
	Device Option	Explanation Status	DHCP
	Device publisher	IPv4 Address	IPv6 Address

Create Port and Device by completing settings.

File Edit Vie	w Project Tools H	Help			
🛛 💋 💾	XBB	1	2	۶ 🖓 🗲	5 8
Project Explorer	→ # >	۲	Tag List : Device1	×	
III 🖾 🖬			😨 🧔 🔎 😫	Device1	
I Project 'Untitled'			Name		Data
SYSTEM [MemoryMap]				
SYSTEM					
Device 1Po	rt [Ethernet]				
Device	T [MITSUDISNI MELSEC]				

5.4.1.2 Select a Port

In Project Explorer, by selecting a port and "New->Device" from a project menu.

Puntitled.dxp - DeviceXPlorer OPC Server*								
File Edit View	Project Tools Help							
i 📝 😂 💾	A	Project Wizard	Ctrl+W		. (a 0- 0- 0- 0-	<u></u>	G I
	New 🕨		<u>مەر</u>	Port	Ctrl+P	- 18 M		
Project Explorer		Properties		۲	0	Device	Ctrl+D	Pro
19 🔟 🛅 🖬		Set Current Project as Startu	0	_	앏	Group	Ctrl+G	Por
🔊 Project 'Untitled'					-96-	Tag	Ctrl+T	ior 🛄
SYSTEM [Mei	-	Property of Untitled	Alt+F7		951	Structure Tag	Ctrl+R	
SYSTEM			g002		00			

Select the Device type and input Device name.

New Device					×
Effective license - Mitsubishi M - Omron SYSM		Mitsubishi MELSEC	💉 Ethernet	^	Abcdefg hijklim opprist uvvvo st uvvroze Abcdefg hijklim op
Jtekt TOYO Yokogawa F Hitachi HIDI	PUC A-M3	Mitsubishi MELSEC	Serial		Mitsubishi MELSEC Ethernet
Sharp SATE Fuji MICRE) Panasonic F		Mitsubishi MELSEC	EZSocket		
		Mitsubishi MELSEC	EZSocket GOT		Description Provide the way to communicate with Mitsubishi PLC by Ethernet.
Rockwell AB	ATIC	Mitsubishi MELSEC	A MELSEC Interface I	Board	Supported PLC Series
- MTConnect - DPRNT com	Communication De imunication device	Omron SYSMAC	🚿 Ethernet		iQ-R Series iQ-F Series Q Series
- Fanuc CNC - Kawasaki Ro	obot Controller	Omron SYSMAC	Serial		L Series FX Series On A Series
Yamaha Rob Yamaha Rob IAI program	controller	Omron SYSMAC	CIP CX-Compolet		→ Authentic licence
<	>	Omron SYSMAC	EtherNet/IP	~	
Project name	Untitled				New project
Location	C:¥Users¥seigi¥Docu	ments¥TAKEBISHI¥DeviceXPlorer	OPC Server 6¥Project		✓ <u>B</u> rowse
Device name	Device2		Port Name Device 1Port		
					OK Cancel

Item	Description
Device Name	Specify Device name for creation.
Port Name	Read-Only.

According to a wizard, Device Settings, and Device option are Settings.

New Device	
Port properties	Device properties Connection <u>T</u> est
Device properties	CPU TYPE
Device Option	Use Q4E Protocol Use Block Access Command
Device publisher	NETWORK
	Network No. 0
	PC No. 255 ~
	Unit Station No. 0

Create Device by completing settings.

File Edit View Project Tools He	lp
📝 📂 💾 🔏 🖻 🖪 1	🍸 😓 🏆 ⋟ 🖓 🤮 🗞
Project Explorer 🔷 🔻 🗙	Tag List : Device2 🗙
	🕼 💋 🔎 🗿 Device2
 Project 'Untitled' SYSTEM [MemoryMap] SYSTEM Device 1Port [Ethernet] Device 1 [Mitsubishi MELSEC] Device 2 [Mitsubishi MELSEC] 	Name Data Typ

5.4.2 Connection Test

The "connection test" is prepared for Device Settings, and it can be checked whether it can communicate.

New Device							
Port properties	Device properties Connection <u>T</u> est						
⇒ Device properties	CPU TYPE						
Device Option	 ○ iQ-<u>R</u> ○ iQ-<u>E</u> ● Q ○ L ○ Q<u>n</u>A ○ A ○ FX □ Use Q4E <u>Protocol</u> □ Use Block Access Command 						
Device publisher	NETWORK						
	Network No. 0						
	PC No. 255 ~						
	Unit Station No. 0						

If you push "connection test" button, the following screens will be displayed and a connection test will be performed.

Connection Test	
Connection Test Start Succeeded to bind(Address=[0.0.0.0], Port=0) Connecting (Address=[192.168.19.186], Port=1025) Ethernet port open complete. Ethernet infor mation:Protocol=UDP Address=localhost Port=0 Address=192.168.19.186 Port=1025 Read D0-D0 point=1 Send(21):500000FFFF03000000000000000000000000000	
<u>R</u> etry <u>Close</u>	

Item	Description	
	Success: Connection Test Success	
	Result: ConnectionTest Success /device=Device1, quality=Good[0xc0]	
Docult	Ethernet port closed.	
nesuit	Error: Connection Test Error	
	Result:	
	ConnectionTest Error /device=Device1, quality=Comm Failure[0x18] Ethernet port closed.	
Retry	Retry Connection Test.	
Close	Close this window.	

Important

- Connection Test may be failed in the situations where communication has already been performed, such as under OPC client connection and Device Monitor. (in exceeding the number connectable simultaneous such as the case which the session of TCP/IP is already established.)

- In Modbus connection, the 1st holding register is used for connection test, and when Modbus controller returns reply message, the Connection test succeeds.(no check for reply message contents)

5.4.3 Changing the Device Name

You can change the device name by either clicking on the device name again once it is selected, or by using the F2 key to enable in-place activation.

* You cannot change to a device name that already exists.

Project Explorer	-	ņ	x
Project 'Untitled' 			
Device 1Port [Ethernet]]		
📑 Project 😪 Diagnos 🧇 Sti	ru	ctu	r

5.4.4 Device Settings

To display Port Setting dialog,

- You select a Device name in Project Explore and select Properties->Device.
- You click Device Jump button on Tag List View.
- You Right-Click and select "Property".

[Project menu]



[Port Jump button]



[Right-Click]



The following screens are displayed in MELSEC Ethernet. For detail, refer to the "User's Guide (PLC Communication Edition)".

Create project	
Port properties	Device properties Connection <u>T</u> est
Device properties	
Tag properties	Use Q4E Protocol
	NETWORK Network No. PC No. Unit Station No. Multiple CPU System Unit I/O No. Redundancy CPU System Redundancy CPU System None Qontrol Standby
	Communication OPU monitoring timer 10 sec Remote Password
	ACCESS POINTS Bit R√W Bit Poke 188 Word B/W 960 Word Poke 160
	Cancel < Back Next > Finish

5.4.5 Device Options

This tab allows you to set proprietary device information that does not depend on the PLC, such as the simulation mode and redundant communication.

evice / Option / Publisher /		OK
Communication Setting Update Rate Discrete Fix Update rate Discrete O Skip communication after retry All tags communication	Simulation Signal	Canc Appl
Slow polling mode Slow Interval 10000 msec Return error immediately.	⊡ D⊻pLink ©ommunication Term 1 min	
<u>R</u> edundant Communication	SuiteLink(D)	
Standby device Standby type Cold Ownerm	Application Name DXPSV6 Topig Name Device1	
Switching Type Auto Rgturn to primay automatically Retry by Both System Switching Condition Tag == CommFailure(0x18)	Other Save Unknown Item Reject Unknown Item Displav System Tag System Tag uses \$ char	

Item		Description			
Con	nmunication Settings	Basic communication setting			
	Update Rate	It is a communication cycle used for SuiteLink, DxpLink , script.			
	Fix Update Rate	Enable to fix 'Update Rate' of Device option. When you don't fix it, DeviceXPlorer communicates by setting in the period when it is most suitable for every tag in the practice period of designation and the script in the update period from OPC client.			
	Max age	The allowed time of the latest value is specified. If 10000msec, it treats as the latest value for 10 seconds. It does not support in SuiteLink and DxpLink.			
	Skip communication after Retry	When a timeout error occurs, DXP Server cancel the transmission and reception of the following communication packet.			
Slov	v polling mode	Enable slow poling mode. When communication error occurs, DeviceXPlorer slows reading period.			
	Slow Interval	Specify the interval in Slow polling mode.			
	Return error immediately	In Slow polling mode, DeviceXPlorer returns error immediately without communicating.			
Red	undant Communication	Enable the Redundancy to switch communication path.			
	Standby device	This is redundancy communication by using standby device/port.			
	Standby type	Cold: When communication trouble occurs, DeviceXPlorer communicates with			
	Cold / Warm	standby device for the first time.			
		Warm: To switch quickly, usually communicate with standby device.			
	Switching Type	Auto: Switching automatically when communication trouble occurs.			
	Auto / Manual	Manual: Switching by System Tag "\$StandBy".			
	Return to primary	In the case of warm standby and Automatic, this can change to a basic system			
	automatically	automatically at the time of the communication return of the basic system.			
	Retry by Both System	Try to connect a standby system in case that failed to connect.			
	Switching Condition	Usually, when timeout occurs and when all retries go wrong, it changes. The change conditions using a tag can be specified by putting in a check			
		Redundancy Switching Condition			
		Switching Cond Target Tag Ouality Image: Switching Cond Image: Swit			
	Port close when switching	Close the port when switching.			
Sim	ulation Signal	Enable simulation.			
	Sin	The simulation value varies with the sine curve.			
	Ramp	The simulation value varies incrementally.			
	Random	The simulation value varies randomly.			
	Shared Memory	The simulation value is maintained statically.			
Dxp	JLink	Enable to DxpLink			
	Communication Term	Specify the communication term(min) which is communication time after DxpLink client requests.			
Suit	eLink	Enable the SuiteLink interface.			
	Application Name	Shows the currently set SuiteLink application name.			
	Topic Name	Allows you to set a topic name of your choice for each device.			
Oth	er	Other settings			
	Save Unknown Item	Automatically registers tag, which is registered from the client, to the Tag View.			

Reject Unknown Item	Rejects dynamic tags.
Display System Tag	Shows system tags.
System Tag uses \$ char	Uses the "\$" sign at the beginning of system tags.

5.4.6 Device Publisher

]Enable Publisher		
WriterGroup		
PublishInterval	1000	msec
KeepAliveTime	1000	msec
WriterGroupId	1	
DataSetWriter		
DataSetWriterId	1	

Item		Description
Enable Publisher		Enable publishing.
Writ	terGroup	-
	PublishInterval	Set the publishInterval. The shortest cycle is 50ms.
	KeepAliveTime	Set the KeepAliveTime.
	WriterGroupId	Set the WriterGroupId. Set WriterGroupId that does not suffer from other devices.
Dat	aSetWriter	-
	DataSetWriterId	Set the DataSetWriterId.

*Please contact us if you wish to use a publisher.

5.4.7 Changing Ports

To change a port assigned to a device, select a device node in the Project Explorer, show the pop-up menu, and click "Port Change...".



The available ports will appear. Select the port you wish to change to.

Changing port	
<u>S</u> elect Port:	
Device1Port [Ethernet]	
Device2Port [Ethernet]	
Same port type only	
	OK Cancel

If there is no check in the "Same type of port" checkbox, all the ports will be shown and it will be possible to change to a port of a different type.

Changing port	
Select Port:	
Device1Port [Ethernet]	
Device2Port [Ethernet] Device3Port [Serial]	
Same port type only	
	OK Cancel

Important

If you change to a port of a different type, the information set for the device and the tag will be lost.

5.4.8 Device Generator

The package generation of the port setup can be carried out. It can start from a project menu to the Insert ->Device Generator.

📲 Untitled.dxp - Devic	ceXPlorer OPC Server*					
File Edit View P	roject Tools Help					
i 📝 🖂 🛄 🏼	Project Wizard	Ctrl+W	. ()a 💁 💁 👧	05 🙉 La	G
	New	Þ	<u>مەر</u>	Port	Ctrl+P	2
Project Explorer	Properties	+	9	Device	Ctrl+D	Þ
🔢 🖾 🛅	Set Current Project a	s Startun	8	Group	Ctrl+G	
📑 Project 'Untitled'		Startop		Tag	Ctrl+T	ior
	Property of Untitled	Alt+F7	9,5	Structure Tag	CtrI+R	
Device 1 [Mitsub	ishi MELSEC]	- Tag002	ВQ-	Method	Ctrl+M	
Device 1Port	[Ethernet]	- Tag003	-	Device folder	Ctrl+I	
		- Tag004	24			
		Tagoos	缏	Device Generator	Ctrl+Shift+D	
		- Tag000	Č.	Port Generator	Ctrl+Shift+P	11
		- Tag007	10	Tag Generator	Ctrl+Shift+T	
				Short	D9	- 1

Select the device and port type and input the Device name and Port name.

Device Generator							\times
Effective license Mitsubishi M Omron SYSN	IELSEC	Mitsubishi MELSEC	🍠 Eth	nemet	^	Abcdefg hijklimn opprist uswin st underga Abcdefg hijklimn o	^
Jtekt TOYO Yokogawa F Hitachi HIDI	PUC A-M3 C	Mitsubishi MELSEC	ser Ser	rial		Mitsubishi MELSEC Ethernet	
Sharp SATE Fuji MICRE> Panasonic F		Mitsubishi MELSEC	EZ:	Socket			
Yaskawa MF Keyence KV Toshiba PLC		Mitsubishi MELSEC	EZ:	Socket GOT		Description Provide the way to communicate with Mitsubishi PLC by Ethernet.	
Rockwell AE Siemens SIM	B MATIC	Mitsubishi MELSEC	🦧 МЕ	LSEC Interface Board		Supported PLC Series	
	Communication De imunication device	Omron SYSMAC	🍼 Eth	nemet		 tQ-R Series iQ-F Series Q Series 	
Fanuc CNC Kawasaki Ro	abot Controller	Omron SYSMAC	Ser 🖋	rial		L Series FX Series On A Series	
Yamaha Rob 	oot controller controller v	Omron SYSMAC	CIP CX	-Compolet		✤ Authentic licence	~
<	>	Omron SYSMAC	📥 Eth	nerNet/TP	× [
Project name	Untitled					New project	
Location	C:¥Users¥seigi¥Docu	ments¥TAKEBISHI¥DeviceXPlo	rer OPC Server 6¥Projec	et		V Browse	
<u>D</u> evice name	Device2		<u>P</u> ort Name	Device 1Port			
						OK Cancel	

Generation wizard steps differ by the case whether select a port or not.

	Not selected Port	Select Port
1	Port Properties	(none)
2	Device Properties	Device Properties
3	Device Option	Device Option
4	Device Generate Settings	Device Generate Settings
5	Port Generate Settings	(none)

Device Generator		
	Device Generate Setting	
Device properties	Common	
	Device name	Device2
Device Option	The generation number of Device	1
Deutice publisher	E PC No.	055
Device publisher	Set value	200
	Increment value	0
🌳 Device Generate Settine		
		Cancel < Back Next > Finish

Enter the generation number of Device and Increment value and click "Finish".

Item	Description
Device Name	Shows the 1st Device name.
The generation Number of Device	Specify the number of creation between 1 and 255.
Properties	The property which can be configured changes with device type. An increase can be specified depending on the Port property.

5.4.9 Dynamic Device

To create device dynamic or to change device properties, SYSTEM device has "\$DeviceParameter".

Project Explorer 🛛 🔻 🕈 🗙	Tag List : SYSTEM 🗙			<			
💽 💵 🐨 🗃	😨 💣 🔎 🗿 SYSTEM	😨 💣 🔎 🎒 SYSTEM 👻 SystemDevice					
	Name	Data Type	Location	Value (
È ^I IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	\$Clock2000	Bool	SystemTag	Off			
SYSTEM [MemoryMap]	<pre>\$Clock500</pre>	Bool	SystemTag	Off			
Device1 [Mitsubishi MELSEC]	🐢 \$ClockHour	Bool	SystemTag	Off			
Device (Port [Ethernet]	🐢 \$ClockMin	Bool	SystemTag	Off			
	🐢 \$Day	ULong	SystemTag	13 (
	🚯 \$DeviceParameter	String	SystemTag	(
	🚯 \$DiagCode	ULong	SystemTag	0 0			
	🐢 \$Diagnosis	Bool	SystemTag	Off			
	🚯 \$DiagSubCode	ULong	SystemTag	0 0			
	🐢 \$DumpCom	Bool	SystemTag	Off			
	🐢 \$DumpDde	Bool	SystemTag	Off (

Name	Туре	Contents	Data Type	Attributio n
\$DeviceParameter	Global System Tag	The parameter system tag for device generation.	STRING	R/W

For example, to create device1, you write this tag follows.

LibType=MelsecEthernet;Port=Device1Port;Info=Device1,4,0,15360,960,188,160,0,0,255,0,1023,10, #OPTION#,0,0,0,1,Device1,1000,0,0,1,1,0,0,0,0,0,10000,0,1,1,1,1,0,D1,0,0,24,0,1,1,1,1

This string format is different from Device type. You can get this Parameter string from Property Grid.

Pr	operty	▼.	д Х
De	evice Device1		-
	2 2 2 2 2 2 2 2 2 2		
Co	onnection Test	(Action)	
-	Basic		
	(Device name)	Device1	
	Parameter	LibType=MelsecEtherne	e 🗐
	CPU TYPE	ibType=MelsecEthernet;Port	=Devic
	Use Block Access Com	Disabled	
	Use Q4E Protocol	Disabled	
	Network No.	0	
	PC No	255	

5.5 Groups

A Group is a unit which manages tags. Select Project View -> Groups to view group information.

👽 Untitled.dxp - DeviceXPlorer OPC Server	*				_	
File Edit View Project Tools Help						
🗹 📂 💾 X 🖻 🖪 🍿	📃 💽 ⋟ 🧐 😭	8 % R 🕄	4	🖗 🔅 🥳 🙀	¥ 💷	
Project Explorer 🛛 🔻 🕈 🗙	Tag List : Group1 🗙			Property		
	😨 👩 🗩 😰 Device 1.Group 1	MelsecEthen	net	Group Group1		~
Project 'I Intitled'	Name	Data Type	Locatior	2. 🔝 2 🛛 2	#	
ia Indject Grinnes	- 🐼 Tag001	Short	D1	🖃 Basic		^
SYSTEM [MemoryMap]	- Tag002	Short	D2 D3	(Group Name)	Group1	
🚊 🗐 Device1 [Mitsubishi MELSEC]	- Tag003	Short		(Deviceiname) Accessing to Intellig	Disabled	
Device 1Port [Ethernet]	- Tag004	Short	D4	Unit No	n N	
Group 1	- Tag005	Short	D5	Buffer offset	0	
	- Tag006	Short	D6	Unit I/O Offset	0	
		Short	D7	Unit type		
		Short	D8	Import tags from PX	Disabled	
		Short	D9	PX Developer Projec		•
		Short	D10			
Project E 💫 Diagnos 🧇 Structur	<		>			

Important

- A Group name is concerned with the name space accessed from a client. As shown in the above, To access Tag001 in Group1 of

Device1, it becomes the name space "Device1.Group1.Tag001."

-There is no restriction on the number of groups.

Usually, Group has only name. But some devices have properties.

Since Group properties differ for every device type, For detail, refer to the "User's Guide (PLC Communication Edition)".

[Only Group name] Shared memory etc.

New Group						
→ Group properties	Group properties Group Na <u>m</u> e:	Group1				

[Some properties] MelsecEthernet etc.

New Group						
→ Group properties	Group properties Group Na <u>m</u> e: Group1 Accessing to Intelligent Function Module					
	Unit No. 0 Unit <u>T</u> ype	~				

Group can be freely created by a layered structure to a Device subordinate.

File Edit View Project Tools He	lp			
2 📂 💾 X 🖻 🖬 1) 🔎 💽 ≽ 🧐	🎦 🗞 🇞 🤐 🕻	🔅 🕹 🌔	🗯 🏀 орс
Project Explorer 🛛 👻 🕂 🗙	Tag List : Group1 🗙			
	😨 💣 🔎 🗿 Device 1.Gro	up2.Group1		
Project 'Untitled'	Name	Data Type	Location	Value
E SYSTEM	- Tag000	Short	D0	
SYSTEM [MemoryMap]	- Tag001	Short	D1	
Device1 [Mitsubishi MELSEC]	- Tag002	Short	D2	
Device (Port [Ethernet]	- Tag003	Short	D3	
Group1	- Tag004	Short	D4	
- a Group 2	- Tag005	Short	D5	
Group1	- Tag006	Short	D6	
Group3	- Tag007	Short	D7	
🖻 📷 Group2	-🔂 Tag008	Short	D8	
Group 1	- Tag009	Short	D9	
Project 🧏 Diagnos 🗇 Structur	I III			

5.5.1 Creating a New Group

From the Projects menu, select Insert-> Group.



The Group dialog will appear. Enter the Group name and other properties and click "Finish".

١	lew Group		
	→ Group properties	Group properties Group Na <u>m</u> e:	Group 1
		<u>U</u> nit No. Unit <u>T</u> ype	0

5.5.2 Changing the Group Name

You can change the group name by either clicking on the group name again once it is selected, or by using the F2 key to enable in-place activation.



Note

It is necessary to set a name that is not duplicated within the same layer.

5.5.3 Group Settings

To display Group Setting dialog,

- You select a Group name in Project Explore and select Properties->Group.
- You click Group Jump button on Tag List View.
- You Right-Click and select "Property".

[Project menu]

Untitled.dxp - DeviceXPlorer OPC Server*							
File Edit View	Proje	ect Tools Help					
i 📝 😂 💾 I	۵.	Project Wizard Ctrl+	w	🕨 🖓 💁 9	a. 96		
		New	•				
Project Explorer		Properties	►	Port	L		
🔢 🖾 📷		Set Current Project as Startun		Device	<u> </u>		
📑 Project 'Untitled'	1			Group	:a Type		
SYSTEM	2	Property of Untitled Alt+I	F7	Tag	prt		
SYSTEM [MemoryMap]							

[Group Jump button]



[Right Click]

Project Explorer	-	ά×	Tag List :			
🗊 🖬 🖬 🖬			12 🚮 .			
Project 'Untitled'	Name					
SYSTEM [MemoryMap] 						
	New		•			
	Port Change					
6	Paste	Ctr	rl+V			
Û	Delete	De	lete			
	Expand All					
	Collapse All					
Project 🔾 🗸	Show Port Alwa	ays				
Message	Statistics					
L No	Event Script	Ct	rl+E pe			
	Property	Alt+E	nter			

The group dialog will appear. Enter the communication parameters and click "OK". For detail, refer to the "User's Guide (PLC Communication Edition)".

Property [Group1]			
Group			ОК
Accessing to Intelliger	t Function Module		Cancel
Unit No. 0			Apply
Unit <u>T</u> ype		/	
Import tags from PX I	Developer		

5.5.4 Deleting Group

To delete Group

- You select a Group name in Project Explore and select Edit->Delete.
- You Right-Click and select "Delete".



If you select delete, DeviceXPlorer delete the group and tags which exist under the group.



Important

- It cannot delete, when the tag in a group is communicating.

5.6 Device Folder

A Device Folder is a unit which manages devices.

Untitled.dxp - DeviceXPlorer OPC Serve	r*						-		×
File Edit View Project Tools Hel	p								
🛛 📂 💾 X 🖻 🖻 🎙	🚬 💇 ⋟	역 않 !	ଚ୍ଚ 🗫 😵 🍕) 🚣 🤅	Ö 🕷 🕯	OPC 🚿			
Project Explorer 🔷 🗸 🗙	Tag List : Device2 🗙			4 ⊳	Property				- 4 ×
III 🔟 🛅	🖳 💋 🔎 🛐 Devi	ce2	✓ MelsecEt	thernet					~
Project 'Untitled'	Name	C	Data Type	Locatior	₿ Ż 🖌 🛃	12 🖾 🔎			_
E SYSTEM									^
SYSTEM [MemoryMap]									
📄 🗐 Device 1 [Mitsubishi MELSEC]									
Pevice 1Port [Ethernet] Group 1									
🖃 🗐 Device3 [Mitsubishi MELSEC]									
Device3Port1 [Ethernet]									
🖮 🗐 Device2 [Mitsubishi MELSEC]									*
Ethernet]									
Project E 🔏 Diagnos 🗇 Structur	<			>					
Watch(1)									- 4 ×
🔎 💦 🐵 🗊									
Name Value		Quality	Timestamp	Attribute	Comment				
Message 💯 Monitor(1) 🞯 Watch(1)									
Ready			Tag Count	0[Line1]	adı 🔒 🔒	ninistrator	Moni	torStop	[Dec

Important

- Device Folder does not be concerned with the name space.

Device Folder has only name.

N	ew Device folder		
	Device Folder	Device Folder Folder Na <u>m</u> e:	DeviceFolder1

Device Folder can be freely created by a layered structure to a Device subordinate.

Project Explorer	▼ # ×	Tag List : Device3 🗙	
II		😨 💋 🔎 😰 Devices	3
📧 Project 'Untitled'		Name	Data 1
⊨		-🖾 Tag	Short
SYSTEM [MemoryMap]			
Ener I En			
Device 1 [Mitsubishi Metaeo]			
Group 1			
iare 1_SubLine 1			
📄 🗐 Device3 [Mitsubishi MELSEC]			
Device3Port1 [Ethernet]			
□ □···· □ Line2 □··· □ Device2 [Mitsubishi MELSEC]			
Device2 [missibisii metoto]			
Project Explorer 🧏 Diagnostics 🗇 Structure Ten	nplate	< III	

Important

-There is no restriction on the number of Device Folders.

5.6.1 Creating a New Device Folder

From the Projects menu, select Insert-> Device Folder.

Untitled.dxp - DeviceXPlorer OPC Server*				
File Edit View Project Tools Help	_			
🛛 🏹 📂 🛄 🍇 Project Wizard 🛛 Ctrl+W		0a 0- 0- 0-	. 🙉 🙆 🗽	6
New	>	Port	CtrI+P	3
Project Explorer Properties	•	Device	Ctrl+D	⊳
📑 🔊 📅 🔂	1	Group	Ctrl+G	
Project 'Untitled'	- 20	Tag	Ctrl+T	ior
SYSTEM Property of Untitled Alt+F7	82	Structure Tag	Ctrl+R	
SYSTEM [MemoryMap]	DQ.	Method	CtrI+M	
evice1 [Mitsubishi MELSEC]	9	Device folder	Ctrl+I	
🥏 Device 1 Port [Ethernet]	_			4
Group1	1	Device Generator	Ctrl+Shift+D	
📄 🖳 Device3 [Mitsubishi MELSEC]	Ċ	Port Generator	Ctrl+Shift+P	
Device3Port1 [Ethernet]	ditte.	Tag Cenerator	Ctrl+Shift+T	11
English Inter	401	lag Generator	Curronner	1
Device 2 [Witsubishi MELSEU]				

The Device Folder dialog will appear. Enter the Device Folder name and click "Finish".

٢	lew Device folder		
	→ Device Folder	Device Folder Folder Na <u>m</u> e:	DeviceFolder1

5.6.2 Changing the Group Name

You can change the group name by either clicking on the group name again once it is selected, or by using the F2 key to enable in-place activation.



Note

It is necessary to set a name that is not duplicated within the same layer.

5.6.3 Deleting Device Folder

To delete Device Folder

- You select a Device Folder in Project Explore and select Edit->Delete.
- You Right-Click and select "Delete".



If you select delete, DeviceXPlorer delete the group and tags which exist under the Device Folder.

DeviceXPlorer	×
Are you sure you war	nt to remove this Device folder ?
	<u>Y</u> es <u>N</u> o

Important

- Even if it deletes a Device Folder, the Device of contents, Groups and Tags are not deleted.

5.7 **Tags**

Project Explorer 🔷 🔻 🗙	Tag List : Device1 >	<						
	😨 🖾 🔎 🗿 De	😨 🖾 🔎 🎒 Device 1 🗸 Melsec Ethernet						
IIII Project '無題'	Name	Data Type	Location	Value	Quality	Timestam		
🖨 🗐 SYSTEM	- Tag000	Short	D0	3296	Good (C0h)	2012/04/20		
SYSTEM [MemoryMap]	- Tag001	Short	D1	3296	Good (C0h)	2012/04/20		
Device1 [Mitsubishi MELSEC]	- Tag002	Short	D2	3296	Good (C0h)	2012/04/20		
Device (Port [Ethernet]	- Tag003	Short	D3	3296	Good (C0h)	2012/04/20		
	- Tag004	Short	D4	3296	Good (C0h)	2012/04/20		
	- Tag005	Short	D5	3296	Good (C0h)	2012/04/20		
	- Tag006	Short	D6	3296	Good (C0h)	2012/04/20		
	-🕾 Tag007	Short	D7	3296	Good (C0h)	2012/04/20		
	- Tag008	Short	D8	3296	Good (C0h)	2012/04/20		
	-🕾 Tag009	Short	D9	3296	Good (C0h)	2012/04/26		

Tags define names and attributes of each register of the PLC and are used by the client to access data.

5.7.1 Dynamic Tags and Static Tags

A tag that is defined in advance on DeviceXPlorer is called a "static tag". Using a static tag allows you to attach a different tag name to the tag, as shown below, and to change the scale conversion settings. You can check the properties of static tags in the Tags tab of the Property View.

Tag List : Device1 🗙			۵
😨 💣 🔎 🗿 Device	:1	✓ Melse	Ethernet
Name	Data Type	Location	Value
- Recipe	String	D0:S10	
-🕾 Tag1	Short	D100	
- TIC001_CV	Long	D200:D	
- TIC001_SV	ULong	D202:DU	
- Valve001	Bool	X1FF	

It is also possible to access data easily without tag definition. Tags that are not defined in advance are called "dynamic tags". Dynamic tags are accessed by entering the DeviceXPlorer device name plus the PLC register name. In the below figure, the value from data register "D0" is obtained from the PLC set as "Device1".

Project Explorer 🗸 🕂 🗙	Tag List : Device1 🗴	< evice1				→ Me	elsecEthe	d Þ rnet	Prop
IIII Project ' 無題 ' ⊖	Name	Data Type	Location	Value	Quality		Timest	tamp	
Device 1 [Mitsubishi MEL		File OPC	Opc /iew Help						
		⊡ Takebishi.	Dxp.5	TagName		Value		Quality	Time
		Group()	Device1.D	0	4320		0xC0	04/2
				Device1.M	0	On		0xC0	04/2
				Device1.R	1234	4216		0xC0	04/2
				Device1.S	M400	On		0xC0	04/2

Important

DeviceXPlorer has no restriction on the number of tags, so it is necessary to ensure that the CPU performance and memory are high enough to accommodate the system (number of tags) you are using. If the number of PLCs is more than 50 or if the total number of tags is over 100,000, we recommend that you distribute the load to the DeviceXPlorer across several PCs.

5.7.2 Creating a New Tag

From the Projects menu, select New -> Tag.

📲 Untitled.dxp - Device	eXPlorer OPC Server*					
File Edit View Pro	oject Tools Help					
i 📝 🚧 🥅 🔺	Project Wizard	Ctrl+W		20 0 0	05.05 🙆 🗔	C
	New	•	<u>م</u>	Port	Ctrl+P	280
Project Explorer	Properties	•	9	Device	Ctrl+D	
III 🔟 🌆 🔟	Set Current Project a	as Startun	8	Group	Ctrl+G	
📑 Project 'Untitled'		is startup	- @-!	Tag	Ctrl+T	ior
📔 🗐 SYSTEM 🛛 🔤	Property of Untitled	Alt+F7	R 51	Structure Tag	Ctrl+R	
SYSTEM [men	noryMapj	-🔂 Tag002	Ď.	Mathead	Chill M	
		- Tag003	m.A.	Method	Ctri+M	
Device1 [Mits	ubishi MELSEC]	- Tag 004	-	Device folder	Ctrl+I	
Device 1Po	ort [Ethernet]	- Tag005	n.	Davisa Canasata	Christen D	
Device 2 [Miter	ubiaki MELSECI	- Tag 006	제문	Device Generato	or Cur+Shirt+D	
Devices [Mits	utishi MELOEOJ	- Tag 007	\$	Port Generator	Ctrl+Shift+P	
Line2	art Ergenened	- Tag008	1	Tag Generator	Ctrl+Shift+T	
📄 📲 🗐 Device2 [Mits	ubishi MELSEC]			Short	D9	- I.

Set the tag parameters and click "Next".

v Tag						
	Tag properties					
Tag properties	Tag Na <u>m</u> e	Tag	D0			
Tag Scaling		🗌 Auto <u>F</u> ormat				
	Description					
Tag Simulation	<u>D</u> evice Type	D ~	Data Register			
Tag Alarm	Device No	0	Block No.	0		
	Da <u>t</u> a Type	SHORT \sim	Byte <u>P</u> osition	Lower Byte \sim		
Tag publisher	<u>L</u> ength	1	Bit Position	0		
	Byte S <u>w</u> ap		Attribute	ReadWrite \sim		
	Array		Calc <u>u</u> lation	NONE ~		
			Cancel	< <u>B</u> ack	<u>N</u> ext >	Finish

To perform scale conversion, place a check in the box for "Scale Conversion", "Simulation" and "Alarm "set the parameters.

< Scale Conversion>

New Tag			
Tag properties	Tag Scaling		
🌳 Tag Scaling	Raw <u>M</u> in	0	
Tag Simulation	Raw M <u>a</u> x	1000	
Tag Alarm	Scaled M <u>i</u> n Scaled Ma <u>x</u>	0	
Tag publisher	<u>U</u> nits		
	Conversion	● Linear ○ Square Root	O Powe <u>r</u> factor Default Scale

<Simulation>

New Tag	
	Tag Simulation
lag properties	Simulation Signal
Tag Scaling	● <u>S</u> ine
⇒ Tag Simulation	⊖ Ram <u>p</u>
	◯ <u>R</u> andom
Tag Alarm	◯ S <u>h</u> ared Memory
Tag publisher	

<Alarm>

New Tag					
Tag properties	Tag Alarm				
	<u>A</u> larm Comment				
Tag Scaling	Level Alarm			Deviation Alarr	n
Tag Simulation	HiHi	Value 0	Priority	S <u>t</u> andard value	0
	High	0	1		%DV
🌳 Tag Alarm	L <u>o</u> w	0	1		0
Tag publisher	LoLo	0	1	High DV	0

5.7.3 Changing a Tag Name

Select the tag name you want to change from the Tag List and open the Properties screen from the pop-up menu.

Tag List : Device1 🗙			4 ⊳
😨 🖾 🔎 🗿 Device	1	~	MelsecEthernet
Name		Data Type	Location
- Tag001		Short	D1
-🔂 Tag002		New	•
-🔂 Tag003	1	Tag Generator	Ctrl+Shift+T
-🔂 Tag004			
-🖾- Tag005	đb	Cut	Ctrl+X
-🖾- Tag006	Сору		Ctrl+C
-🔂 Tag007	Paste		CtrI+V
-🔂 Tag008	Delete		Delete
-🔂 Tag009			
-🔂 Tag010		Expand All	
		Collapse All	
<		Add To Watch	
		Value Format	•
		Properties	Alt+Enter
0		Show Array Viewe	er
		Write Value to Tag	9

Property of Tag	001 [D1]
General Sca	le Simulation Alarm Publisher
Tag Na <u>m</u> e	Tag001 D1
Des <u>c</u> ription <u>D</u> evice Type Device N <u>o</u> Da <u>t</u> a Type <u>L</u> ength	D Data Register 1 Block No. SHORT Byte Position 1 Bit Position
☐ Byte S <u>w</u> a ☐ Arra <u>v</u>	p Attribute ReadWrite Calculation NONE
New	Sa⊻e ≤< >≥ OK Cancel

This will allow you to change the set tag name to a name of your choice.

Note

It is necessary to set a name that is not duplicated.

5.7.4 Properties (General)

This tab allows you to set properties such as the tag name and data format.

Property of	f Tag001	[D1]								
General	Scale	Simulation	Alarm	Publisher						
Tag Na <u>r</u>	<u>n</u> e	Tag001	ormat	D1						
Descrip	tion			Data Daviatas						
Device Device	N <u>o</u>	1	~	Block No.		0				
Da <u>t</u> a Ty Length	pe	SHORT	~	Byte <u>P</u> osition Bit Position		Lower Byte	\sim			
Byte	е S <u>w</u> ap У			Attribute Calculation		ReadWrite NONE	~			
New		Sa <u>v</u> e			≫			ОК	Cancel	

The dialog settings for MELSEC Ethernet are as shown in the table below.

The settings vary for each PLC; for details, see the User's Guide (PLC Communication Edition).

Item		Description		
Togram	Specify a tag name	if you want to attach a different name for the PLC device.		
Tag name	The access format	for dynamic tags is shown to the right of the tag name.		
Automatic format	Automatically gene	erates a tag name.		
Comment	Allows you to add a	a comment to the tag name.		
Device type	Specify a type of th	e PLC device to be accessed.		
	Specify the device	number.		
Device number	Depending on the	e device type, the device number is entered in either decimal or		
hexadecimal notation.				
Block number	Specify a block nur	nber if you have specified extended file register (ER) as the device type.		
	Select a data type.			
	BOOL:	Logical		
	BYTE:	8-bit signed integers		
	UBYTE:	8-bit unsigned integers		
	SHORT:	16-bit signed integers		
	USHORT:	16-bit unsigned integers		
Data type	LONG:	32-bit signed integers		
	ULONG:	32-bit unsigned integers		
	FLOAT:	32-bit real numbers		
	LONGLONG:	64-bit signed integers		
	ULONGLONG:	64-bit unsigned integers		
	DOUBLE:	64-bit real numbers		
	STRING	Character string		
	Specify the size if y	ou have specified a character string or an array.		
	Character string:	If "1" is specified, the space for one word is occupied.		
	Array (BOOL):	If "1" is specified, the space for one word (16 bits) is occupied.		
Size	Array (BYTE):	If "1" is specified, the space for one word (2 bytes) is occupied.		
	Array (SHORT):	If "1" is specified, the space for one word is occupied.		
	Array (LONG / FL	OAT): If "1" is specified, the space for two words is occupied.		
	Array (LONGLON	G/DOUBLE):		
		If "1" is specified, the space for four words is occupied.		

Item	Description			
Byte position	If the BYTE type is selected, select either high or low byte.			
Bit position	If you specified BOOL as the data type, specify the bit position.			
	Specify a tag attribution.			
Attailantion	ReadWrite: Reading and writing possible			
Attribution	ReadOnly: Read only			
	WriteOnly: Write only			
	[BCD calculation]			
System coloulation	If the data type is BYTE, SHORT, or LONG, you can perform BCD calculation.			
System calculation	[Binary/octal/decimal/hexadecimal text type]			
	If the data type is STRING, you can select any format.			
Dute amonning	To swap the high byte for the low byte, place a check in this box.			
Dyte swapping	This is enabled for the SHORT or LONG data types.			
Array	Place a check in this box to define the tag as an array.			

5.7.5 **Properties (Scale Settings)**

Set the scale settings to convert values received from the PLC to engineering values.

Property o	f Tag001 [[D1]							
General	Scale	Simulation	Alarm	Publisher					
	Scaling								
F	Raw <u>M</u> in Raw M <u>a</u> x	0	000						
s	icaled M <u>i</u> n icaled Ma <u>x</u>	0)						
Ŀ	Inits								
c	Conversion	۲	<u>L</u> inear	() <u>S</u> qu	are Root	O Powe <u>r</u> Default	factor Scale		
Nev	V	Sa <u>v</u> e		_<<	≫			OK	Cancel

Item	Description
Enable scale conversion	Place a check in this box to implement scale conversion processing.
Pre-conversion – Min.	Enter the minimum value of the value range that can be obtained from the PLC.
(M)	
Pre-conversion – Max.	Enter the maximum value of the value range that can be obtained from the PLC.
(A)	
Post-conversion - Min.	Enter the minimum effective value.
(M)	
Post-conversion – Max.	Enter the maximum effective value.
(A)	
Engineering unit	Specify this if you are setting a unit.
Conversion method	Specify "linear" or "square root" or "Power factor" as the conversion method.

Note

- The OPC DA dead band function is effective for tags for which scale conversion is set.

- If the values obtained from the PLC exceed the pre-conversion range, the quality flag will be 0x50 (Engineering Unit Exceeded).

- The tag's data type before conversion is ignored and it becomes 64 bit floating point type (DOUBLE type).

5.7.6 Properties (Simulation)

Enable simulation settings if you want to return values of your choice without communicating with the PLC.

Property of Tag001 [D1]	
General Scale Simulation Alarm Publisher	
☑ Simulation Signal	
● <u>S</u> ine	
⊖ Ram <u>p</u>	
◯ <u>R</u> andom	
⊖S <u>h</u> ared Memory	
<u>N</u> ew Sa <u>v</u> e ⊴<	>> OK Cancel

Item	Description
Enable simulation	Perform simulation by tag.
Sine	Returns values that make a sine curve.
Ramp	Returns values that increase in increments of 1.
Random	Returns random values.
Shared memory	Returns static values. Values written from the client are maintained.

5.7.7 Properties (Alarm)

With the value acquired from PLC with an OPC A&E interface, alarm and when carrying out event surveillance, an alarm setup is performed.

Alarm I Alarm I Level Alarm Value Priority HiHi 90 1 High 80 1 Low 40 1 Low 40 1 Deadband 0 1 Ratio Alarm Standard value 0 Ogadband 0 1 Digcrete Alarm Event Type Simple Event Change 10 % / sec Caurae by Opf(TELE)
--

	Item	Description					
Alarm Comr	nent	Specify the Alarm comment.					
	LoLo/Low/High/HiHi	Select Enable or Disable.					
Lorral	Value	Specify the threshold value.					
Alorm	Priority	specify the priority.					
Alarin	Deadband	Set the deadband of level Alarm. If a current value returns more than deadband,					
		e alarm restores.					
Patio	Change	Set the change ratio (percentage) per standard time.					
Alorm	Unit	Select the time unit "Sec" or "Min" or "Hour"					
Alarin	Priority	Specify the priority.					
Standard value		Specify the standard value.					
Doviation	Low DV	Specify the deviations from Standard value.					
Alorm	High DV	Specify the deviations from Standard value.					
Alarin	Deadband	Set the deadband of Deviation Alarm. If a current value returns more than					
		deadband, the alarm restores.					
	Event Type	This alarm can be defined only in BOOL tag.					
Discrete		Select "Single Event" or "Tracking Event" or "Condition Event".					
Alarm	Occurrence	Select the alarm occurrence, "On" or "Off"					
	Priority	Specify the priority.					

Note

- To configure Level alarm, Ratio Alarm and Deviation Alarm, the Tag's scale conversion should be defined.

- To configure Discrete alarm, the Tag can be defined as BOOL.

5.7.8 Properties (Publisher)

Specify the Publisher setting.

roperty of Ta	ag001 [D1]						
General S	Scale Simul	ation Alarm	Publisher				
☑ Ena FieldId	A277C8C6	- DA25	- 4013	- 83E30D	8ECFC4BB90	Update	
<u>N</u> ew	Sa <u>v</u> e		_<	≫	OK	Cancel	

Item	Description
Enable	Select Enable or Disable.
FieldId	The subscriber specifies this FieldId and gets the value.
	Click the Update button if you need to change it.

5.7.9 Saving Settings

Save settings by clicking the "Save" button or clicking the "OK" button and closing the dialog.

5.7.10 Adding Tags Continuously

If you click the "Save" button and then the "New" button in succession, the device number will be automatically incremented.

5.7.11 Tag Generator

Using the tag generator allows you to generate tags of a particular format at once.

📲 Untitled.dxp - D	eviceXPlore	r OPC Server*				
File Edit View	Project	Tools Help		-		
: 📝 😂 💾 I	🔔 Proje	ct Wizard	Ctrl+W	5	<u>a 🕞 🗞 (</u>	<u>> </u>
	New		•	<u>مح</u>	Port	Ctrl+P
Project Explorer	Prope	erties	۲.	2	Device	Ctrl+D
III 🖾 🛅	Set C	urrent Project	as Startup	6	Group	Ctrl+G
📑 Project 'Untitled'					Tag	Ctrl+T ioi
	Prope	erty of Untitled	I Alt+F7	>	Structure Tag	Ctrl+R
Line1	Liviemory Maj	PJ	- Tag002	.	Method	Ctrl+M
i⊒li∰ Device1 [Mitsubishi I	MELSEC]	- Tag003	-	Device folder	Ctrl+l
Devic	e1Port [Ethe 1	ernet]	- Tag005	12.	Device Constator	Ctrl+Shift+D
Device3 [Mitsubishi I	MELSEC]	-🖾 Tag006	제문	Device Generator	Ctrl+Shift+D
📜 🖉 Devic	e3Port1 [Etł	hernet]	-🔂 Tag007	3mt	Port Generator	Ctri+Shift+P
📄 🖶 🌍 Line2			-🔂 Tag008	ð	Tag Generator	Ctrl+Shift+T
📄 🖳 👰 Device2 [Mitsubishi I	MELSEC]	-🖾 Tag009		Short	D9

Note

The number included in the tag name and the device number are automatically incremented.

[Operation]

(1) Set the base tag information.

	se tag mio	mation.				
Tag Generator						
	Tag properties					
Iag properties	Tag Na <u>m</u> e	Tag 1	D1			
Tag Scaling		Auto <u>F</u> ormat				
	Description]	
Tag Simulation	Device Type	D ~	Data Register]	
Tag Alarm	Device No	1	Block No.	0]	
rag marm	Da <u>t</u> a Type	SHORT \sim	Byte Position	Lower Byte \sim		
Tag publisher	<u>L</u> ength	1	Bit Position	0]	
T 0 . 0	Byte S <u>w</u> ap		Attribute	ReadWrite \sim		
Tag Generate Setting	Array		Calc <u>u</u> lation	NONE \sim		
]			(0.1	N	
			Gancel	< <u>B</u> ack	<u>N</u> ext >	Finish

(2)To perform scale conversion, place a check in the box for "Scale Conversion", "Simulation" and "Alarm "set the parameters.

Tag Generator			
Tag properties	Tag Scaling		
🌳 Tag Scaling	Raw <u>M</u> in	0	
Tag Simulation	Raw M <u>a</u> x	1000	
Tag Alarm	Scaled M <u>i</u> n Scaled Ma <u>x</u>	0	
Tag publisher	<u>U</u> nits		
Tag Generate Setting	Conversion	● Linear ○ Square Root	O Powe <u>r</u> factor Default Scale
(3) Set the number of tags to be generated at once and the increase step.

Tag Generator		
Tag properties	Tag Generate Setting	
Tag Scaling	Start Location	Tag001
Tag Simulation	Generate <u>C</u> ount	10
Tag Alarm	<u>D</u> igit	3 ☑ Zero Supply
Tag publisher		
⇒ Tag Generate Setting		

Item	Default	Description
Start Location	(Base Tag Name)	The base tag name is shown.
Generate Count	10	Specify the count which will be generated.
Increase step	1	Specify the increment by which to increase the device number.
Ignore Data Size	OFF	Ignores the data type and increases the device number in increments of 1.
Digit	9	Specify the digit of auto-generated tag name in Zero Supply.
Zero Supply	OFF	Please check if the tag name need zero supply.

Note

If an automatically generated tag name already exists, a serial number is attached after the tag name.

Tag List : Device1 🗙			
📳 💋 🔎 🛐 Device1			
Name	Data Type	Location	1
-🐼 Tag001	Short	D1	
-🔂 Tag002	Short	D2	
-🔂 Tag003	Short	D3	
🗠 Tag003 (1)	Short	D3	
-🖾 Tag004	Short	D4	
-🖾 Tag005	Short	D5	
-🔂 Tag006	Short	D6	
-🔂 Tag007	Short	D7	
-🔂 Taq008	Short	D8	

For example, if you generated 10 tags from Tag001, and Tag003 already exists, the generated tag will become "Tag003 (1)" as shown above.

5.7.12 Extended Tag Name Specification

If you are not registering tag information in advance but are registering and accessing items dynamically, specify the device name and data type as extended specification. For extended specification, follow the rules listed below.

Extended		
specificatio	Description	Note
n		
No	Bit device: Logical type	
Specificatio n	Word device: 16-bit signed integers	
:00::15	Logical	
:L	8-bit signed integers	
LU	8-bit unsigned integers	Cannot specify for bit devices.
:Н	8-bit signed integers	
HU	8-bit unsigned integers	
:W	16-bit signed integers	
:WU	16-bit unsigned integers	
:D	32-bit signed integers	
DU	32-bit unsigned integers	
R	32-bit real numbers	
·I	64-bit signed integers	
IU	64-bit unsigned integers	
:DR	64-bit real numbers	
:В	Integer BCD conversion	
:OR	Read-only	
OW	Write-only	
:A99999	Array	
:S99999	Character string	D1.S5 = "ABCDEFGHIJ"
:F99999	File Batch Write	D1:F5="C:¥test.txt"
:B99999	Binary text	D1.B2 = "1111111111111110000111100001111"
:099999	Octal text	D1.O5 = "1,1234,77777,0,177777"
:D99999	Decimal text	D1.D5="1,2,32767,-32768,0"
:H99999	Hexadecimal text	D1.H5 = "1234FFFF99990000ABCD"
:V	Bit inverse	
BL	Boolean conversion	Only some models correspond.
SS	Simulation mode(Sin)	
SD	Simulation mode(Shared Memory)	
SI	Simulation mode(Ramp)	
SR	Simulation mode(Random)	

Note

To use a combination of more than one extended specification, you can use a colon as a separator. For example, a write-only 32-bit unsigned integer array would be specified as "D1:DU:OW:A100".

5.7.12.1 No Specification

If you are not using extended specification, the standard data type is the 16-bit signed integer for word devices and the logical type for bit devices.

Example: For MELSEC, the No. 1000 data register is "D1000", and the link relay No. 1F is "B1F".

5.7.12.2 Specifying the Bit Position (:nn)

If you specify a separator and bit position at the end of a tag name, it can be handled as if it were the logical type. Example: The 0th bit of D1 is "D1:0" and the 15th bit of D1 is "D1:15".

Note

Only certain PLCs can write to these tags.

5.7.12.3 **Byte Type (:L, :LU, :H, :HU)**

By specifying a low byte and a high byte, you can treat the register value as an 8-bit signed or unsigned integer. Example: In "D1:H", the higher 8 bits of D1 are accessed as an integer.

5.7.12.4 Word Type (:W, :U, :WU)

The register value is treated as a 16-bit signed or unsigned integer. Example: In "D1:WU", D1 is accessed as an unsigned integer.

5.7.12.5 **Long Type (:D, :DU**)

The register value is treated as a 32-bit signed or unsigned integer. Example: In "D1:D", D1 and D2 are accessed as a 32-bit signed integer.

5.7.12.6 LongLong Type (:I, :IU)

The register value is treated as a 64-bit signed or unsigned integer. Example: In "D1:I", D1 – D4 are accessed as a 64-bit signed integer.

5.7.12.7 Single Precision Real Number Type (:R)

The register value is treated as a 32-bit real number. Example: If the two words of D1 and D2 contain "0x42F6CCCD", "D1:R" is read as "123.4".

5.7.12.8 Double Precision Real Number Type (:DR)

The register value is treated as a 64-bit real number. Example: If the two words of D1 – D4 contain "0x40FE240C9FBE76C9", "D1:DR" is read as "123456.789".

5.7.12.9 BCD Type (:B)

The register value (BCD value) is converted to BIN value when it is read, and when it is written, the written value (BIN value) is converted to BCD value. If BIN conversion is not possible (when reading is not possible), the quality flag will be "0x54" (Engineering Units Exceeded), and the value will be undefined. If BCD conversion is not possible (when writing is not possible), an error will be returned and the value will not be written.

Example: If 1234 (hexadecimal) is contained in D1 and "D1:B" is read, "1234 (decimal)" will be returned.

Example: If "5678 (decimal) is" written to "D1.B", "5678 (hexadecimal)" will be written.

5.7.12.10 Read-only/Write-only (:OR, :OW)

The read-only tag attribution can be used to prevent inadvertent writing. In addition, if there are many tags that do not require reading, you can use the write-only tag to improve performance. Example: "D1:OR" allows read-only accesses to D1.

5.7.12.11 Array (:A99999)

If you add a separator and specify the number of elements after the tag name, the tag will be treated as an array-type tag. Array-type tags perform batch-access to a PLC, which optimizes the communication time.

Example: D1:A10 accesses D1 - D10 as a 16-bit integer array with 10 elements.

Example: D1:D:A64 accesses D1 - D64 as a 32-bit integer array with 64 elements.

Note

- If the number of elements exceeds the batch R/W points, the synchronicity of the data will not be maintained.

- The maximum number of elements is 65535.

5.7.12.12 **String**(:**S99999**)

If you specify "S99999" (with 99999 being the number of registers to access), the register value is treated as a character string.

Example: If D0=0x4241, D1=0x4443, D2=0x4645, D3=0x4847 and D4=0x4A49, if "D0:S5" is accessed, the character string "ABCDEFGHIJ" is obtained.

Note

If the number of elements exceeds the batch R/W points, the synchronicity of the data will not be maintained.
The maximum number of elements is 65535.

5.7.12.13 File Batch Write(:F999999)

By specifying "F999999" (9999 is between 1 and 65535) behind a tag name, the contents of the text file can be written in at once.

You create CSV (comma separated form) file, and writes the path (full path) of a text file in a tag at the time of writing. If it reads, the written-in file path is acquirable.

Example:

You write CSV file path (full path) to"D0:F5", DeviceXPlorer write values between D0 and D4 by the head of the data of the CSV file.

5.7.12.14 Text Format Binary Type (:B99999)

If you specify "B:99999" after the tag name, the register value can be treated as a text format binary type. When requesting writing, if the value to be written contains something other than numbers (0 - 1), that value and subsequent values will be ignored.

Example: If D0=0xF0F0, accessing "D0:B1" obtains the character string "1111000011110000". Example: If "111a0000" is written to "D0:B1", "111" is written.

Note

- If the number of elements exceeds the batch R/W points, the synchronicity of the data will not be maintained.

- The maximum number of elements is 65535.

5.7.12.15 **Text Format Octal Type (:O99999)**

If you specify "O99999" after the tag name, the register value can be treated as a text format octal type. When requesting writing, if the value to be written contains something other than numbers (0 - 7), that value and subsequent values will be ignored.

Example: If D0=123, D1=99, and D2=1, accessing "D0:O3" obtains the character string "173,143,1". Example: If "135790" is written to "D0:O1", "1357" is written.

Note

If the number of elements exceeds the batch R/W points, the synchronicity of the data will not be maintained.
The maximum number of elements is 65535.

- The maximum number of elements is 65535.

5.7.12.16 Text Format Decimal Type (:D99999)

If you specify ":D99999" after the tag name, the register value can be treated as a text format decimal type. When requesting writing, if the value to be written contains something other than numbers (0 - 9), that value and subsequent values will be written as "0".

Example: If D0=123, D1=99, and D2=1, accessing "D0:D3" obtains the character string "123,99,1".

Example: If "9,a,8" is written to "D0:D3", the value is written as D0=9, D1=0, and D2=0.

Note

- If the number of elements exceeds the batch R/W points, the synchronicity of the data will not be maintained.

- The maximum number of elements is 65535.

5.7.12.17 Text Format Hexadecimal Type (:H99999)

If you specify "H99999" after the tag name, the register value can be treated as a text format hexadecimal type. When requesting writing, if the value to be written contains something other than numbers (0 - 9), that value and subsequent values will be written as "0".

Example: If D0=0x123 and D1=0x10, accessing "D0:H2" obtains the character string "01230010".

Example: If "98765X" is written to "D0:H3", the value is written as D0=0x9876, D1=5, and D2=0.

Note

- If the number of elements exceeds the batch R/W points, the synchronicity of the data will not be maintained.

- The maximum number of elements is 65535.

the table below shows the scale conversion matrix for each text format.						
Binary	Octal	Octal Decimal		Hexadecimal		
0	0	0	0	0		
11111111	377	255	255	FF		
111111111111	7777	4095	4095	FFF		
0111111111111111	77777	32767	32767	7FFF		
1000000000000000	100000	-32768	32768	8000		
11111111111111111	177777	-1	65535	FFFF		

The table below shows the scale conversion matrix for each text format.

5.7.12.18 Bit Inverse

If you specify ":V" after the tag name, DeviceXPlorer inverse Boolean value. Example:If M0="False", accessing "M0:V" obtains the "True".

5.7.12.19 Boolean conversion

If you specify "BL" after the tag name, DeviceXPlorer converts to Boolean . If value is 0, the tag is False(Off). Otherwise if value is not 0, the tag is True(On). Example: If Field1 is set value 123, "Field1:BL" is True(On). Example: If Field1 is set value 0, "Field1:BL" is False(Off).

5.7.12.20 Simulation mode (Sin)

If you specify "SS" after the tag name, DeviceXPlorer treats the Tag as a simulation(Sin) tag.

5.7.12.21 Simulation mode (Shared Memory)

If you specify "SD" after the tag name, DeviceXPlorer treats the Tag as a simulation(Shared memory) tag.

5.7.12.22 Simulation mode (Ramp)

If you specify "SI" after the tag name, DeviceXPlorer treats the Tag as a simulation(Ramp) tag.

5.7.12.23 Simulation mode (Random)

If you specify "SR" after the tag name, DeviceXPlorer treats the Tag as a simulation(Random) tag.

5.7.13 System Tags

5.7.13.1 Global System Tags

The following system tags are valid for DeviceXPlorer as a whole. These system tags are in SYSTEM device. (Access example: SYSTEM.\$Clock1000, SYSTEM.\$TagCount)

Name	Tag name	Туре	Attribu	Note
X 7 · · · O · · ·	φ τ τ :	tion		
Version information	\$Version	VT_BSTR	R	Ex: "Version 4.0.0.1"
License status	\$License	VT_BOOL R		License Activated: FALSE
T · 1			D	DEMO or STOP mode TRUE
License mode	\$LicenseMode	VT_BSTR	K D	Show current license mode
License edition	\$LicenseEdition	VT_BSTR	K D	Show current license edition
Clock (100 ms)	\$Clock100	VT_BOOL	ĸ	Repeats 50 ms on followed by 50 ms off.
Clock (200 ms)	\$Clock200	VT_BOOL	R	Repeats 100 ms on followed by 100 ms
(1 + 1) (700 + 1)	¢01-1 ×00		Ъ	Repeats 250 ms on followed by 250 ms
Clock (500 ms)	\$CIOCKDUU	VI_BOOL	к	off.
Clock (1000 ms)	\$Clock1000	VT_BOOL	R	Repeats 500 ms on followed by 500 ms
Clock (2000 ms)	\$Clock2000	VT_BOOL	R	Repeats 1 second on followed by 1 second off
				Repeats 30 seconds on followed by 30
Clock (1 min.)	\$ClockMin	VT_BOOL R		seconds off.
Clock (1 hour)	\$ClockHour	VT BOOL	R	Repeats 30 minutes on followed by 30
		VI_DOOL	10	minutes off.
				Ring counter that increments every
Heartbeat	\$HeartBeat	VT_UI4	R	second
				(can check that server is operating)
Always ON	\$On	VT_BOOL	R	
Always OFF	\$Off	VT_BOOL	R	
Self-diagnosis error	\$Diagnosis	VT_BOOL	R	On while error is occurring
Self-diagnosis error code	\$DiagCode	VT_UI4	R/W	The last error code that occurred.
Self-diagnosis sub error code	\$DiagSubCode	VT_UI4	R/W	The last detail error code that occurred.
Clock data (hour)	\$Hour	VT_UI4	R	
Clock data (minute)	\$Min	VT_UI4	R	
Clock data (second)	\$Sec	VT_UI4	R	
Clock data (millisecond)	\$Msec	VT_UI4	R	Stores the PC's time data
Date data (year)	\$Year	VT_UI4	R	
Date data (month) \$Month		VT_UI4	R	
Date data (day)	\$Day	VT_UI4	R	
				If TRUE is written, the log message is
Log save implementation flag	\$SaveLog	VT_BOOL	R/W	saved, and it is changed to FALSE after
				the request is received.
				Can specify both absolute and relative
				paths.
Log saving file name	\$LogFile	VT_BSTR	R/W	If there is no specification (NULL), it is
				saved in the
				YYYYMMDDHHMMSS.CSV format.

Name	Tag name Type		Attribu	Note		
			tion			
Script Log flag	\$DumpScript	VT_BOOL	R/W	Corresponds to View -> Script		
Construction of two on flags	¢DCom		DAV	Corresponds to		
Sentreceived trace hag	\$DumpCom	VT_BOOL R/W		View -> Communication data		
DxpLink trace flag	\$DumpDxpLink	VT_BOOL	R/W	Corresponds to View -> DxpLink		
SuiteLink trace flag	\$DumpDDE	VT_BOOL	R/W	Corresponds to View -> SuiteLink		
OPC access log flag	\$DumpOpc	VT_BOOL	R/W	Corresponds to View -> OPC Access		
Trace type flag (INFO)	\$TraceInfo	VT_BOOL	R/W	Outputs an INFO message		
Trace type flag (WARNING)	\$TraceWarning	VT_BOOL	R/W	Outputs a WARNING message		
Trace type flag (ERROR)	\$TraceError	VT_BOOL	R/W	Outputs an ERROR message		
Trace type flag (ERROR)	\$TraceFatalError	VT_BOOL	R/W	Outputs an ERROR message		
Connected clients	\$ClientCount	VT_UI4	R	Number of connected clients		
Client errors	\$ClientErrors	VT_UI4	R	Number of clients experiencing error		
Connected groups	\$GroupCount	VT UI4	R	Number of OPC groups and SuiteLink topics that are being		
				accessed from outside		
Group errors	\$GroupErrors	VT_UI4	R	Number of groups experiencing		
Total tags	\$TagCount	VT_UI4	R	Total number of active tags		
Tag errors	\$TagErrors	VT_UI4	R	Number of tags experiencing errors		
Port Parameter	\$PortParamter	VT_BSTR	R/W	Dynamic Port. Refer to 5.3.7.		
Device Parameter	\$DeviceParameter	VT_BSTR	R/W	Dynamic Device. Refer to 5.4.9.		
				By writing TRUE, DeviceXPlorer		
				resets		
Reset Statistical Information	\$ResetStatisticalTags	VT_BOOL	R/W	the follow system tags.		
				\$ElapseMin,\$ElapseMax,\$Elapse,\$Error		
				Counts, \$SendCount, \$RecievedCounts		

5.7.13.2 Device System Tags

The following system tags are valid for individual devices. These system tags are in each device. (Access example: Device1.\$Status, Device2.\$Simulate)

Name	Tag name	Туре	Attri butio n	Note
Communication status	\$Status VT_BOOL		R/W	Communicating: TRUE, Stopped: FALSE In simulation mode, it is free to change the value of this tag.
Message/communication errors	\$ErrorCounts	VT_UI4	R	Number of errors that have occurred
Messages sent	\$SendCounts	VT_UI4	R	Number of messages sent
Messages received	\$ReceivedCounts	VT_UI4	R	Number of messages received
Max. number of batch R/W of bit device	\$BitRWRange	VT_UI4	R	Maximum number of batch R/W of bit device
Max. number of batch R/W of	\$WordRWRange	VT_UI4	R	Maximum number of batch R/W of word
word device	\$ReadRange	VT_UI4	R	device
Max. number of points for random write of a bit device	\$BitWRange	VT_UI4	R	Maximum number of points for random write of a bit device
Max. number of points for random write of a word device	\$WordWRange	VT_UI4	R	Maximum number of points for random write of a word device
Redundant communication standby status	\$Standby	VT_BOOL	R/W	Active system when redundant communication is used Communicating on primary device: FALSE Communicating on secondary device: TRUE
Simulation status	\$Simulate	VT_BOOL	R/W	Running in simulation mode: TRUE Communicating with PLC: FALSE
Communication port name	\$PortName	VT_BSTR	R	Port name
Lap time (current)	\$Elapse	VT_UI4	R	The time required for the communication.
Lap time (minimum)	\$ElapseMin	VT_UI4	R	If more than one OPC group is accessing
Lap time (maximum)	\$ElapseMax	VT_UI4	R	the device at once, the lap time is set for each group.
Communication load rate (%)	\$ElapseRate	VT_UI4	R	Current lap time ÷ update interval x 100 (%)
Update Rate	\$DeviceUpdateRate	VT_UI4	R/W	Update rate for defined in Device Option.
Simulation type	\$SimulationType	VT_UI4	R/W	Simulation mode 0:Sin 1:Ramp 2:Random 3:Shared Memroy
Slow Polling Mode	Slow Polling Mode \$SlowpollingMode		R/W	TRUE:Slow Polling FALSE:Normal
Connection Test	\$ConnectionTest	VT_BOOL	R	Execute "Connection Test". Refer to 5.4.2
Primary device Communication Status	\$PrimaryStatus	VT_BOOL	R/W	Primary device Communicating: TRUE, Stopped: FALSE
Standby device	\$SecondaryStatus	VT_BOOL	R/W	Standby device

Communication		Communicating: TRUE, Stopped: FALSE
Status		

5.7.13.3 Connection System Tags

The following system tags are valid for individual connections. These system tags are in each connection. These system tags' value is different per connection. (Access example: SYSTEM\$UpdateInterval, SYSTEM\$Elapse)

Name	Tag name Type		Attri butio n	Note
Update interval	\$UpdateInterval	VT_UI4	R/W	The current update interval. If you specify "0", communication will stop.
Error code	\$ErrorCode	VT_UI4	R	The last error code that occurred.
Error text	\$ErrorText	VT_BSTR	R	The text of the last error that occurred.
Message/communication errors	\$ErrorCount	VT_UI4	R	Number of errors that have occurred
Messages sent	\$SendCount	VT_UI4	R	Number of messages sent
Messages received	\$ReceivedCount	VT_UI4	R	Number of messages received
Write status	\$WriteComplete	VT_BOOL	R	"0" when a write request is received and "1" when write processing is finished (successfully completed/failed).
Read status	\$ReadComplete	VT_BOOL	R/W	"1" when all active tags are read, returning to "0" when a tag is added, and then becoming "1" again when that tag is read. When "0" is written from a client, it becomes "1" again after all reading is complete.
Registered tags	\$ItemCount	VT_UI4	R	Number of registered tags
Number of active tags	\$ActiveItemCount	VT_UI4	R	Number of active tags
Number of error tags	\$ErrorItemCount	VT_UI4	R	Tags with quality flags other than "good".
Messages	\$MessageCount	VT_UI4	R	Total number of read/write messages
Read requests	\$PollNow	VT_BOOL	R/W	Refreshes (rereads) all tags as soon as "1" is written. Valid even when "0" is set as the update interval.
Lap time (current)	\$Elapse	VT_UI4	R	
Lap time (minimum)	\$ElapseMin	VT_UI4	R	The time required for the communication
Lap time (maximum)	\$ElapseMax	VT_UI4	R	
Communication load rate (%)	\$ElapseRate	VT_UI4	R	Current lap time ÷ update interval x 100 (%)

Note

In the time of client unit communication invalidity (default configuration), only the following 4 connection tags can be available.

- \$UpdateInterval

- \$ItemCount

- \$ActiveItemCount

- \$ErrorItemCount

5.7.14 Tag Monitor

The current value of static tags can be monitored from the DeviceXPlorer screen regardless of whether or not there is access from a client.

[Operation]

Select "Device Monitor" or "Cache Monitor" from the View menu.

File	Edit	View	Project	Tools	Help					-		
	23	Ν	Ionitor			۲	📃 Device Mo	nitor	F3	h 05	20	Ø
)fflin a				🛃 Cache Mo	nitor	F4			
Project	Explore		mine				× + ^	lag List : S	INTEM	×		
	1 📷 1	S	tatistics					12 🖾 🔎	• 🔊	SYSTEM		

Item	Description
Device monitor	Communicates with the PLC and monitors live data.
Cache monitor	Does not communicate with the PLC but monitors cached values in DeviceXPlorer.
	The values of only the tags currently accessed by clients are updated.

When tag monitoring is performed, the current values and information such as the quality flags appear on the screen.

Untitled.dxp - DeviceXPlorer OPC Server*					
File Edit View Project Tools Help					
701 💾 👗 🖻 🖷 🍿	📃 💇 🎾 🧐	🎦 🎭 🇞 🍣	🚣 🏟 🗭	орс 🚿	\$ 💷
Project Explorer 🛛 👻 🕂 🗙	Tag List - Davical - Manitar (F2)			
III 🖂 🌀	Monitor Tag value	es from device			
📑 Project 'Untitled'	Name	Data Type	Location	Value	Quality
SYSTEM	- Tag001	Short	D1	1	Good (C0h)
SYSTEM [MemoryMap]	- Tag002	Short	D2	2	Good (C0h)
Device1 [Mitsubishi MELSEC]	- Tag003	Short	D3	0	Good (C0h)
Device (Port [Ethernet]		Short	D4	8874	Good (C0h)

Note

The update interval when the device monitor function is used is value of Monitor Rate in "Common Properties, General".

5.7.15 Offline Mode

If DeviceXPlorer shifts to off-line mode, it will stop performing communication with target modules entirely, and will process with the cache value which it has in the inside.

If DeviceXPlorer shifts to this mode, the processing to a client etc. will also be affected.

📲 Untitled.dxp - I	DeviceXPlorer OPC Server*					
File Edit Vie	w Project Tools Help					
10	Monitor	上 🖉 🏂 😭	8 🗞 🗞 😵	🔔 🏟 🇭	🦝 OPC 🔗	K 💷
Project Explore	Offline	List : Device1 🗙				
🔢 🖬 🖬 1	Statistics	👩 🔎 🛐 Device1				~
📑 Project 'L	Message View Icon Filter	• ne	Data Type	Location	Value	Quality
📄 🗐 SYST	Message View Text Filter	☑ Tag001	Short	D1	1	Good (C0h)
S	Deves Messee Disales	№ Tag002	Short	D2	2	Good (C0h)
	Pause Message Display	№ Tag003	Short	D3	0	Good (C0h)
	Window	▶ 🖙 Tag004	Short	D4	8874	Good (C0h)
	Tool Par	☑· Tag005	Short	D5	-1234	Good (C0h)
	1001 041	☑· Tag006	Short	D6	10000	Good (C0h)
Devic 🗹	Status Bar	Sr Tag007	Short	D7	1234	Good (C0h)

A confirmation message is displayed when shifting to off-line mode.



During Offline Mode execution, it is displayed on a lower right status bar as "Offline Monitoring".

administrator	Offline Monitoring [Decimal]	🔌 Connected	æ

Important

If DeviceXPlorer shifts to Offline Mode, it stops performing communications processing entirely with target modules. When you shift during system running, be careful enough.

5.7.16 Write Tag Value

During tag monitoring, you can write value to a tag. You select the tag, and select "Write Value to Tag...".

Name	Data Type	Location	Value	Quality
-🔂 Tag001	Short	D1	lew	
-🔂 Tag002	Short	D2 🚜 👖	a Constator	Ctrl - Shift - T
-🔂 Tag003	Short	D3 🤷 "	ag Generator	Ctri+Shirt+1
-🖾 Tag004	Short	D4 🐰 o	Cut	Ctrl+X
-🖾- Tag005	Short	D5	onv	Ctrl+C
-🖾 Tag006	Short	D6	.opy	cui+c
-🔂 Tag007	Short	D7 P	aste	Ctrl+V
-🖾 Tag008	Short	D8 D	Delete	Delete
-🖾 Tag009	Short	D9		
-🖾 Tag010	Short	D1 ⁵	xpanu Ali	
		C	Collapse All	
		A	dd To Watch	
		V	/alue Format	
		P	Properties	Alt+Enter
		S	ihow Array Viewer	
		v	Vrite Value to Tag	

Since the follows dialog is displayed, You input a write value and click "OK". DeviceXPlorer will write the value to target module.

Write Value to Tag001,	
I	OK
Number Format: Decimal 🗸 🗸	Cancel

Note

"GUI->Writing Tag value From GUI" needs to be "Permit Writing" of Project Properties(5.13.6).

5.7.17 Watch

The watch function allows you to dynamically monitor the current values of tags if you drag & drop the tags you want to monitor from the Tag View.

File Edit Minus Designt Te	ala Uala						
File calt view Project To	oois Heip						
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				<u>م (</u>	वृ 😭 🄕) 🎭 🤏 🤅	🙊 🔅 🚣 🌔
Project Explorer	▲ ů ×	Tag List : D	evice	e1 x			4
🗊 🖾 🖬 🖬		12 🖾 🖊	> 8) Devic	e1		➡ MelsecEthernet
🔢 Project 'Untitled'		Name			Data Type	Location	Value
SYSTEM		-🔂 Tag	000		Short	D0	324
SYSTEM [MemoryMap]		- Tag	001		Short	D1	324
🖃 🦉 Device1 [Mitsubishi MELSEC]		-🔂 Tag	002		Short	D2	324
Device IPort [Ethernet]	-	- 🔂 Tag		New		•	324
Bevice? [Mitsubishi MELS]	FC1	-🔂 Tag	(*	Tag Ge	nerator	Ctrl+Shift+T	324
Device2Port1 [Ethernet		-🔂 Tag					324
📄 🗐 Device3 [Mitsubishi MELSI	EC]	- 🔂 Tag	de la	Cut		Ctrl+X	324
		-🔂 Tao		Сору		Ctrl+C	324
Project E 😪 Diagnost 🍫 S	itructure	•		Paste		CtrI+V	+
Watch(1)			Ð	Delete		Delete	🗕 t
🔎 🐼 🐟 🗓				Add To	Watch		
Name	Value			_			Comment
Device1.Tag001	324			Value F	ormat	•	
						Alta Fatas	

It is also possible to monitor dynamic tags by directly entering the tag names.

Watch(1)				→ # ×
📃 👽 🐵 🎁				
Name	Value	Quality	Timestamp	Comment
Device1.M0	On	Good (C0h)	2012/05/1:19	
Device1.M0:V	Off	Good (C0h)	2012/05/1:19	
Device1.Tag002	29	Good (C0h)	2012/05/1:19	
Device1.D1234	30	Good (C0h)	2012/05/1:19	

You can also save the tag list registered for the watch function in a file using the pop-up menu.



Note			
If you register an inappropriate t	ag, "N/A" will appear.		
Watch(1)			
۱۱ 📀 🛃			
Name	Value	Quality	Timestamp
Device1.DE	N/A		
Device1.M0:V	Off	Good (C0h)	2012/05/1

5.7.18 Array Viewer

Array Viewer is the function for monitor tag value of array.

Please select "Show Array Viewer" from right-click menu or select tag and push Ctrl + Enter key, so the Array Viewer will show.



You can check the tag value and write value by "Write".

If you write the value, please change the value and push "Write" button.

Element	Value	Write Value	
0	68		
1	68		
2	68	324	
3	68		
4	68		
5	68	245	
6	68		
7	68		
8	68		
9	68		

Item	Description
Value / Copy	Show the tag value. Copy button copies the values to clipboard.
Element	The number of the element.
Value	Show the target tag's value.
Write Value	Edit each writing values.
Clear Write Values	Clear all writing values.
Write	Write the value to the target tag.

5.7.19 Register Monitor

Register Monitor allows you to monitor the memory values on target module. Register Monitor can be started from View->Window->Monitor->Monitor(1)



The monitor windows are the following windows.

Monitor(1)				▼.	φ×
📃 Regis	ter	Device SYSTE	M 🔹		
Register	FEDC BA98 7654	3210	Value		
Or Message	💣 Watch(1) 🧖 Mor	nitor(1)			

Item	Description
Device	Specify the target Device
Register	Specify register(memory name) in the target module.

Important

Register Monitor becomes a monitor function for PLC drivers.

The models (for example, ODBC Client, DDE Client etc.) which don't have register area cannot use this function.

You select a device, and input register name, and press Enter Key. Register monitor will start. For example, in MELSEC, if D0 is inputted into a register, it can monitor as follows.

Project Explorer		→ џ ×	Tag Li	t : Device1 🗙			4 Þ
🗐 🖾 🖬 🖬	5			🛭 🔎 👔 Dev	ice1 👻	MelsecEthernet	t
🔲 🛄 Project 'Un	titled'		Nam	e	Data Type	Location	v
SYSTEI	м		-23	Tag000	Array of Shorts	D0:A10	5
📗 📃 🦾 🗩 SYS	STEM [Memo	ryMap]					
📄 👰 Device	1 [Mitsubishi	MELSEC]					
Dev 🖉 Dev	vice 1 Port LEt	hernetj					
Gro	up I 1. [Mitoubiobi	MELSEC1					
Device.	/ice2Port1 [F	thernet]					
Device:	3 [Mitsubishi	MELSEC]					
📗 🗍 🛴 🗩 Dev	/ice3Port1 [E	thernet]					
		1.0	J				
Project E	상 Diagnost.	🍫 Structure					- F
Monitor(1)							- 4 ×
Registr	er Díl	Devic	e Device	1 -	ן		
		Devic	C Device	•	J		
Register	FEDC BA98	3 7654 3210		Valu	le		^
DO	0000 0000	0011 0010			50		
D1	0000 0000	1100 1000		21)0		
D2	0000 0000	0100 0010			56		_
D3	0000 0000	0000 0000			0		
D4	0000 0000	0000 0000			0		
D6	0000 0000	0000 0000			0		
D7	0000 0000	0000 0000			0		
D8	0000 0000	0000 0000			0		
D9	0000 0000	0000 0000			0		
D10	0110 0111	0110 0111		264	71		
D11	0000 0000	0000 0000			0		-
😪 Message 🛛	🖉 Watch(1)	🧭 Monitor(1)					

The following things can choose a register monitor with a right-click menu.

Monitor(1)			
📃 Regist	er D0	Device Device1	•
Register	FEDC BA98 7654 3	3210	Value
D0 D1 D2	0000 0000 001 0000 0000 110 0000 0000 0	Display	BYTE(B) UBYTE(Y)
D3 D4 D5	0000 0000 000 0000 0000 000 0000 0000	Multi-register(B)	SHORT(S) USHORT(H)
D6 D7	0000 0000 000 0000 0000 000	Write Value	LONG(L) ULONG(O)
D8 D9 D10	0000 0000 0000 0000 0	000	
D11		000	FLOAT(F)
😪 Message 🮯 Watch(1) 🧖 Monitor(1) Ready			DOUBLE(U) ASCII(A)

Item				I	Descript	tion				
Display	Select data typ	e for dis	play.							
Hexadecimal	Display values	s in hexa	decimal							
Multi-register	Many registers	s are sho	wn as b	elow. (Th	is is 8 p	oints p	er line)			
	Monitor(1)								~	
	📃 Register D0	0	Device	Device 1	•					
	Register	+0 +	1 +2	+3	+4	+5	+6	+7		
	D0	50 20	0 66	0	0	0	0	0		
	D8	0	0 26471	0	0	0	0	0		
	D16	0	0 0	0	0	0	0	0		
	D24	0	0 0	0	0	0	0	0		
	D32	0	0 0	0	0	0	0	0		
	D40	0	0 0	0	0	0	0	0		
	D48	0	0 0	Û	0	Û	0	0		
	Monitor(1) Register D0	0	Device	Device 1	•					
	Desister	.0 .1				7 .0				
	Register	+0 +1	+2 +3	+4 +0	+0 +	-7 +8	+:	,		
	DU	50 200	00 U	0 0	0	0 0		1		
	D10 204	0 0	0 0	0 0	0	0 0		,		
	D20	0 0	0 0	0 0	0	0 0		,		
	D40	0 0	0 0	0 0	0	0 0		,		
	D50	0 0	0 0	0 0	0	0 0		, 1		
	D60	0 0	0 0	0 0	ů Ú	0 0		, 1		
	D70	0 0	0 0	0 0	ů Ú	0 0		, 1		
	D80	0 0	0 0	0 0	0	0 0	(
Write Value	Input a Write V	Value ar	ld write	Register.						
	Write Value to			×						
	White Value	_								
	<u>w</u> rite value									
	<u>R</u> egister	DØ								
	Format of White	s leun	рт							
	Torniac of write									
		Deci	mal	•						
		OK) <u> </u>	ancel						

5.8 Method Tag

You can create a method tag with script processing.

If you write value is to a method tag, DeviceXPlorer executes the script logic of Method Tag.

5.8.1 Creating a New Method Tag

From the Tag List menu, select New -> Method.

	Tag List : Device1 🗙									
	😨 💋 🔎 🛐 Device1 🔹						Melsec	MelsecEthernet		
	Name	Data Type	Location	Value		Quality		Timesta		
I	- Tag001	Short	D1							
I	-🕾 Tag002	s New			- Tag		Ct	rl+T		
	- Tag003	s 🍪 🛛 Tag Genera	itor	Ctrl+Shift+T	褖 Stru	cture Tag	Ctr	I+R		
I	-🔂 Tag004	\$ V		C 1 1 V	🎭 Met	hod	Ctrl	+M		
	- Tag005	di Cut		Ctrl+X						

Edit script.

💷 Metho	d Script				
Name	MethodTag	Period	500	ms	🔽 Run
Script					
1	Please implement the behavior.				
•					÷.
		C	ок	Cance	Apply

Item	Description
Name	Specify the Method Tag name.
Period	Specify the update rate for refresh tag's cache value which used in script.
Run	If you execute script, Check the box.
Script	Programing. Refers to *****

5.8.2 Execute Method Tag

You create a Method tag like follows.

Method Script						
Name	MethodTag	Period 500				
Script						
1	Please implement the behavior.					
2	local tag1 = @@t("Tag000");					
3	local tag2 = @@t("Tag001");					
4						
5	tag1.Value = tag2.Value;					

Project Explorer 🛛 👻 🕈 🗙	Tag List : Device1 🗙						
	😨 🚁 🔊 Device 1						
📑 Project 'Untitled'	Name	Data Type	Location	Value			
i in the system in the system in the system is the system	MethodTag	Method	Method				
SYSTEM [MemoryMap]	-🔂 Tag000	Short	D0				
Device1 [Mitsubishi MELSEC]	- Tag001	Short	D1				
Device 1Port [Ethernet] Group 1	-🖾 Tag002	Short	D2				
aroup 1							

If a value is written in from a client to this tag, the script will be performed.

VcSampleOpc			
File OPC View Help			
⊡. Takebishi.Dxp.6	TagName	Value	Quality
Group0	Device1.MethodTag	Off	0xC0
	Device1.Tag001	0	0xC0
	Device1.Tag002	12345	0xC0
	SynclO Write		×
	Value		
		C	К
		CAN	ICEL

Name	Data Type	Location	Value	Quality
🕸 MethodTag	Method	Method	On	Good (C0h)
-🕰 Tag000	Short	D0	12345	Good (C0h)
-🔂 Tag001	Short	D1	12345	Good (C0h)
- Tag002	Short	D2	66	Good (C0h)

About the execution result of a method, when validating a script log, it can check with a message view.

Message						
I	No	Date	Time	Туре	Message	
<u>\$</u>]	00001 00002	2012/05/13 2012/05/13	20:46:47.421 20:46:47.421	Script SYSTEM	Called Method.(Script: Device1.MethodTag) Write succeed.Device1.MethodTag [Val=-1]	

5.9 Structure Tag

The model with two or more member variables of a structure is defined, and the same tag structure can be used only by generating a structure tag based on the definition. The structure has 2type Structure Tag and Structure Template.

Item	Description
Structure Template	Definition of structure which has some members.
Structure Tag	Tag which created based on Structure Template.
T	

Important

Tag settings in ODBC Client Connection don't support Structure Tag.

5.9.1 Define Structure Template

To create a Structure Tag, You define a Structure Template is at first. You select "New" in Structure Template View.

Structu	re Template	•	ņ	×
🔝 Sti	ructure			٦
	New			
	Change the name			
	Event Script			
	Delete			

"Template01" is created as a Structure Template.



By clicking "Template01", Member list is shown. You select "Tag"/"Structure" from right-click menu of the component.

Structure Template 🛛 🔻 🕂 🗙	S	truct	ur	e : Template01	×		
Structure		Mem	ıbe	er name		No	Data Type
Implateu 1	╞			New	►	Tag	
	Ŀ			Property		Struc	ture
	⊢	Ē		Сору	Ctrl+C		
				Paste	Ctrl+V		
	⊢			Delete			
				Move Up			
				Move Down			

You configure the member properties .

<Tag>

Property of Membe	er01 [] Simulation								
<u>M</u> ember name Des <u>c</u> ription Da <u>t</u> a Type	Member 01 SHORT		•						
Length Byte Swap	1		Att <u>r</u> ibute Calc <u>u</u> lation		Read NON	dWrite •	•		
New	Sa <u>v</u> e	:	<u><</u> <	≫≥		ОК		Cancel]

Item	Description
Member name	Specify a member name.
Description	Allows you to add a comment to the member.
Data type	Select a data type.
Size	Specify the size if you have specified a character string or an array.
Attribution	Specify a member attribution.
System calculation	Select a calculation
Byte swapping	To swap the high byte for the low byte, place a check in this box.
Array	Place a check in this box to define the tag as an array.

<Structure>

Member name	Mem	per01		
Des <u>c</u> ription Structure <u>T</u> ype	Temp	olate01		•
Member name	No	Data Type	Processing	Comment
- Member01	01	Short		
- Member02	02	Short		
- Member03	03	Short		

Item	Description
Member name	Specify a member name.
Description	Allows you to add a comment to the member.
Structure Type	Select a Structure Template which defined already.
Member List	Show members of selected Structure Template.

By using two or more Structure Templates, the hierarchy Structure Template as follows can be created.

Structure Template 🛛 🔫 🗜 🗙	Tag List : Device1 Structure : Line	1 x	
Structure	Member name	No	Data Type
Line1	🖃 🔩 P01	01	[Machine1]
Machine 1	- Flow	01.01	Float
	- Temp	01.02	Short
	-@ Valve	01.03	Bit
	-@ Switch	01.04	Bit
	🖃 🕂 P02	02	[Machine2]
	🗆 🕂 SubMachine1	02.01	[Machine1]
	- Flow	02.01.0	Float
	-🖾 Temp	02.01.0	Short
	-@ Valve	02.01.0	Bit
	-@ Switch	02.01.0	Bit
	- Switch	02.02	Bit
	-® Switch	03	Bit
📑 Project 😪 Diagn 🧇 Structu			

The right-click menu of Structure Template view is as follows.



Item	Description
New	Create a new Structure Template.
Change the name	Change the selecting Structure Template name.
Event Script	Create a new Event Script of Structure Template.
Delete	Delete the Structure Template. If selected Structure Template is referred from another
Delete	Structure Template, This structure template doesn't allow to delete.

Important

You can't delete the selected Structure Template is referred from another Structure Template.

You can't delete the selected Structure Template, if Structure Tag which created based on this Template is communicating.

The right-click menu of Structure Template members list is as follows.

Structure : Machine1	×							
Member name			No		Dat	а Ту	pe	
🖃 🛠 Member01 📻			01		Гм	pobie		1
- Member0		New			►		Tag	
- Member0		Property	/				Structure	
- Member0						rt		
🕂 Member02	Ē	Сору		Ctrl	+C	he1]	
- Member03		Paste		Ctrl	+V	rt		
	1	Delete						
	1	Move U	р					
		Move D	own					

Item	Description
New	Create a new Structure Template member Tag or Structure.
Property	Configure the member properties.
Сору	Copy the selected member.
Paste	Paste the copied member.
Delete	Delete the selected member.
Move Up	The row of the member is moved upwards.
Move Down	The row of the member is moved downwards.

Important

You can't delete the selected Structure Template member, if Structure Tag which created based on this Template is communicating.

5.9.2 Creating a New Structure Tag

You select "New->Structure Tag" from right-click menu of the Tag List.

Project Explorer 🛛 👻 🕂 🗙	Tag List : Device1 🗙									
	😨 🚮 🔎 🗿 Dev	ice 1								
IIII Project '無題'	Name			Data Type		Locat	tion	Value		Quality
i ⊡… 🗐 SYSTEM	-🕾 Tag000		Maur			<u> </u>	Call Tag		Challer	
SYSTEM [MemoryMap]	-🔂 Tag001		New.	•			- Tag		Cui+	·
Device I [Mitsubishi MELSEC]	- Tag002	10	Tag G	enerator	Ctrl+Shif	ft+T	🔗 Stru	cture Tag	Ctrl+I	2
Group 1		X	Cut		Cti	rl+X	🍳 Meti	nod	Ctrl+N	1
			Сору		Ctr	1+C				
			Paste		Ctr	l+V				
			Delet	e	De	lete				
			Add T	o Watch						
			Value	Format		►				
			Prope	rties	Alt+E	nter				
			Show	Array Viewer						
			Write	Value to Tag						

Input the member properties.

Structure Tag Na <u>m</u> e	LineA					
Des <u>c</u> ription						
Structure <u>T</u> ype	Line		•			
òt <u>a</u> rt Register	D0			<u>R</u> efresh		
Member name	Data Type	Register	Attribute	Processing	Comment	*
🖃 🔩 MachineA	[Machine]					
-@ Status	Bool	MO	Read/Write			-
- Count	Short	D1	Read/Write			=
🖃 🔩 MachineB	[Machine]					
- Status	Bool	M100	Read/Write			
- Count	Short	D3	Read/Write			
- Status	Bool	M200	Read/Write			
⊡ 🕂 Tank1 ∢	[Tank]				4	-

Item	Description
Structure Tag Name	Specify the Structure Tag name.
Description	Allows you to add a comment to the Structure Tag.
Structure Type	Select a Structure Template which defined already.
Start Register	If you specify start register and push "Refresh" button, based on the start register, structure member's register will be assigned automatically.
Member List	Show members of selected Structure Template.

Important

A register's contents of a setting change to a character string with extended specification by the register who assigns. For example, if "D0" is inputted into a Float type member and a setup is saved to him, it will be registered as "D0:R."

You can monitor Structure Tags in Tag List.

Tag List : Device1 🗙				
📳 💋 🔎 🗿 Device 1				
Name	Data Type	Location	Value	Qu
🗆 🧇 StructTag01	[Line1]			
🗆 🧇 P01	[Machine1]			
- Flow	Float	D1:R	1.20627e-037	Go
-@ Switch	Bool	M202	Off	Go
- Temp	Short	D3	548	Go
- Valve	Bool	M201	Off	Go
🖃 🧇 P02	[Machine2]			
🗆 🧇 SubMachine1	[Machine1]			
- Flow	Float	D5:R	1.20494e-037	Go
-@ Switch	Bool	M301	On	Go
- Temp	Short	D0	1	Go
- Valve	Bool	D0:00:OR	On	Go
- Switch	Bool	B101	Off	Go
-@ Switch	Bool	M101	Off	Go
-🕾 Tag000	Short	D0	1	Go
- 🗠 Tag001	Short	D1	12345	Go
- Tag002	Short	D2	548	G

You can expand members by click [+], collapse by [-].

<Expand members>

🖃 🧇 P02	[Machine2]	
🖃 🧇 SubMachine1	[Machine1]	
- Flow	Float	D5:R
- Switch	Bool	M301
- Temp	Short	D0
-@ Valve	Bool	D0:00:OR
- Switch	Bool	B101
- Switch	Bool	M101

<Collapse members>

🗆 🧇 P02	[Machine2]	
🗉 🧇 SubMachine1	[Machine1]	
-@ Switch	Bool	B101
-@ Switch	Bool	M101

Also	المحمدة المحمل		han wight alight we are	"T a1 A 11"	and "Callanaa All"
Also, you can expar	id and collapse all st	ructure tag's members	by right-click menu.	Expand All	and Collapse All.

Project Explorer 🛛 🔻 🔻 🗙	Tag List : Device1 🗙							
	😨 🖾 🔎 🗿 Devic	😨 👩 🔎 🗿 Device 1 🗸 Velsec Etherne						
III Project '無題'	Name	Data Type	Location	V	/alue	Quality	Timesta	imp
E- I SYSTEM	🗆 🧇 LineA	[Line]						
SYSTEM [MemoryMap]	🗆 🧇 MachineA	[Machine]						
Device [Mitsubishi MELSEC]	- Count	Short	D1	7	8	Good (C0h)	2013/09	/11 14:05:14
Device if or (Earchier)	-@ Status	Bool	M0		New		•	11 14:05:14
	🗆 🧇 MachineB	[Machine]		100	Tag Gene	erator	Ctrl+Shift+T	
	- Count	Short	D3			cur shire i	11 14:05:14	
	- Status	Bool	M100	- 26	Cut		Ctrl+X	11 14:05:14
	- Status	BOOI	M200		<u>С</u> ору		Ctrl+C	11 14:05:14
		[Idrik]	D100-P	Paste		Ctrl+V	11 14:05:14	
	- Switch	Roal	M200	- 11	– Delete		Delete	11 14:05:14
	- Valve	Bool	M301		Delete		Delete	11 14:05:14
	- Tag	Short	D0		<u>E</u> xpand A	All		11 14:05:14
					Collapse	All		
					Add To <u>V</u>	<u>V</u> atch		
					Value <u>F</u> o	rmat	Þ	
					P <u>r</u> opertie	5	Alt+Enter	
					Show <u>A</u> rr Write <u>V</u> al	ray Viewer lue to Tag		
								4

5.9.3 How to access Structure Tags from Client

When you access from a client, please access as a "Structure Tag name . member" In Switch of the following, it accesses as "Device1.StructTag01.P01.Switch."

Tag List : Device1 🗙			
😨 🔊 🔎 🛐 Device 1			
Name	Data Type	Location	Value
🖃 🧇 StructTag01	[Line1]		
🖃 🧇 P01	[Machine1]		
- Flow	Float	D1:R	
-@ Switch	Bool	M202	
- Temp	Short	D3	
- Valve	Bool	M201	
🖃 🧇 P02	[Machine2]		
🗆 🧇 SubMachine1	[Machine1]		
JAN Elow	Float	DS-P	

It is as follows if it browses from a client.

Add Item	•
Access Path	
Browse Items Server Ta	es
E- Root Device 1 Group 1 Flow Temp Valve Valve ⊕- StructTag01 ⊕- P01 ⊕- SYSTEM	
Device1StructTag01.P01Switch	Add >>
Added Items List	
Device1StructTag01.P01Switch	
	OK Cancel

Important

The name accessed from a client is the same as the view of a group.

Keep in mind that a group "AAA" and the structure tag "AAA" are treated as the same object.

5.10 Bridge

You can transfer the value from Tag to Tag, Group to Group and Device to Device, by using bridge function.

Important

- There is no upper limit to the number of bridge settings, but please note that the communication load will increase.

- Up to 32 items can be set in one bridge setting.

- Please note that executable number of scripts (including bridges) is limited depending on the edition of DeviceXPlorer.

5.10.1 Bridge Setting

Tag, Group and Device have bridge function.

Event list will be displayed when select [Event] from right-click menu for Device and Group.

Project Explorer		▲ û ×	Tag List : Device	Event List : Dev	vice1 x		
📰 🖬 🍙			12 🖾 🔎 🤶	Device1			
🔢 Project 'Notitle'			Event		Туре	Condition	Run
SYSTEM			😩 Bridge		Bridge	Period { 500 }	Run
i 🚰 Device 1 [Mitsubis]	hi M	ELSEC]	Change		Script	TagChange { 500, While Of Run	
l r					Script	Period { 500 }	Run
		New	•	e	Script	Run Event { }	Run
	Port Char Paste		ge				
			CtrI+V				
		Delete	Delete				
		Expand Al					
		Collapse A	dl –				
		Show Port	Always				
		Statistics					
		Event	Ctrl+E				
📑 Project 😪 Diagno		Property	Alt+Enter				

Events will be displayed in event list.

You can create, modify, delete and run/stop event from right-click menu.

Project Explorer 🛛 🔻 🕂 🗙	Tag List : Device1 Event List : Device1	vice1	×				4 ⊳
	😨 💋 🔎 🐒 Device1						•
Project 'Notitle'	Event	Тур	e	Condition		Run	
SYSTEM	😩 Bridge	Brid	ge	Period { 500 }		Run	
* Device1 [Mitsubishi MELSEC]	Schange		New	•	Script	:	
	(Cyclic)		C .4	Chilly V	Bridg	e	
	Initialize	ക	Cut	Ctri+X		TXUIT	
			Сору	Ctrl+C			
			Paste	Ctrl+V			
			Delete	Delete			
		~	Run				
			Properti	ies Alt+Enter			
		_			-		
Project 🤒 Diagno 🔗 Structu							

Input bridge setting.

Name	Bridge 1				
⊻ Run Event	Period	•	Period 500	ms	
Tag			While ON	-	
Bridge					
Method	Destination		Source		Expression(x)
Tag	Device1.Tag1	 <-	Device3.Tag3		

Item		Information
Name		Setting bridge name.
		Specify run state of bridge.
		If no check, bridge is not performed
	Event	Specify event condition to execute bridge.
		[Period] Bridge is performed the specified cycle (fixed cycle).
		[Tag Change] Bridge is performed when the value of the tag changed.
		[Run Event] Bridge is performed at the time of event engine starting of the parent
		Device. (*)
		[Stop Event] Bridge is performed at the time of event engine stopping of the parent
		Device. (*)
	Tag	When "Tag Change" is chosen in Event, a specification tag and conditions can be specified.
		Static tag and dynamic tag can be specified. While on the other hand, array and string tag
Run		cannot be specified.
		[While ON] While a specification tag turns on, it performs at a case (when it is except zero).
		[Change] Bridge is performed at the time of specified tag's Value or Quality or
		Timestamp changing.
		[Change(Value)] Bridge is performed at the time of specified tag's Value changing.
		[Change (Quality)] Bridge is performed at the time of specified tag's Quality changing.
		[Change (Time stamp)] Bridge is performed at the time of specified tag's Timestamp
		changing.
		[Rise] Bridge is performed at the time of specified tag changes to ON from OFF.
		[Fall] Bridge is performed at the time of specified tag changes to OFF from ON
	Period	Specify running interval and communication interval of bridge

* Event engine starts at the time of starting and stops at the time of application closing. And event engine will reboot to

the timing when user creates, modifies and deletes event.

	Item	Information		
Bridge	Method	Specify the method of bridge.		
Destination Specify the path of Tag, Device and Group which will be forwarded value.				
		You can chose the path by direct input upon in-place editing, or Browse dialog (*) which will		
		be shown by clicking [] button.		
	Source	Specify the path of Tag, Device and Group which transferring value.		
		You can chose the path by direct input upon in-place editing, or Browse dialog (*) which will		
		be shown by clicking [] button.		
Expression(x) Perform arithmetic operation via script.				
		When you specify Group at Method, cannot perform conversion of value.		
		Example: x * 100		
Add		Add new bridge setting.		
Delete		Delete the selected bridge settings		
OK		Confirm the editing bridge setting.		
Cancel		Cancel the editing bridge setting.		

* You can choose Tag, Device and Group, by using Browse dialog function.

Browse				
Path	Device1.Tag1			
Root	iTEM ice1 ice2 ice3	 \$BitRWRange \$BitWRange \$Connection Test \$Connection Test \$Connection Test \$Elapse \$Elapse \$ElapseMax \$ElapseMin \$ElapseRate \$ErrorCounts \$PortName \$PortName \$PrimaryStatus \$ReadRange \$ReceivedCounts \$SecondaryStatus \$SendCounts \$Simulate 	 \$SimulationType \$SlowpollingMode \$Standby \$Status \$WordRWRange \$WordWRange Tag1 	
			ОК	Cancel

5.11 Messages

5.11.1 Message

DeviceXPlorer divides messages into four levels of importance for processing (information, warning, error, and fatal error).

Untitled.dxp - DeviceXPlorer OPC Server	*									- 0	×
Eile Edit View Project Tools He	lp										
i 🛛 📂 💾 i 🔏 🖻 í	1 🔎 🔨	⋟ 🧐 😭	j 🗞 🇞 🔍 I	و 🔅 🗻 🌔	斄 🧔 opc	* 🗾					
Project Explorer 🔷 🔻 🛪	Tag List : Device	1 x Structure	: Line1					⊲ ⊳	Property		▼ # ×
	1 🖸 🖾 🗩 💈	Device1					✓ MelsecEthernet		Tag Tag001		~
Roject 'Untitled'	Name		Data Type	Location	Value	Quality	Processing	Attr	21 2 3	P	
. SYSTEM	- Tag001		Short	D1				Rea	 Basic (Tag Name) 	Tag 001	^
SYSTEM [MemoryMap]	-🖾 Tag002		Short	D2				Rea	Location	D1	
Device I [Mitsubishi MELSEC]	-🔂 Tag003		Short	D3				Rea	Auto Format	Disabled	
Device mont [cinemet]	-🖾 Tag004		Short	D4				Rea	Description		
	-🔂 Tag005		Short	D5				Rea	Device Type	D	
	- Tag006		Short	D6				Rea	Device account	Data Register	
	-🔂 Tag007		Short	D7				Rea	Block No	0	
	-🖾 Tag008		Short	D8				Rea	Data Type	SHORT	
	-🔂 Tag009		Short	D9				Rea	Byte Position	Lower Byte	
	-🐼 Tag010		Short	D10				Rea	Bit Position	0	
									Array	Disabled	
									Length	1	
									Byte Swap Attribute	Disabled	
									Calculation	NONE	
									Simulation		
									Simulation Signal	Disabled	
									Simulation Mode	Sine	
									Scale		
									Scaling Bass Min	Disabled	
									Raw Max	1000	
									Scaled Min	0	
									Scaled Max	10	
									Units		
									Conversion	Linear	
									Default Scale	(Action)	
									Alarm		~
📑 Project E 🔏 Diagnos 🧇 Structur	<							>			
Message	<u></u>										- n ×
I No Date Time	Type	Message									^
3 00001 2019/11/08 20:12:56:38	SYSTEM	Device YPlorer \	/ersion60.01 Date No	combor 22 2010							
	SYSTEM	Temporary licen	se file is valid until 20	19/12/07 28:59:59							
	SYSTEM	Start to loading	project.(C:¥Users¥seig	i¥Documents¥TAKEE	ISHI¥DeviceXPlore	r OPC Server 6					
00004 2019/11/08 21:13:57.58	SYSTEM	Temporary licen	se file is valid until 20	19/12/07 23:59:59.							
00005 2019/11/08 21:32:25.14 1 00005 1019/11/08 1:32:25.14	i Device1Port	Ethernet port op	en complete.								
00006 2019/11/08 21:32:25.14	i Device1Port	Ethernet informa	ation:Protocol=UDP Adi	dress=localhost Port=	:0						
	Device1Port	Address=192.16	8.19.186 Port=1025								
00008 2019/11/08 21:41:07.17	Device1Port	Ethernet port cl	osed.								~
Message 🧭 Monitor(1) 🔮 Watch(1)											
					Tag Count	10[Device1]	administrator	⊙ мо	onitorStop [Decimal]	🗞 Discon	nected

The importance of the message is indicated by the icons in the table below.

Icon	Category	Description
1	Information	Information message for communication parameters, etc.
2	Warning	Warning level message
8	Error	Error level message
۲	Fatal error	Fatal error message
<u>s</u>	Script Log	Execute script message
22.	DxpLink Log	DxpLink communication message
:	OPC Trace	OPC Interface message

It is possible to use the pop-up menu or toolbar to display only the information you need by Icon Filter and Text Filter or to temporarily stop output.

	Mess	sage					
	STOP	R 🗐	🔬 🗉 🛃	7			
	I	No	Date	Time	Туре	Message	
Ш	0	00001	2019/11/08	20:13:56.387	OVOTEM	DouisoVDIa	er Version6.0.0.1 Date November 22, 2019
		00002	2019/11/08	20:13:56.426	Detail		icense file is valid until 2019/12/07 23:59:59.
	ð	00003	2019/11/08	20:14:00.539	Pause		ling project.(C¥Users¥seigi¥Documents¥TAKEBISHI¥DeviceXPlorer OPC Server 6
	ŏ	00004	2019/11/08	21:13:57.586			icense file is valid until 2019/12/07 23:59:59.
	ð	00005	2019/11/08	21:32:25.146	Сору	Ctrl+C	t open complete.
	ð	00006	2019/11/08	21:32:25.146			ormation:Protocol=UDP Address=localhost Port=0
	ð	00007	2019/11/08	21:32:25.146	Clear		2.168.19.186 Port=1025
	Ō	00008	2019/11/08	21:41:07.171	Save		t closed.
					Icon Filter	•	
					Text Filter		

[Pause]

Messages output can be suspended. Although the message is outputted in fact, updating on a display is stopped. The display of a message is updated by clicking Pause again.

Important

The function that saves log file doesn't be suspended, if you configure "Auto Message Save" as "Save".

[Clear]

Messages are cleared from Message View.

[Icon Filter]

Item	Description
Fatal Error	Show fatal error message.
Error	Show error message such as communication error.
Warning	Show warning message.
Info	Show information message.
Communication Data	Show communication data message with PLC.
OPC Interface Access	Show OPC interface access message with OPC Client.
SuiteLink Trace	Show SuiteLink interface access message with SuiteLink Client.
DxpLink Trace	Show DxpLink interface access message.

[Text Filter]

Mes	Message View Text Filter							
	Туре		Filter					
	Show	~	Send					
	Show except	~	Recv					
	Hide	~	Read					
	Hide except	~	Write					
	Show	~						
	Show	~						
	Show	*						
	Show	~						
	Show	~						
	Show	*						
Enable All Disable All Clear All								
Filt	Filtering Priority SHOW OK Cancel							

	Item	Description
Check Box		Enable the filter.
	Show	Show message including the filter message.
m	Show except	Show except message including the filter message.
Type	Hide	Hide message including the filter message.
	Hide except	Hide except message including the filter message.
Filter		Input filter message.
Case Sensitive		Case sensitive check.
Filtering P	riority	Specify filtering priority.

By double-clicking the message line, you can view a detailed dialog. It is possible to copy error messages.

Log Detail				
				OK
Message ID	Date	Time	Item/Class	
00009	2012/05/13	21:55:40.540	Device1	
Message				
Read D0-D2 poir	nt=3			*
				Ŧ

By selecting "Copy" from pop-up menu., you can copy the message to clipboard.

Mes	sage				
STP	R 🗐	🤹 🗉 者	7		
I	No	Date	Time	Туре	Message
R	00164	2012/05/13	21:56:31.386	Device 1Port	Recv(17):D00000FFFF0300080000001E0039304200
R	00165	2012/05/13	21:56:32.366	Device 1	Read D0-D2 point=3
R	00166	2012/05/13	21:56:32.366	Detail	1):500000FFFF03000C0028000104000000000A80300
R	00167	2012/05/13	21:56:32.386	Bauco	7):D00000FFFF0300080000001E0039304200
8	00168	2012/05/13	21:56:33.366	Fause	-D2 point=3
R	00169	2012/05/13	21:56:33.366 📄	Copy	Ctrl+C 1):500000FFFF03000C0028000104000000000A80300
8	00170	2012/05/13	21:56:33.376		7):D00000FFFF0300080000001E0039304200

By selecting "Save" from the pop-up menu, you can save the message to csv file.

I	Mes	sage							
	STP	R 🗐	🔬 🗉 🛃	7					
	I	No	Date	Time	Туре	Messa	ie		
	R	00320	2012/05/13	21:57:23.387	Device1Port	Recv(17):D00000FF	FF030008	0000001E0039304200
Ш	R	00321	2012/05/13	21:57:24.367	Device1	Re	Detail		
	R	00322	2012/05/13	21:57:24.367	Device1Port	Se	Pauce		028000104000000000A80300
Ш	R	00323	2012/05/13	21:57:24.387	Device1Port	Re	rause		000001E0039304200
Ш	R	00324	2012/05/13	21:57:25.367	Device1	Re 📄	Copy	Ctrl+C	
Ш	R	00325	2012/05/13	21:57:25.367	Device1Port	Se			028000104000000000A80300
	R	00326	2012/05/13	21:57:25.377	Device1Port	Re	Clear		000001E0039304200
$\ $	R	00327	2012/05/13	21:57:26.367	Device1	Re	Save		
	R	00328	2012/05/13	21:57:26.367	Device1Port	Se	Sarein		028000104000000000A80300

It is checked after CSV file preservation whether messages are cleared or not.

DeviceXPlorer	83
2 Log dump complete. Are you sure you want to clear log ?	
(はい(<u>Y</u>) いいえ(<u>L</u>	.)

5.11.2 How to save messages automatically

You configure "Auto Message Save" as "Save" in Project Properties (5.13.7).

Property of Untitled		[- • •
Common Properties Project Properties			ок
Enable Unknown ItemID	Enable	-	
Auto Add Item	Not Add		Cancel
Display System Tag	Hide		
Starting Window Style	Last Style		Apply
COM Starting Window Style	Minimize		
🖃 Log			
Auto Message Save	Not Save 🗸 🗸		
Term of Keeping Message Log (Day)	Save		
Stop Disk Size (MB)	Not Save		
Max File Size of Message Log (MB)	99		
File Path of Saving Message Log			

5.12 Diagnosis

You can use the diagnostic function to check the access status of a client or investigate the cause of a problem. Undernoted icons show diagnosis condition.

Icon	Description
	Condition is Good.
<u> </u>	Good and Bad are mixed.
8	Condition is Bad. Communication error is occurring.
Ø	Condition is not Active status.

5.12.1 Interface Diagnosis

Diagnostics 🔷 🔻 🗶	Diagnostics List 🗙	Tag List : Device	1 Event List :	Device1	
🔏 Diagnostics	Interface	Connections	Items	Active Items	Error Items
😑 🐼 Outer interface	OPC DA	1	1	1	0
	OPC UA	1	2	2	0
Crown 0	🚺 🕖 DDE	1	1	1	0
wrn:Z1710-02:UnifiedAu					
🖃 🧭 MonitoredItems					
🖹 🛷 SuiteLink					
E-W Event					

Item	Description
Interface	OPC interfaces and SuiteLink interfaces
Connections	Number of clients connected to each interface
Items	Number of registered tags
Active items	Number of active tags
Error items	Number of error tags

5.12.2 Client Diagnosis

This shows information for the connected clients.

Diagnostics 🗢 🕈 🗙	Diagnostics List 🗙	Tag List : Device	1 Event List :	Device1		
🔏 Diagnostics	Client Name	Groups	Items	Active Items	Error Items	Advised
🖶 🥑 Outer interface	🕢 VcSampleOpc	1	1	1	0	Advised
E-O DA						
SampleOpc						
OPC UA						
MonitoredItems						
Device 1						
🖃 🛷 SuiteLink						
T Device 1						
🗄 🛷 🕑 Event						
Device1						

Item	Description
Client	Client handle and client name
Groups	Number of registered groups
Items	Number of registered tags
Active items	Number of active tags
Error items	Number of error tags
Advised	The status of advise connection for OPC server object.

5.12.3 Group Diagnosis

This shows the information of the group to which the client is registered.

Diagnostics 🔷 🔻 🗶 🗙	Diagnostics List 🗙	Tag List : Device	1 Event List :	Device1			
🔏 Diagnostics	Group Name	Items	Active Items	Error Items	Update Rate	Status	Advised
🖨 🐼 Outer interface	🕢 Group ()	1	1	0	1000	Active	Advised
🖹 💮 OPC DA							
🖻 – 🐼 VcSampleOpc							
Group0							
📄 🛷 OPC UA							
😑 🛷 MonitoredItems							
🖮 🛷 SuiteLink							
🖹 🛷 Event							

Item	Description
Group name	OPC group name
Items	Number of registered tags
Active items	Number of active tags
Error items	Number of error tags
Update Rate	Update interval value set for the group
Status	Active/InActive status of group
Advised	The status of advised connection for OPC group object.
5.12.4 Tag Diagnosis

This shows information on the tags included in the group.

Diagnostics 🔍 🔻 🎗 🗙	Diagnostics List 🗙	Tag List : Devic	e1 Event List	: Device1						
🔏 Diagnostics	Name	Data Type	Location	Value	Quality	Timestamp	Attribute	Processing	Comment	Status
i ⊖ • • • • • • • • • • • • • • • • • •	🕜 Device 1.Tag	Short	D0	0	Good (C0h)	2019/11/12	Read/Write			Active
UPC DA										
Group0										
🖨 📀 OPC UA										
urn:Z1710-02:UnifiedAu										
Monitorealtems										
SuiteLink										
Device 1										
Event										

Item	Description			
Name	Tag name			
Data Type	lag data type			
Location	Physical address to refer			
Value	The most recent cache value			
Quality	Quality of tag			
Time stamp	Time stamp			
Attribute	Attribute of tag			
Processing	Existence of scale setting			
Comment	Comment of tag			
Status	Active / InActive status of tag			

Undernoted icons show the diagnosis condition of tag.

Icon	Description
	Tag quality is Good.
<u>^</u>	Tag quality is Uncertain.
8	Tag quality is Bad. Communication error is occurring.
3	Tag quality is Waiting for initial data.
	Tag condition is not active status.

You can write the value to tag as well as the tag monitor. You can register the tag to the watch view by drag and drop.

Diagnostics 👻 👎 🛠	Diagnostics L	ist 🗙	Tag List : Device	1 E	vent List :	Device1		
🔏 Diagnostics	Name		Data Type	Loca	ation	Value	Quality	Timestamp
Outer interface	O Device 1.T	٨d	d To Watch		1	0	Good (C0h)	2019/11/12
Group0 Group0 OPC UA Group1 MonitoredItems Composition of the second secon		Val	Value Format					
		Sho	ow Array Viewer					
		Wr	ite Value to Tag					
Device1								
Event Event								
O Device 1								

5.12.5 Event Diagnosis

This shows information on the events.

Diagnostics List 🗙	Tag List : Dev	ice1 Event List	: Device1	
Event Engine	Events	Running	Error Count	Event scan(ms)
🕖 Device 1	1	1	0	0 (MAX61)
	Diagnostics List × Event Engine	Diagnostics List x Tag List : Dev Event Engine Events	Diagnostics List X Tag List : Device1 Event List Event Engine Events Running Image: Operating of the second	Diagnostics List Tag List: Device1 Event List: Device1 Event Engine Events Running Error Count Image: Operation of the second sec

Item	Description
Event Engine	Event Engine name
Events	The number of registered Events
Running	The number of executing Event
Error Count	The count of error
Event scan(ms)	The scan time of Event.(Max scan time)

If you click an Event Engine name, the every event status is shown.

Diagnostics 👻 🕂 🗙	Diagnostics List 🗙	Tag List : Device	1 Event List :	Device1			
🔏 Diagnostics	Event	Туре	Object	Status	Run times	Error Count	Lap time(ms)
Outer interface	🕖 test	Script	Device1	Normal	3213	0	0 (MAX:3)
UPC DA							
Group0							
🖨 🛷 OPC UA							
urn:Z1710-02:UnifiedAu							
MonitoredItems							
□ □ · · · · · · · · · · · · · · · · · ·							
Device1							
Event							
Oevice 1							

Item	Description			
Event	The name of Event			
Туре	The type of Event			
Object	The object name to which an Event belongs			
Status	Status of Event			
Run times	Execute times of Event			
Error count	The count of error			
Lap time	The lap time of Event. (Max scan time)			

Important

When you use two or more events without the license of enterprise, "License Invalid" occurs in Event Diagnosis.

Diagnostics	▲ ů ×	Diagnostics List 🗙	Tag List : Dev	ice1 Event List	: SYSTEM Event Li	st : Device1		
🔏 Diagnostics		Event	Туре	Object	Status	Run times	Error Count	Lap time(ms)
Outer interface OPC DA OPC UA OPC UA SuiteLink Event	🐼 test	Script	Device1	License Invalid	23	0	0 (MAX:0)	
	🐼 test2	Script	Device1	License Invalid	0	0	0 (MAX:0)	
	🐼 bridge	Bridge	Device1	License Invalid	0	0	0 (MAX:0)	
Device1								
SYSTEM								

5.13 **Projects**

Project settings are comprised of common properties and project properties. The settings that affect the application as a whole are "Common Properties", while the items that are limited to a particular project are set as "Project Properties". The project settings screen can be opened from "Properties" under the "Projects" menu, or from "Options" under the "Tools" menu.

	^	Cancel Apply
•		Apply
		Apply
		1444
n		
	5	
	· ·	
	ner to close Port	ver to aloos Part

Note

DeviceXPlorer settings are saved to a specified folder as files with the extension "*.dxp".

5.13.1 Common Properties, General

Item	Default	Reboot	Description
Auto Port Close	Close		If you select "Close", the ports will close when there is no access from a client. This improves convenience when more than one application is using a port such as RS232C that must be accessed exclusively. You can specify "Close" or "Not Close".
Acceptable Max Count of Async Demand (Common)	1,000	Need	Sets the maximum number of asynchronous requests (Script, DxpLink etc.) that can be accepted. If asynchronous requests continue to be displayed error message in message view.
Acceptable Max Count of Async Demand (OPC)	1,000	Need	Sets the maximum number of asynchronous requests (OPC interface) that can be accepted. If asynchronous requests continue to be called faster than the actual communication can handle them, once a specified number of requests build up DeviceXPlorer returns CONNECT_E_ADVISELIMIT (0x80040201).
Acceptable Max Count of Async Demand (SuiteLink)	10,000	Need	Sets the maximum number of asynchronous writing requests (SuiteLink interface) that can be accepted. If asynchronous requests continue to be called faster than the actual communication can handle them, once a specified number of requests build up DeviceXPlorer returns error.
Protocol Timer Tick	10 (ms)	Need	Sets the operating interval for sending and receiving messages. If the value is too small, it increases the CPU usage rate. Normally, a setting within the range of 10 - 100 ms is recommended.
Monitor Rate	600 (ms)		Specify the interval of monitor function and diagnostics view on OPC Server. CPU usage rises when you set small value. Set recommendable value more than 500msec.
Project file save folder	My Document		Specify the folder for saving project file. If you specify empty string, project folder will be My Document/TAKEBISHI/Project folder.
Startup File	(No specification)	Need	Specifies the project file to be loaded automatically when DeviceXPlorer starts. If there is no specification, the last project file used will be loaded.
Process Priority	Normal	Need	Specifies the process priority. [High] [Low] REALTIME > HIGH > NORMAL > LOW
OPC Thread Priority	NORMAL	Need	Specifies the thread priority.[Low][High][Low]CRITICAL > HIGHEST > NORMAL > LOWEST > IDLE
Start as Service Program	Execute as Normal Application	Need	If this is "Service Program", DeviceXPlorer is run as aWindows service program.*Service Program:Run as Service.Execute as Normal Application:application.
Namespace Delimiter	. (Dot)	Need	Specifies the delimiter for Item ID.
Extend Tag Delimiter	: (Cologne)	Need	Specifies the delimiter for extended tag name of dynamic

This is where you set the parameters that affect the software as a whole.

			tag.	
Language	English		Specifies the language of the application. You can specify "Japanese", "English" or "Chinese	
	8		(Simplified)" or	
			"Chinese(Traditional)" or "Korean(Hangul)".	
Auto Login User	Administrat	Need	Select the login user when DeviceXPlorer starts.	
	or	necu		
	(No		Specifies running CPU processer of DeviceXPlorer. If this	
Running Processer Setting	specification		setting is not specified, DeviceXPlorer runs with all CPU	
)		processer.	

* When connecting with OPC server which runs as windows service, the DCOM configuration is required. About the DCOM configurations, please refer to 5.22.

5.13.2 Common Properties, OPC

Item	Default	Reboot	Description
OPC Update Rate	500 (ms)	Need	Specifies the interval for notifying an OPC client of data changes. This setting value is used when OPC client specifies OPC UpdateRate as "0".
Timer Tick for Async Update Mode	10 (ms)	Need	Specifies the interval for notification of data changes when the asynchronous update mode is on.
Return cache in error	Enabled		Return cache value when error is occurred. If the setting is disabled, the EMPTY value is returned.
Return success for communication failure at reading	Disable		Return success code 'OPC_S_UD_COMM_ERROR (0x00048000) ' for communication failure at reading. If this is enabled, return failure code ' OPC_E_UD_COMM_ERROR (0x80048000) '.
Initial DataChange Timeout	15000		The timeout for getting first value when initial DataChange. DeviceXPlorer sets Last Usable Value(0x44) or Waiting for Initial Data(0x20) to the quality of the items that are past timeout, and notifies to the client.
OPC UA Server Setting	-	-	Refer to 5.13.2.1
OPC UA Client Setting	-	-	Refer to 5.13.2.2
OPC UA Publisher Settings	-	-	Refer to 5.13.2.4

[Settings and Internal Operations]



* The "Update Interval" in the figure above is a setting that is made by the OPC client when AddGroup() is running.

5.13.2.1 Common Properties, OPC, OPC UA Server Setting

OPC UA Server Setting		Х
Enable <u>O</u> PC UA Server		
Port No	52240	
Transaction Thread PoolSize	512	
SecurityPolicy/SecurityMode		
Basic128Rsa15 / Sign	Basic128Rsa15 / Sign <u>A</u> nd Encrypt	
Basic256 / Sign	Basjc256 / Sign And Encrypt	
Basic256Sha256 / Sign	Basic256Sha256 / Sign And Encrypt	
Aes128Sha256RsaOaep / Sign	Aes128Sha256 <u>R</u> saOaep / Sign And Encrypt	
Aes256Sha256RsaPss / Sign	Aes256Sha256RsaPss / Sign And Encrypt	
Trusted List	C:¥ProgramData¥TAKEBISHI¥DeviceXPlorer OPC Server (•
Rejected List	C:¥ProgramData¥TAKEBISHI¥DeviceXPlorer OPC Server I	
Issures <u>L</u> ist	C:¥ProgramData¥TAKEBISHI¥DeviceXPlorer OPC Server (
Trusted(User Authentication)	C:¥ProgramData¥TAKEBISHI¥DeviceXPlorer OPC Server (
Issuers(User Authentication) List	C:¥ProgramData¥TAKEBISHI¥DeviceXPlorer OPC Server (
Own Certi <u>f</u> icate	C:¥ProgramData¥TAKEBISHI¥DeviceXPlorer OPC Server (
Own Pri <u>v</u> ateKey	C:¥ProgramData¥TAKEBISHI¥DeviceXPlorer OPC Server (
<u>G</u> enerate Certificate	OK Cancel	

Item	Default	Reboot	Description
Enable UA Server	Disable	Need	Select whether you use OPC UA Server function is, or not.
Enable Anonymous	Disable	Need	Select whether to allow anonymous connections.
Port No	52240	Need	Specify the port number.
Transaction	519	Need	Specify the number of transactions that can be accepted
ThreadPoolSize	512		simultaneously.
Security Policy/ Securi	ty Mode		
None		Need	
Basic128Rsa15/			
Sign			
Basic128Rsa15/			
Sign And Encrypt			
Basic256/Sign			
Basic256/Sign			
AndEncrypt			
Basic256Sha256/			Colort the restriction of the accurity Doligy/ Commity mode
Sign	Disable		select the restriction of the security Folicy/ Security mode
Basic256Sha256/			to be connected.
Sign And Encrypt			
Aes128Sha256			
RsaOaep/Sign			
Aes128Sha256			
RsaOaep/Sign			
AndEncrypt			
Aes256Sha256			
RsaPss/Sign			

Aes256Sha256			
RsaPss/Sign			
AndEncrypt	C·VDroomomData	Need	
	U.≇FT0graniData VTAKFRISHI¥	Ineeu	
	TAMEDIOTIT		
Trusted List ^{*1}	ODC Samon		Specify the directory where trusted certificates are stored.
	CVnlrigomor¥tru		
	o=pkiserver=uu stad		
	C.V.ProgramData	Nood	
	U. €I IUgraniData VTAKFRISHI¥	Ineeu	
	#IAAEDIOIII+		Specify the directory for storing rejected certificates.
Rejected List	ODC Sortion		If you want to allow the connection, move it to the trusted
	CVnlrisomuryVroio		directory.
	0=pkiserver+reje		
	C:¥ProgramData	Need	
	¥TAKEBISHI¥	INCCU	
	DeviceXPlorer		Specify the directory for storing the certificate and
ISSUERS List ^{*1}	OPC Server		revocation list file (CRL).
	6¥nkiserver¥issu		
	ers		
	C:¥ProgramData	Need	
	¥TAKEBISHI¥	1.000	
Trusted(User	DeviceXPlorer		Specify the directory to store the certificate when
Authentication)	OPC Server		connecting using an X509 authenticated user.
List^{*1}	6¥pkiserver¥use		
	r trusted		
	 C:¥ProgramData	Need	
т (тт	¥TAKEBISHI¥		
Issuers(User	DeviceXPlorer		Specify the directory for storing the revocation list file
Authentication/	OPC Server		(CRL) when connecting using an X509 authenticated user.
List	6¥pkiserver¥use		
	r_issuers		
	C:¥ProgramData	Need	
	¥TAKEBISHI¥		
	DeviceXPlorer		
Own Certificate	OPC Server		Creatify own contificate noth
	6¥pkiserver¥ow		Specity own certificate path.
	n¥certs¥DxpOpc		
	UaServer.der		
	C:¥ProgramData		
	¥TAKEBISHI¥		
	DeviceXPlorer		
Own PrivateKey	OPC Server	Need	Specify own private key path.
	6¥pkiserver¥ow		
	n¥private¥DxpO		
	pcUaServer.pem		
Generate Certificate	—	—	Refer to 5.13.2.3.

*1 Store the certificate file in certs under the specified folder and the revocation list in crl.

5.13.2.2 Common Properties, OPC, OPC UA Client Setting

OPC UA Client Setting		×
Trusted List	C:¥ProgramData¥TAKEBISHI¥DeviceXPlorer OPC Server (
Rejected List	C:¥ProgramData¥TAKEBISHI¥DeviceXPlorer OPC Server (
Issures List	C:¥ProgramData¥TAKEBISHI¥DeviceXPlorer OPC Server (
Own Certificate	C:¥ProgramData¥TAKEBISHI¥DeviceXPlorer OPC Server I	
Own PrivateKey	C:¥ProgramData¥TAKEBISHI¥DeviceXPlorer OPC Server I	
Generate Certificate	OK Cancel	

Item	Default	Reboot	Description
Trusted List*1	C:¥ProgramData ¥TAKEBISHI¥ DeviceXPlorer OPC Server 6¥pkiclient¥trus ted	Need	Specify the directory where trusted certificates are stored.
Rejected List	C:¥ProgramData ¥TAKEBISHI¥ DeviceXPlorer OPC Server 6¥pkiclient¥rejec ted	Need	Specify the directory for storing rejected certificates. If you want to allow the connection, move it to the trusted directory.
ISSUERS List*1	C:¥ProgramData ¥TAKEBISHI¥ DeviceXPlorer OPC Server 6¥pkiclient¥issu ers¥certs	Need	Specify the directory for storing the certificate and revocation list file (CRL).
Own Certificate	C:¥ProgramData ¥TAKEBISHI¥ DeviceXPlorer OPC Server 6¥pkiclient¥own ¥certs¥DxpOpc UaClient.der	Need	Specify own certificate path.
Own PrivateKey	C:¥ProgramData ¥TAKEBISHI¥ DeviceXPlorer OPC Server 6¥pkiclient¥own ¥private¥DxpOp cUaClient.pem	Need	Specify own private key path.
Generate Certificate	—	Need	Refer to 5.13.2.3.

*1 Store the certificate file in certs under the specified folder and the revocation list in crl.

5.13.2.3 Common Properties, OPC, OPC UA Server/Client Setting, Generate Certificate

Generate Certificate				×
Organization	TAKEBISHI			
OrganizationUnit				
Locality				
State	КУОТО			
Country	qt			
DomainName	Z2004-01			
IP Address				
RSA Key Strength		2048bits		\sim
Signature Algorithm		Sha256		\sim
Certificate Validity (Year)		3		~
			ОК	Cancel

Item	Description
Organization	Specify the organization.
OrganizationUnit	Specify the organization unit.
Locality	Specify the locality.
State	Specify the state.
Country	Specify the country.
DomainName	Specify the domain name.
IPAddress	Specify the IP address.
RSA Key Strength	Select the RSA Key Strength.
Signature Algorithm	Select the Signature Algorithm.
Certificate Validity (Year)	Specify the Certificate Validity.

*A certificate is generated when a certificate does not exist when the application starts.

5.13.2.4 Common Properties, OPC, OPC UA Publisher Settings

OPC UA Publisher Settings		×
Using Publisher URI PublisherId NetworkInterface	opc.udp://239.0.0.1:4840 1 localshost	

Item	Default	Reboot	Description
Using Publisher	Disable	Need	Set whether to use the publisher.
URI	opc.udp://239.0.0.1:4840		Specify the multicast address.
PublisherId	1		Specify the PublisherId.
Notreel-Leterfood	lasslikast		Specify the interface for publishing to the specified
NetworkInterface localhost			multicast address.

* Please contact us if you wish to use the OPC UA publisher settings.

5.13.3 Common Properties, SuiteLink

Item	Default	Reboot	Description
SuiteLink Application Name	DXP	Need	Specifies the SuiteLink application name.
Notify Cache first	Disable		Send cache value of tag at first notification immediately when SuiteLink clients connect the server. You can avoid timeout on SuiteLink client.

5.13.4 Common Properties, DxpLink

Item	Default	Reboot	Description
DxpLink Server Function	Enable	Need	Place a check in this box to enable the DxpLink Server function.
DxpLink Port No	9980	Need	Specify the port No of DxpLink Serer.

5.13.5 Project Properties, General

This is where you set the parameters that only affect the project.

Item	Default	Reboot	Description
			Select the timing that tags cache value is updated on poke.
			"Reflect cache memory immediately"
	Reflect		Immediately when DeviceXPlorer receives a write
Pofloat Dalva	cache		request .
Reflect Foke	memory		"Reflect cache memory after writing"
	immediately		After execute poke and poke is success.
			"Not reflect cache memory"
			Not update cache value on poke.
	Giving		If you select "Giving Priority to Writing", when writing is
The Priority of the	Driority	Nood	requested, writing is performed before reading.
Writing in processing	to Whiting	Ineeu	You can specify "Giving Priority to Writing" or "Giving
	to writing		Priority to Reading".
			Communicate by a client and a subscription group unit
Communication por	Disable	Need	and perform movement of the DXP2007 equivalency.
Client			Communication load becomes higher than
Onent			default(Invalidity). If use this function, Slow polling mode
			is not available.
			Only when "Communication per Client" is "Enable", this
			setting is effective.
			If the multi-access mode is on, when a tag that covers
			several devices is registered for a single OPC group,
			parallel processing is performed for each device, which
Multi Access Mode	Enable	Need	makes it possible to increase throughput. If the
			multi-access mode is not used, communication proceeds in
			order one device at a time, so that if a communication
			failure occurs for one device, the communication
			processing for the other devices is delayed.
			You can specify "Enable" or "Disable".
Multi Access for Sync Async	Disabled	Need	Only when "Communication per Client" is "Enable", this

			setting is effective. Specify whether to use multi access for sync or async request from clients. If this setting is enable, many threads
			are made for reading and writing.
Multi Access Method for Sync Async	Read/Write	Need	Specify the process for multi-access, when Multi Access for Sync Async is enabled.
Async Update Mode	Enable	Need	If the asynchronous update mode is on, a DataChange event occurs for the tags that have been read, out of the tags registered for a single OPC group. You can specify "Enable" or "Disable".
Write Optimization Type	Request Order	Need	Specify the method of optimization about communicating with PLC to write value. You can select "Request Order", "Address Order" or "Optimization Priority".
Reduce write-queue	Omit same value	Need	Specify the method to reduce writing-queue of async request. This setting influences some internal handling of GUI, script, OPC UA, DxpLink. It do not influence the sync or async writing from OPC DA client, and the writing from SuiteLink client. 'Omit same value' DeviceXPlorer omits requests of writing same value to the same tag in once, so you can reduce the load of the PLC communication appropriately (Default). 'Omit except latest value' DeviceXPlorer omits requests of writing value to the same tag in once. DeviceXPlorer writes only latest value, so you can reduce the load of PLC communication the maximum. Because the old requests in the writing-queue is not written, you can choose this if you allow omission. 'No Reducing' DeviceXPlorer writes all requests without omitting
			anything. In the case which a writing speed to PLC is not enough for, the full error of the writing-queue occurs and may not be accepted a new request of writing.
Shared Tag Memory	Use	Need	The shared tag memory can be used for sharing data among applications and as a work register. If the shared tag memory is not used, it reduces memory consumption. You can specify "Use" or "Not Use".
Points of Shared Tag Memory	100 (K points)	Need	If the shared tag memory is used, this specifies the amount of data (device points) for each shared tag. By changing the number of tag points for each data type, you can reduce memory consumption. Between 1K and 100K points can be set.
Simulation Max	100		Specify max value to change value at simulation mode (Sine / Ramp / Random).
Simulation Cycle	1000		Specify cycle to change value for Sign and Ramp type at simulation mode.
Write non-numeric values	Disable		Specify whether to write non-numeric values(NaN/Infinite) to floating type tags or not.

Skip bridging for tag which is bad quality	Does not skip bridging	 About bridge function when source tag is bad quality, copying process of this tag is skipped.
Reset of the System Tag(Statistics)	None	 Set the reset timing of the System Tag (\$ElapseMin,\$ElapseMax,\$Elapse,\$ErrorCounts,\$SendCo unts,\$RecievedCounts).
Script Garbage Collection	5000	 Run the Full-Garbage-Collection-Cycle of script (Lua) per specified interval. If 0 is set, user can control garbage collection by self.

5.13.6 Project Properties, GUI

This sets the parameters related to the display.

Item	Default	Reboot	Description		
Writing Tog Volue From CIII	Permit		Allows the operator to write values in the Tag View.		
writing rag value From GOT	Writing		You can specify "Prohibit Writing" or "Permit Writing".		
			Keeps the current value of the displayed tag if the		
Koon Monitor Value	Koon		monitoring is stopped in Tag View. If the value is not kept,		
Reep Montor Value	neep		it is cleared.		
			You can specify "Keep" or "Clear".		
But in Task They when			If you select "Put in", when the window is minimized, it is		
rut in task fray when	Not Put in		not shown in the task bar but is stored in the task tray.		
minimized			You can specify "Put in" or "Not Put in".		
Max Display Message	1,000	Need	Sets the maximum message lines shown in Message View.		
	Enable		Allows access to items that have not been registered in		
Enable Unknown ItemID			advance.		
			You can specify "Enable" or "Disable".		
			If you select "Yes", when an unregistered item is accessed,		
Auto Add Item	Not Add		the item is automatically registered.		
			You can specify "Add" or "Not Add".		
Display System Tag	TT: 1		Shows system tags in Tag View.		
Display System Tag	піае		You can specify "Hide" or "Display".		
			Specifies the window style of when the application starts.		
Starting Window Style	Lest Style		Last Style Stores the window style.		
Starting Window Style	Last Style		Normal: Always Window.		
			Minimize: Always Minimize.		
COM Starting Windows			Specifies the window style of when the application is		
Stulo	Minimize		started automatically by COM.		
Style					

* The settings you make for "Use of unregistered items", "Automatic item registration", and "Show system tags" become the defaults for newly created devices. If you want to change the settings for each device, you can change them on the Device Properties screen

5.13.7 Project Properties, Log

Item	Default	Reboot	Description
			It is possible to automatically save messages output to
Auto Mossago Savo	Not Corro		Message View. Messages are saved even during a pause in
Auto Message Save	not Save		the displayed messages.
			You can specify "Not Save" or "Save".
Storage Deried	0 (dava)		The stored data is deleted when the specified storage
Storage r eriod	0 (days)		period expires. If you specify "0", the data is not deleted.
Ston Dials Siza	100 (MD)		If the remaining disk space falls below the specified
Stop Disk Size	100 (MID)		amount, file saving stops.
			A name is created for the log file in the
			"YYYYMMDD-nnn.LOG" format, and when the
			maximum size is reached, a new file is created. The
Max File Size of Message Log	0 (MB)		number nnn is an automatically attached branch number
			between 001 and 999. If the branch number exceeds 999,
			the file name becomes YYYYMMDD-1000.LOG. If you
			specify "0", the file size will not be checked.
File Path of Saving Message	(Current		Specifies the path for storing log data.
Log	folder) You can specify "Output" or "Not Out		You can specify "Output" or "Not Output".
Output Information Message	Output		Outputs information messages.
			You can specify "Output" or "Not Output".
Output Warning Message	Output		Outputs warning messages.
			You can specify "Output" or "Not Output".
Output EBROR Message	Output		Outputs error messages.
	Output		You can specify "Output" or "Not Output".
Output FATAL ERROR	Output		Outputs fatal error messages.
Message	output		You can specify "Output" or "Not Output".
Dump Script Log	No Output		Outputs Script Log.
2 cmp compo dog	1.0 0 mp m		You can specify "Output" or "Not Output".
Output Communication	No Output		Traces communication messages.
Message			You can specify "Output" or "Not Output".
Output DxpLink	No Output		Outputs DxpLink Interface.
			You can specify "Output" or "Not Output".
Output SuiteLink	No Output		Outputs SuiteLink Interface.
• ···F ··· • ·····			You can specify "Output" or "Not Output".
Output OPC Interface Access	No Output		Traces the access status of the OPC interface.
Message	1		You can specify "Output" or "Not Output".
			Specifies whether to save OPC Interface Detail Message
Detail OPC Message	Enable		automatically. If this setting is "Enable", OPC Interface
			Detail Message is outputted to log file and Message View.
			You can specify "Enable" or "Disable".

This sets the parameters for logging messages shown in Message View.

5.14 Service Activation

DeviceXPlorer can be started as a Windows service program.

Important

Please configure after start as "Run as administrator" when UAC is ON in on Windows Vista or later OS.

DeviceXPlorer runs on the service session (session 0) of Windows when you use service in Windows Vista or later.

SuiteLink clients running on other sessions such as desktop cannot connect to DeviceXPlorer.

MELSEC EZSocket, MELSEC interface board and Mitsubishi CNC connection do not work in running as service. DCOM setting will be initialized if you register / unregister service.

5.14.1 Registering DeviceXPlorer as a service program

(1) Go to Tools -> Options, specify "Startup file", and set "Start as Service Program" to "Service Program".

Property of Untitled		
Common Properties Project Properties		OK
🖃 General		
Auto Port Close	Close	Cancel
Acceptable Max Count of Async Demand (Co	1000	
Acceptable Max Count of Async Demand (OP	1000	Apply
Maximum number of asynchronous requests	10000	
Protocol Timer TICK (msec)	10	
Monitor Rate (msec)	600	
Project file save folder		
Startup File		
Process Priority	NORMAL	
OPC Thread Priority	NORMAL	
Start as Service Program	Execute as Normal Application	
Namespace Delimiter	Service Program	
Extend Tag Delimiter	Execute as Normal Application	
Language	English	
Automatic Login User	Administrator	
Running Processor Setting	None	

(2) When you exit DeviceXPlorer, it will be registered as a service program.

You can check running status of "DeviceXPlorer OPC Server 6" as service program from "Services" of "Administration Tool" in Control Panel.

Services					— (- ×
<u>File</u> <u>Action</u> <u>View</u>	<u>H</u> elp					
(+ +) 🖬 🗉 🤅	à 📑 🛛 🖬 🕨 🖬 🕪					
Services (Local)	Services (Local)					
	DeviceXPlorer OPC Server 6	Name	Description	Status	Startup Type	Log On ^
	Start the service	OevicePickerUserSvc_56eed DevicesFlowUserSvc_56eed DeviceXPlorer OPC Server 5	This user se Allows Con		Manual Manual Automatic	Local S Local S Local S
		DeviceXPlorer OPC Server 6			Automatic	Local S
		DevQuery Background Disc DHCP Client Diagnostic Execution Service	Enables app Registers an Executes dia	Running	Manual (Trig Automatic Manual (Trig	Local S Local S Local S
		Diagnostic Policy Service Diagnostic Service Host	The Diagno The Diagno	Running Running	Automatic Manual	Local S Local S
		Q Diagnostic System Host	The Diagno	Running	Manual	Local S 🗸
	Extended Standard					-

If you don't launch DeviceXPlorer with "Run as administrator" from right-click menu, following error message will show. This is error and DeviceXPlorer doesn't became service application.



(3) From Control Panel -> Services, open the Properties window for "DeviceXPlorer OPC Server 6".

DeviceXPlorer OPC Server 6 Properties (Local Computer)	×
General Log On Recovery Dependencies	
Service name: DeviceXPlorer OPC Server 6	
Display name: Device XPlorer OPC Server 6	
Description:	
Path to executable: C:¥Program Files (%6)¥TAKEBISHI¥DeviceXPlorer OPC Server 6¥Bin¥Devic	
Startup typ <u>e</u> : Automatic 🗸 🗸	
Service status: Stopped Start Stop Pause Resume You can specify the start parameters that apply when you start the service from here. Start parameters:	
OK Cancel Apply	í

(4) Open the Logon tab and validate the check of "Allow service to interact with desktop" checkbox.

DeviceXF	lorer OP	C Server 6 F	Properties (Loc	al Computer))	×
General	Log On	Recovery	Dependencies			
Log on OLoc Loc	as: al System Allo <u>w</u> servi	accountj ice to intera	ct with desktop			
O∐hi≤	account:				Browse	
Pas	sword:					
<u>C</u> on	firm passw	/ord:				

(5) When you reboot the PC, DeviceXPlorer will operate as a service program.

Important

- When connecting with OPC server which runs as windows service, the DCOM configuration is required.
- About the DCOM configurations, please refer to 5.22.
- In Windows10, please clear the check box for "Allow service to interact with desktop".

5.14.2 How to show DeviceXPlorer setting dialog of service program

On Windows Vista or later OS, service program could not be displayed. So, if you would like to show DeviceXPlorer setting, please start or restart "Interactive Services Detection" from right-click menu.

Services						×
File Action View	Help					
	à 🗟 🛛 📷 🕨 🔳 II II 🕨					
Services (Local)	🔍 Services (Local)					
	Interactive Services Detection	Name	Description	Status	Startup Type	•
	Chan the service	🔍 IKE and AuthIP IPsec Keyin	ng Mo The IKEEXT		Manual	_
	<u>Stop</u> the service <u>Pause</u> the service Restart the service	Interactive Services Detect	Start	Starting	Manual Disabled	-
		🔍 IP Helper	Stop	Started	Automatic	
	Description	🔍 IPsec Policy Agent	Pause		Manual	
	Enables user notification of user input	🔍 KtmRm for Distributed	Resume		Manual	
	for interactive services, which enables	🔍 Link-Layer Topology Di	Restart		Manual	Ξ
	access to dialogs created by	🧠 Media Center Extender			Disabled	
	Interactive services when they appear.	🔍 Microsoft .NET Framew	All Tasks 🕨 🕨		Manual	

Following dialog will be shown and please click "View the message".

🐁 Interactive Services Detection
A program running on this computer is trying to display a message
The program might need information form you or your permission to complete a task. Why does this happen?
→ View the message
Ask me later
Show program <u>d</u> etails

Important

- In Windows10, the service programs don't support to display the window by detection of the interactive service. DeviceXPlorer can't be able to display the screen even if you started the detection of the interactive service by the above procedure.

5.14.3 Unregister from service program

(1) Go to Tools -> Options, set "Start as Service Program" to "Execute as Normal Application".

General		UK
Auto Port Close	Glose	Gance
Acceptable Max Count of Async Demand (Co	1000	ounco
Acceptable Max Count of Async Demand (OP	1000	Apply
Maximum number of asynchronous requests	10000	
Protocol Timer TICK (msec)	10	
Monitor Rate (msec)	600	
Project file save folder		
Startun File		
Process Priority	NORMAL	
OPC Thread Priority	NORMAL	
Start as Service Program	Evecute as Normal Application	
Namesnace Delimiter	Service Program	
Extend Tag Delimiter	Execute as Normal Application	
	English	
Automatic Login Lleer	Administrator	
Running Processor Setting	None	
	None	
Undate Rate (mose)	500	
Timer Tick for Asymp Undate Mode (mosc)	10	
Return cache in error	Enable	
Peturn cuccese for communication failure at	Disabled	
Initial DataChange Timeout	15000	
and balachange milleout	10000	1
itart as Service Program his setting is for starting this application as a se rogram, you need to operate in Control Panel.	rvice programIf you want to release this service	

(2) From Control Panel -> Services, open the Properties window for "DeviceXPlorer OPC Server 6".

🔍 Services					— C	X
<u>File Action View</u>	<u>H</u> elp					
(+ +) 📰 📴	Q 📑 🛛 🖬 🕨 🖬 🗤 🕨					
Services (Local)	Services (Local)					
	DeviceXPlorer OPC Server 6	Name	Description	Status	Startup Type	Log On ^
	Stop the service Restart the service	Q DevicePickerUserSvc_56eed DevicesFlowUserSvc_56eed DeviceXPlorer OPC Server 5	This user se Allows Con		Manual Manual Automatic	Local S Local S Local S
		DeviceXPlorer OPC Server 6		Running	Automatic	Local S
		DevQuery Background Disc DHCP Client Diagnostic Execution Service Diagnostic Policy Service Diagnostic Service Host Diagnostic System Host	Enables app Registers an Executes dia The Diagno The Diagno The Diagno	Running Running Running Running	Manual (Trig Automatic Manual (Trig Automatic Manual Manual	Local S Local S Local S Local S Local S Local S
	Extended Standard					,

(3) And stop the service of "DeviceXPlorer OPC Server 6".

			1			
General	Log On	Recovery	Dependencie <i>s</i>			
Service	name:	DeviceXPI	orer OPC Server 6			
Display	name:	DeviceXPI	orer OPC Server 6			
Descrip	tion:			$\langle \rangle$		
Path to C:¥Pro	executat gram Files	le: (x86)¥TAKE	3ISHI¥DeviceXPlorer OPC Server 6¥Bin¥	éDe vic		
Startup	typ <u>e</u> :	Automatic	:	\sim		
Service status: Running Start Stop Pause Resume You can specify the start parameters that apply when you start the service from here. Start parameters:						
Service Service You car from he Start pa	status: i_tart n specify t ire. arameters	Running Stop he start para	Pause Resum meters that apply when you start the series	vice		

5.14.4 Unregister from service program on Windows 10 later

(1) Stop the service of "DeviceXPlorer OPC Server 6" from "service" of the control panel.

(2) Run the command prompt as an administrator and go to the installation directory.

C:¥Users¥seigi>cd C:¥Program Files (x86)¥TAKEBISHI¥DeviceXPlorer OPC Server 6¥Bin

(3) Enter "DeviceXPlorer / RegServer" and execute it.

C:¥Program Files (x86)¥TAKEBISHI¥DeviceXPlorer OPC Server 6¥Bin>DeviceXPlorer/RegServer

5.15 Importing and Exporting

[Import / Export] from File menu, It is possible to output a CSV format or XML format. OPC server to do the export of the tag memory is holding. It is possible import to use at offline mode.



Important

This is can Import and Export file create at Ver.4. But this cannot import CSV file is created by before Ver.3 OPC Server. When CSV file created by Ver.3, please convert at Project Converter[All Program]-[DeviceXPlorer OPC Server 6] - [Project Converter].



5.15.1 Import[Definition]

Import Wizard	
Select File Type:	Select File Type: Select File Type: XML File OSV File MX OPC Server DA configuration file MX OPC Server UA configuration file
	Cancel < <u>B</u> ack <u>N</u> ext > Finish

DeviceXPlorer can import CSV file or XML file exported from DeviceXPlorer.

Select target contents and file path. When import, cannot specify the order of output tags. When importing the MX OPC Server DA configuration file or MX OPC Server UA configuration file, specify the delimiter and encoding type according to the target file to be imported.

mport Wizard	Import
Select File Type:	Select Target Contents:
import:	Select All(A) Deselect All(N)
- Inport	Common Option Structure Port Device Group Tag Event User information Structure Structure Structure
	Output Order for Tags Tag Name Location Address
	Other: Delimiter Comma V Encoding type ANSI V
	File C.¥Users¥Takebishi¥Documents¥TAKEBISHI¥DeviceXPlorer OPC Browse
	Cancel K Mext > Finish

5.15.1.1 Import MX OPC Server DA/UA Configuration File

Overview	
Product Name	MELSOFT MX OPC Server DA/UA
Version	Ver.7.05(DA)/Ver3.06(UA)
Supported Device	MX Device/MX Device(ver.2)

Import the CSV file or TEXT file exported by MX OPC Server DA/UA.

Important

• To use this function, Melsec Ethenet connection (UA only)/Melsec EZ Socket connection function is required.

• The setting to be imported is Device setting, Group setting, and Tag setting.

Only the Port setting is generated in the default setting. Set the port before communication.

Locvice Type Conversion			
MX OPC Server DA	DeviceXPlorer OPC Server Explanation		
В	В	Link relay	
CC	CC	Counter coil	
CN	CN	Counter Present value	
CS	CS	Counter Contact	
D	D	Data register	
EG	EG	GOT register	
F	F	Annunciator	
L	L	Latch relay	
LCC	LCC	Long counter coil	
LCN	LCN	Long counter current value	
LCS	LCS	Long counter contact	
LSTC	LSTC	Long retentive timer coil	
LSTN	LSTN	Long retentive timer current value	
LSTS	LSTS	Long retentive timer contact	
LTC	LTC	Long timer coil	
LTN	LTN	Long timer current value	
LTS	LTS	Long timer contact	
М	М	Internal relay	
R	R	File register	
SB	SB	Link special relay	
SD	SD	Special register	
SM	SM	Special relay	
STC	\mathbf{SC}	Retentive Timer Coil	
STN	SN	Retentive Timer Present value	
STS	SS	Retentive Timer Contact	
SW	SW	Link special register	
TC	TC	Timer Coil	
TN	TN	Timer Present value	
TS	TS	Timer Contact	
W	W	Link register	
WR	WR	CC-Link input register	
WW	WW	CC-Link output register	
X	X	Input relay	
Y	Y	Output relay	
ZR	ZR	File register	

[Device Type Conversion Table]

MX OPC Server DA	DeviceXPlorer OPC Server	Explanation
INT	SHORT	Signed 16-bit integer.
UINT, WORD	USHORT	Unsigned 16-bit integer.
REAL	FLOAT	32-bit floating point (IEEE).
LREAL	DOUBLE	64-bit floating point (IEEE).
BOOL	BOOL	Digital, one bit.
UDINT, DWORD	LONG	Unsigned 32-bit integer.
DINT	ULONG	Signed 32-bit integer.
COUNTER	SHORT	Signed 16-bit integer (Counter).
TIMER	SHORT	Signed 16-bit integer (Timer).
RTIMER	SHORT	Signed 16-bit integer (Retentive timer).
UTIMER	USHORT	Unsigned 16-bit integer (Unsigned timer).
UCOUNTER	USHORT	Unsigned 16-bit integer (Unsigned counter).
URTIMER	USHORT	Unsigned 16-bit integer (Unsigned retentive timer).
LTIMER	ULONG	Unsigned 32-bit integer (Long timer).
LCOUNTER	ULONG	Unsigned 32-bit integer (Long counter).
LRTIMER	ULONG	Unsigned 32-bit integer (Long retentive timer).
STRING	STRING	Text stored internally as a 16-bit integer (ASCII, 2 x
		8-bit characters per word).
WSTRING	STRING	Text stored internally as a 16-bit integer (UNICODE,
		1 x 16-bit character per word).

[Data Type Conversion Table]

In MX OPC Server, the BOOL array tag is 1 bit per element. (In DxpSERVER, BOOL array tag is 16 bits per element) When importing a BOOL array tag, convert it to cover all the devices with the BOOL type array tag set in MX OPC Server.

Example 1:

MX OPC Server (before conversion): M7 Bool array size 15 Read range: M7 to M21 (15bit) DxpSERVER (after conversion): M0 Bool Array size 2 Read range: M0 to M32 (32bit)

Example 2:

MX OPC Server (before conversion): D0.F Bool Array size 3 Read range: D0.F to D1.1 (3bit) DxpSERVER (after conversion): D0 Bool Array size 2 Read range: D0.0 to D1.F (32bit)

5.15.2 Export[Definition]

Export Wizard					
Select File Type: Export:	Select File Type: Select File Type: OSV File XML File				
		Cancel	< <u>B</u> ack	Next >	Finish

DeviceXPlorer can export currently opened project file as CSV or XML format.

Select target contents and file path to export. And it can specify output order for tags as tag name or location address.

Export Wizard			
E	xport:		
Select File Type:	Select Target Contents:		
→ Export:	Select All(<u>A</u>) Deselect All(<u>N</u>)		
	✓ Common ✓ Option ✓ Device ✓ Group ✓ User information	⊡ St <u>r</u> ucture ⊡ <u>T</u> ag	<mark>∕ P</mark> ort ∕ <u>E</u> vent
	Output Order for Tags Tag Name O Location Address		
	Other: Delimiter Enco	ding type	~
	File D¥Users¥Takebishi¥Documents¥TA	KEBISHI¥DeviceXPlorer O	PC Browse
	Cancel	< <u>B</u> ack <u>N</u> ex	t > Finish

5.15.3 Import[TagMemory]

DeviceXPlorer can import TagMemory. Select import target device and file path.

Import Tag Merr	nory
Device	
Device1	
Device2	
Device3	
Device4	
Device5	
Device6	
Device7	
Device8	
Device9	
SYSTEM	
Data refresh	before export.
<u>F</u> ile	Tag memory snp
<u>L</u> ocation	C#Program Files#TAKEBISHI#DeviceXPlorer OPC Server 5#TagMemory 👻 Reference
	OK Cancel

When importing, confirmation will be displayed.



5.15.4 Export[TagMemory]

Export TagMemory(cache, timestamp, quality) that DeviceXPlorer has currently. Select target device.

If [Data refresh before export.] is checked, DeviceXPlorer updates all data to the latest value before exporting TagMemory.

xport Tag Memo	ry 📃
Device	
Device1	
Device2	
Device3	
Device4	
Device5	
Device6	
Device7	
Device8	
Device9	
SYSTEM	
🔲 Data refresh b	efore <u>e</u> xport.
<u>F</u> ile	Tagmemory.snp
<u>L</u> ocation	C:¥Program Files¥TAKEBISHI¥DeviceXPlorer OPC Server 5¥TagMemory 👻 Reference
	OK Cancel

5.15.5 Tag Import

It is possible to create tags by importing the tag definition file. Right-click a device or group node in Project Explorer, and click "Tag Import".

📝 📂 💾 🐰 🛙			2 💆 🙎	؛ 😭 🖓 🖌	💩 🎭 🧠 🌍
Project Explorer		🗢 🏨 🗙	Tag List : Device	1 x	
10 💴 🖬 🏹		😨 🖾 🔎 🍇 Device1			
Project 'Untitled'			Name		Data Type
SYSTEM [Memory]	1ap]		- lag		Short
Device 1 [Mitsubishi Mitsubishi M		New	•		
Device2 [Rockwell AB]		Port Chan	ge		
	B	Paste	CtrI+V		
		Delete	Delete		
		Expand All	I		
		Collapse A	II		
	~	Show Port	Always		
		Tag Impor	t		
		Statistics			
		Event	Ctrl+E		
		Property	Alt+Enter		

Tag import setti	ngs						×
File						<u>B</u> rowse	
Target file t	type	KEPServerEX		~	Extension	.CSV	~
Encoding		UTF-8	~				
					OK	Cance	el 🛛

Items	Description
File	Select the tag definition file.
Target file type	Select the type of the target file.
Extension	Select the Extension of the target file.
Encoding	Select the Encoding of the target file.

5.15.5.1 Import the tag definition file of KEPServerEX

Name	Error Contents
Tag	A tag with the same tag name already exists.
Ta"g	Tag name is invalid.
Tag1	Device type is invalid.
Tag2	Data type is invalid.
Tag3	The attribute is invalid.

Import the tag definition file exported by KEPServerEX from Kepware.

This dialog shows the name and error contents of the tag that failed conversion.

Click "OK" to import the tags that succeeded conversion.

Check "Overwrite existing tags with the same tag name" and click "OK", it is possible to import tags with the error "A tag with the same tag name already exists."

Refer to "5.15.5.2 Error List" for the detail of Error.

[Supported suite list]

Suite	e Name	
KEPServerEX	DeviceXPlorer OPC Server	
Mitsubishi Ethernet	MELSEC Ethernet	
Mitsubishi Serial	MELSEC Serial	
Omron Fins Ethernet	SYSMAC Ethernet	
Toyopuc Ethernet	TOYOPUC Ethernet	
Yaskawa Ethernet	MP Ethernet	
Yaskawa Serial	MP Serial	
Keyence Ethernet	KV Ethernet	
Allen-Bradley ControlLogix Ethernet	AB Ethernet	
Siemens TCP/IP Ethernet	SIMATIC Ethernet	
GE SNP	GE Serial	
Fanuc Focas Ethernet	FANUC FOCAS	
Modbus Serial	Madhua Carial	
Modbus ASCII	Modbus Serial	

[Supported Data Type list]

Da	ata Type	Description	
KEPServerEX	DeviceXPlorer		
Boolean	BOOL	$1\mathrm{bit}^{*1}$	
Char	BYTE	8 bit signed integers data	
Byte	UBYTE	8 bit unsigned integers data	
Short	SHORT	16 bit signed integers data	
Word	USHORT	16 bit unsigned integers data	
Long	LONG	32 bit signed integers data	
DWord	ULONG	32 bit unsigned integers data	
LLong	LONGLONG	64 bit signed integers data	
QWord	ULONGLONG	64 bit signed integers data	
Float	FLOAT	32 bit real value IEEE754	
Double	DOUBLE	64 bit real value IEEE754	
String	STRING	Null-terminated string(Unicode) *2	
BCD	SHORT (Calculation: BCD Format)	2 BytePackBCD Range 0 - 9999	
LBCD	LONG (Calculation: BCD Format)	4 BytePackBCD Range 0 - 99999999	
Date	N/A	32/64bit Datetime	

*1 In case of KEPSeverEX, units per size of logical type array tags is bit. Whereas, it at DeviceXPlorer is byte or word (depends on the basic data type for each suite).

*2 Array tag is not supported.

[Tutorial exporting the tag definition file from KEPServerEX]

(1) Right-click the device (or Tag Group) and click "Export CSV..." to export the tag definition file.



(2) Specify the destination, the file name, the encoding, and click "Save".

🕸 Export to CS	ïV				×
Save in:	E Desktop		~	G 🗊 📂 🖽 -	
Quick access	OneDr	ive	2	seigi	
Desktop	This P	c		Libraries	
	Network		•	OPCServer	
Libraries This PC					
Network	File <u>n</u> ame:	Device1.csv		~	<u>S</u> ave
	Save as type:	CSV Files (*.csv)		~	Cancel
	Encoding	UTF-8		\sim	

5.15.5.2 **Error List**

Show the list of error output when tag definition information conversion fails.

Error	Description		
Tag name is invalid	Tag name is longer than 64 characters or might contain		
	inhibited characters.		
Device type is invalid.	Unsupported device type might be specified.		
Dovice Number is invalid	Device number out of range might be specified or the format		
Device runiber is invanu.	might be incorrect.		
Data type is invalid.	Unsupported data type might be specified.		
The attribute is invalid.	Unsupported attribute might be specified		
Comment is invalid.	Comments might contain inhibited characters.		
Scaling is invalid.	Unsupported scaling type might be specified.		
Raw Min is invalid.	Raw Low value might be incorrect.		
Raw Max is invalid.	Raw High value might be incorrect.		
Scaled Min is invalid.	Scaled Low value might be incorrect.		
Scaled Max is invalid.	Scaled High value might be incorrect.		
The unit is invalid.	Units might contain inhibited characters.		
The format of Address is invalid	The format of Address in the tag definition file of KEPServerEX		
The format of Address is invalid.	might be incorrect.		
Tag address is invalid	The tag address might be incorrect.		
	This error can occur only for AB Ethernet.		
	The same tag name of tag already exists in the tag list.		
A tag with the same tag name	Check "Overwrite existing tags with the same tag name" on the		
already exists.	check import tag dialog, and click "OK" to overwrite existing		
	tags and import.		

Important

The name of tag definition at KEPServerEX may have characters treated as delimiter by DeviceXPlorer. It is not possible to import the tag definition has delimiter character in tag name.

5.16 Hot Configuration

The DeviceXPlorer can change a Device settings and Tag settings also in the connection from a client. Notes are indicated to be an item reflected in below by Hot Configuration.

Object	Hot Configuration	Note		
Common Properties	Enable	There are some properties to update after PC		
Common r roper des		re-starts.		
Project Properties	Enable	There are some properties to update after PC		
		re-starts.		
User Information	Enable			
Dout	Enable:Add/Edit	Disable to change Port name.		
Port	Disable:Delete	When change properties, Port is re-connected.		
	Enable:Add/Edit	Disable to change Device name.		
Device	Disable:Delete	When change properties, Port is re-connected		
		in some models.		
	Enable	Disable to change follows properties,		
Device Option		-Topic name		
		-System Tag uses \$ char		
C	Enable:Add/Edit	D'adda ta da an Cana a an		
Group	Disable:Delete	Disable to change Group name.		
Ш а н	Enable:Add/Edit			
lag	Disable:Delete			
Mathan Imag	Enable:Add/Edit			
Wethod lag	Disable:Delete			
Structure Tag	Enable: Only Add	Disable to change Structure type.		
Structure Template	Enable: Only Add	Disable to edit or delete member.		
Script	Enable:Add/Edit/Del			
Or creation of Drainst	Disable	Disable to new project, to open project file, to close		
Operation of Project		under communication.		
In the section of the	Enable	When you execute import under communication,		
mport / Export		Configuration is skipped, not overwrite.		

Important

Even if an Object cannot delete, it which is not used for communication can be deleted.

5.17 Redundant Communication

The redundant communication function continues communication by automatically switching lines when a communication failure occurs. Using this function, you can easily configure a redundant system without worrying about switching communication lines.



[Settings]

(1) In the Device Options screen, turn on the redundant communication function.

(2) Select "Auto switching".

(3) Select a registered device for the standby device.

Communication Setting Update Bate 1000 msec Eix Update rate Max age 0 msec Skip communication after retry Alt tase communication	 Simulation Signal Sine Ramp Bandom Shared Memory 		Cancel
Slow polling mode Slow Interval 10000 msec Return errgr immediately.	DxpLink Communication Ter DDE/SuiteLink	m 1 min	
Standby device Device2 ▼ Standby type ○ Cold	Applica <u>t</u> ion Name Topi <u>c</u> Name	Dxp Device1	
Switching Type Auto Manual Return to primay automatically Return by Both System Switching Condition D1 == CommFailure(0x18) m	Other Save Unknown I Reject Unknown Display System System Tag use	tem Item Tag s \$ char	

In the figure above, communication switches to Device2 when a communication failure occurs at Device1, and returns to Device1 when a communication failure occurs at Device2.

For configuration about Redundant, please refer to 5.4.5.

5.17.1 Warm Standby

Also during normalcy system communication, it communicates by a standby system and performs a communication check.

In the case of Warm Standby, while disconnecting Primary system, when it can communicate by Standby system, it changes to a Standby system.

When Standby system is also under disconnection, it communicates with Primary system.

(It shifts to slow polling mode at the time of slow polling mode effective.) During disconnection, both systems always perform a return check by both systems, and it changes them to the system which returned.

5.17.2 Cold Standby

To the timing which was disconnected, Primary system changes communication pathway to Standby system. When Standby system is also under disconnection, communication pathway is changed to Primary system.

Note

When automatic switching occurs, communication is not automatically restored to the normal system even when it recovers.

If you want to manually return communication to the normal system, write FALSE to the "\$Standby" system tag.

5.18 Communication Period

The communication period of DeviceXPlorer differs for every interface and configurations.

Interface	Communication Period	
OPC DA	Specified by OPC client's update rate.	
ODC IIA	But if you check "Fix Update Rate" of Device Option, DeviceXPlorer obeys	
OPC UA	"Update Rate" of Device Option.	
OPC A&E		
SuiteLink	Specified by "Update Rate" of Device Option.	
DxpLink		
Script	Specified by "Update Rate" of Script.	
Device Monitor	Specified by "Monitor Rate" of Common Properties.	

These interfaces perform communications processing a best communication cycle. But to maintain past compatibility, only the OPC DA interface is preparing the mode which does not perform the optimal communications processing. (Client unit communication)

You can configure Client unit communication in "Communication per Client" of Project Properties.

The difference in operation by setup of the client unit communication in an OPC DA interface is as follows.

Communication per Client	Communication Period
Disable(Default)	DeviceXPlorer selects best communication cycle
	Communications processing is performed the renewal cycle of OPC for
Enable	every OPC group registered from an OPC client.
	Compared with the time of "Disable", Communication Rate becomes high.

5.19 Slow Polling Mode

When communication error such as timeout error and open error occurs, DeviceXPlorer reduce communication rate. You can configure it on Device Option. At the time communication status is restored, DeviceXPlorer leaves Slow Polling mode.

Property [Device1]			
Device Option Publisher			
Communication Setting Update <u>R</u> ate 1000 msec Eix Update rate Max age 0 msec Skip communication after retry All <u>t</u> ags communication	Simulation Signal		
✓ <u>Slow polling mode</u> Slo <u>w</u> Interval 10000 msec □ Return err <u>o</u> r immediately.	☑ D <u>x</u> pLink <u>C</u> ommunication Term 1		
<u>R</u> edundant Communication Standby device	✓ SuiteLink(<u>D</u>) Applica <u>t</u> ion Name DXPSV6		

For configuration about Slow Polling Mode, please refer to 5.4.5.

If \$SlowpollingMode is supervised, you can understands whether the device is in Slow Polling Mode or not. If this tag is TRUE, under Slow Polling Mode. If this tag is FALSE, under normal communication.

Shows message about Slow Polling.

Message	Contents	
Entering Slowpolling Mode.	DeviceXPlorer enters under Slow Polling Mode.	
Leaving Slowpolling Mode.	DeviceXPlorer leaves from Slow Polling Mode.	

Note

If you'd like to reduce communication time under Slow Polling Mode, please check "Return error immediately".

5.20 User Management

5.20.1 Configuration

You can configure of operators.

Usually, it is set up by Administrator authority (with no password), and restriction of operation is absolutely none.

Untitled.dxp - DeviceXPlorer OPC	Server*		
File Edit View Project Too	s Help		
🗄 📝 😕 🎮 L X 🖪	User Management Configuration		
090 C	Launch OPC Client		
Project Explorer	Logout agnostics		
	Option Device I		
🔢 Project 'Untitled'	Name Data Type		
Item	Description		
Configuration	Configure User.		
	Login user. The user name is displayed in status bar.		
Login	administrator 🔍 MonitorStop [Decimal] 🖏 Disconnected		
	Logout user. Displayed (Logout) in status bar.		
Logout	all (Logout) I MonitorStop [Decimal] 🖏 Disconnected		

User authority		×
<u>U</u> ser name	Administrator 🗸	
<u>P</u> asswrod		
Password(<u>C</u> onfirm)		
Contents	Check	*
🖃 Port	📝 Enable	
Edit	📝 Enable	
New	🔽 Enable	E
Delete	🔽 Enable	
Device	📝 Enable	
. Tag	🔽 Enable	
	📝 Enable	
 Device folder 	📝 Enable	
	📝 Enable	-
<u>N</u> ew <u>D</u> e	elete OK Cancel Appl	у

Item	Description		
User name	Specify the User name		
Password	Specify the password		
Password(Confirm)	Specify the password for a check		
Contents	The operation authority of the user who specified is set up. Please refer to 5.20.2 for		
	explanation of each contents. You cannot modify "Administrator" authority.		
New	Create a new user.		
Delete	Delete a user. You cannot delete "Administrator".		

Iter	m	Description
Port	Edit	Enable to configure Port
	New	Enable to create Port
	Delete	Enable to delete Port
Device	Edit	Enable to configure Device
	New	Enable to create Device
	Delete	Enable to delete Device
Tag	Edit	Enable to configure Tag
	New	Enable to create Tag
	Delete	Enable to delete Tag
Group	Edit	Enable to configure Group
	New	Enable to create Group
	Delete	Enable to delete Group
Device Folder	Edit	Enable to configure Device Folder
	New	Enable to create Device Folder
	Delete	Enable to delete Device Folder
Structure	Edit	Enable to configure Structure Tag and Structure Template
	New	Enable to create Structure Tag and Structure Template
	Delete	Enable to delete Structure Tag and Structure Template
Script	Edit	Enable to configure Script
	New	Enable to create Script
	Delete	Enable to delete Script
User	Edit	Enable to configure User authority
	New	Enable to create User
	Delete	Enable to delete User
Project File	New	Enable to create new Project file
	Load	Enable to load project file
	Save	Enable to save project file
Setting of Project	Edit	Enable to configure Common Properties and Project Properties
Monitor	Read	Enable to monitor of Device Monitor, Watch Monitor, and Register
		Monitor.
	Write	Enable to write from GUI
Application	Exit	Enable to exit DeviceXPlorer
OPC UA	UserName/Password	Enable to connect with user name / password authentication via
		OPC UA.
	X509 Certificate	Enable to connect with user X509 user authentication via OPC
	User	UA.
	SecurityAdmin	Become a user with security administrator authority in OPC UA
		communication.

Important

- To configure license, You need to login as "Administrator"

- User authority is invalid to the client at the time of carrying out COM starting. For example, the application which carried out COM starting also in the state

of login by the user without the end authority of application carries out the end of application by the connection release from a client.
5.20.3 Auto Login

You can specify Login User when DeviceXPlorer starts in Common Properties. If you failed to specify Automatic Login User, DeviceXPlorer start as logoff status.

mmon Properties \ Project Properties \			OK
General		~	
Auto Port Close	Close		Cancel
Acceptable Max Count of Async Demand (Co	1000		A 1
Acceptable Max Count of Async Demand (OP	1000		Apply
Maximum number of asynchronous requests	10000		
Protocol Timer TICK (msec)	10		
Monitor Rate (msec)	600		
Project file save folder			
Startup File			
Process Priority	NORMAL		
OPC Thread Priority	NORMAL		
Start as Service Program	Execute as Normal Application		
Namespace Delimiter			
Extend Tag Delimiter	:		
Language	English		
Automatic Login User	Administrator	 -	
Running Processor Setting	None		
OPC			
Update Rate (msec)	500		
Timer Tick for Async Update Mode (msec)	10		
Return cache in error	Enable		
Return success for communication failure at	Disabled		
Initial DataChange Timeout	15000		
		Ť.	
i tomatic Login User lect the login user. This setting becomes effecti	ve after DeviceXPlorer is restarted.		

Specify User name and password.

Login				×
<u>U</u> ser name	Administrator			\sim
<u>P</u> asswrod				
		OK	Cance	l

5.21 Change display language dynamically

You can change the display language of DeviceXPlorer without restart application.

[Settings]

- (1) Go to Tools -> Options, specify "Language", and select other language.
- (2) Click "OK".



(3) DeviceXPlorer changes the language.

😍 Untitled.dxp - DeviceXPlorer OPC Server	¢				Untitled.dxp - DeviceXPlorer OPC Serve	è.			
File Edit View Project Tools Hel	lp				ファイルの 編集の 表示M フロジェ	י הארע מאל	งปวิท		
122 🔁 🛛 🕹 🖻 🗖	1 🔎 🖓 ⋟ 🤋	1 2 8 9 9 9 6	a o 🖉	Core Core	7233011	1 🗩 💌	<mark>> 9</mark> % % % %	🥥 🛦 🌍	🚔 🍈 OPC
Project Explorer 🗢 🗷 🗙	Tag List : Device1 🗙 Str	ucture : Line1 Diagnostics Li	it.		プロラェクトエクスプローラー	タグリスト: Device	1 x 構造体:Line1 診測以入	h.	
	Device1						Device 1	No.	
Project 'Untitled' SYSTEM SYSTEM [MemoryMap] Device1 [Mitsobishi MELSEC] Device1 [Mitsobishi MELSEC] Device1 Port [Ethernet]	Name -K3 Tag001 -K3 Tag002 -K3 Tag003 -K3 Tag003 -K3 Tag004 -K3 Tag004	Data Type Short Short Short Short Short	Location D1 D2 D3 D4	Value	国 プロジェクト Untitled G-US SYSTEM SYSTEM (XEU/フップ) Device1 (三菱電機 MELSEC) Device1Port [Ethernet]	974 50 Tag001 50 Tag002 50 Tag003 50 Tag004 71	≣ Short Short Short D/(7+ (Device1)	ロケーション D1 D2 D8	視在個
	Correction Control Con	Option (Publisher \ Option Test PFC B O/o-E @@ PAE Potocol Block Access Command RK 0 125 126 126 126 127 128 128 128 128 128 128 128 128	OL OopA (vitana Ol O2 O1 (U System Di Ostendo			02 14900 102 149000 102 14900 102 149008 102 149008 102 149008 102 149008	デバイス オブション パブリッシャ 種紙テスト(1) CPUタイプ ○日の子 ○日の子 ○日の子 ○日本ケンロシスコンド使用(10) アルサワーフ キットワーク世号(3) ユニットの番号(3) ユニットの番号(3) ユニットの番号(4) の ・ のなし(3) ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・	OL OGNA)))))))))))))))))))	OA OF3

5.22 DCOM Configuration

This section describes how to configure DCOM to connect from a remote computer using OPC. The examples provided in this section are typical configuration examples. Please modify each setting based on your system security needs.

Note

Please refer to related documents on OS for more details on DCOM.

Important

When DeviceXPlorer runs as windows service, the DCOM configuration is required.

When OPC Client application runs as windows service and connects with DeviceXPlorer, the DCOM configuration is required.

5.22.1 Overview

Client user must be authenticated on the machine on which the OPC server is running in order to enable DCOM connection. Authentication of the client machine user is normally done by configuring one user account and one password on both machines running in a work group. From the user account on the client machine, you log on to the local PC, remote log on to the server machine, and run the OPC server. The following description provides an example of configuration on the OPC server machine, unless otherwise indicated.

	8 F 8		
Machine	Field	Simple	Secure
Gunna	Authentication Level	None	Connect
	Start Access Right	Everyone	Arbitrary user name
Server	Access Right	Everyone	Arbitrary user name
	Identity	Interactive User	Interactive user/Launching user
Client	Pre-defined Authentication Level	None	None

See below for a configuration example of using DCOM:

* "Simple" configuration is for when security is not emphasized.

To use DCOM in a Windows workgroup environment, start "Local Security Policy" from Administrative Tools and set "Network Access" Sharing and security model for local accounts" to "Classic." This step is not required when you wish to use DCOM in the domain environment.

🚋 Local Security Policy			×
<u>File Action View H</u> elp			
🗢 🔿 🗾 🗙 🗐 🛃 🗊			
🚡 Security Settings 🔺	Policy	Security Setting	
Account Policies	B Network access: Sharing and security model for local acco	Classic - local users authenticate as themsel	
Local Policies	Network security: Allow Local System to use computer ide	Not Defined	
Audit Policy	Network security: Allow LocalSystem NULL session fallback	Not Defined	
User Rights Assignment	B Network Security: Allow PKU2U authentication requests to	Not Defined	
Security Options Windows Eirewall with Advanced	B Network security: Configure encryption types allowed for	Not Defined	
Network List Manager Policies	🐻 Network security: Do not store LAN Manager hash value o	Enabled	
Public Key Policies	🖾 Network security: Force logoff when logon hours expire	Disabled	
Software Restriction Policies	🔯 Network security: LAN Manager authentication level	Not Defined	
4 III >>	B Network security: LDAP client signing requirements	Negotiate signing	Ŧ

Important

You cannot connect via DCOM if checking the "Windows firewall" in property window of "Local Area Connection" So you should not check this option button.

DCOM can be connected by making the firewall effective by setting security.

5.22.2 Procedure

[Start DCOM Configuration Utility]

From the Start menu, select "Run" and enter "DCOMCNFG.EXE" to launch the DCOM configuration utility.

Note

You must log on with Administrator rights to configure DCOM.

[Default Properties]

Combined utilities start Navigate through "Component Services" > "Computer" -> "My Computer." Right mouse click on "My Computer," open the Properties page from the pop-up menu, and select the "Default Properties" tab.

	es		? ×
Default Protocols	COM Se	ecurity	MSDTC
General	Options	Def	ault Properties
Enable Distributed	COM on this compute	er	
Enable COM Intern	et Services on this c	omputer	
		Properties	
	OM Communication 1	ropenies	
The Authentication i	Level specifies secur	ty at the pace	ket level.
Default Authentica	tion Level:		
Packet Integrity		\sim	
who is calling them, using the client's ide	and whether the app ntity.	lication can d	lo operations
who is calling them, using the client's ide Default Impersonal	and whether the app ntity. tion Level:	lication can d	lo operations
who is calling them, using the client's ide Default Impersonal Identify	and whether the app ntity. tion Level:	lication can d	lo operations
who is calling them, using the client's ide Default Impersonal Identify Security for reference and that the default i	and whether the app ntity. tion Level: e tracking can be pro impersonation level is nal security for refere	Vided if authors of anonymous tracking	lo operations entication is used ous.

* Check the "Enable Distributed COM on this Computer" check box.

- * Set "Default Authentication Level" to "Packet Integrity."
- * Set "Default Impersonation Level" to "Identify."

Important

On the client machine, set "Default Authentication Level" to "Packet Integrity."

[COM Security] The change in the DCOM setting is needed.



"DCOMCNFG.EXE" is started from the command line or "Component Service" is opened from the management tool of control panel, and "COM security" tab is selected.

Access Permission		?	×
Default Security			
Group or user names:			
Everyone			
SELF SYSTEM			
Administrators (DESKTOP-	7H22IBL\Administrate	ors)	
		Demen	
	Add	Remov	e
Permissions for Everyone	Allow	Denv	
	74011	Deny	
Local Access			
Local Access Remote Access			
Local Access Remote Access			
Local Access Remote Access			
Local Access Remote Access			
Local Access Remote Access			
Local Access Remote Access			
Local Access Remote Access			

The dialog opens when "Edit limits" button of "Access permit" is pushed. "Everyone" and "SYSTEM" is selected to access OPCEnum.exe remotely, and "Remote Access" is set to "Allow".

Launch and Activation Permission	n	? <mark>×</mark>
Default Security		
Group or user names:		
SYSTEM .		
Administrators (PC\Administra	itors)	
ANONYMOUS LOGON		
& INTERACTIVE		
	A <u>d</u> d	<u>R</u> emove
Permissions for Everyone	Allow	Deny
Local Launch	\checkmark	
Remote Launch		
Local Activation	v	
Remote Activation	\checkmark	
Learn about access control and pe	ermissions	
	ОК	Cancel

The dialog opens when "Edit limits" button of "Access permit of starting and making actively" is pushed. "Everyone" and "SYSTEM" is selected, and "Remote Launch" and "Remote Activation" are set to "Allow".

Important

If client application runs as window service, please add permission to INTERACTIVE and SYSTEM.

[Specific Properties (General)]

Right mouse click on "DeviceXPlorer OPC Server 6" from "DCOM Config" under "My Computer", and select Properties from the pop-up menu.

 Component Services File Action View Window File Action View Window 	Help 2 📷 1 🎦 1 🖭 🔠 🏛 🏛	_	
Console Root	DebugTargetAdapters Cla	Actions	
Component Services	DEFRAGSVC service Delivery Optimization	DCOM Config	-
 Computers My Computer COM+ Applicatio DCOM Config Running Processe Distributed Transa Event Viewer (Local) Services (Local) 	Delivery Optimization Managment Delivery Optimization User Desktop Wallpaper Factory DetectionAndSharing DevicesFlow DevicesFlowExperienceFlow DeviceXPlorer OPC Server 5 DeviceXPlorer OPC Server 6 DfsShlEx.dll View DictationHost Class DispEZSvCommunication Class	More Actions	,

DeviceXPlorer OPC Server 6 Properties ? X			
General Location Securi	ity Endpoints Identity		
General properties of this	s DCOM application		
Application Name:	DeviceXPlorer OPC Server 6		
Application ID:	{8D8CD405-1EA6-45bf-9AAE-A69D	53A500	06}
Application Type:	Local Server		
Authentication Level:	Packet Integrity		\sim
Local Path:			
Learn more about <u>setting t</u>	hese properties.		
	OK Cancel	Ap	oply

* Set the "Authentication Level" to "Packet Integrity."

[Specific Properties (Location)] Select the "Location" tab.

General Location Security Endpoints Identity	
The following settings allow DCOM to locate the correct compu- application. If you make more than one selection, then DCOM applicable one. Client applications may overide your selections.	iter for this uses the first
Run application on the computer where the data is located.	
Run application on this computer.	
Run application on the <u>f</u> ollowing computer:	
	wse
Learn more about <u>setting these properties</u> .	
OK Cancel	Apply

*Check "Run application on this computer."

[Specific Properties (Security)] Select "Customize" in each field and press "Edit."

DeviceXPlore	er OPC	Server 6 P	roperties			?	Х
General Lo	cation	Security	Endpoints	Identity			
-Launch	and Ac	tivation Pe	rmissions —				
O⊔se	Defaul	t					
Ou <u>s</u>	tomize				Ē	dit	
Access	Permis	sions					
OUse	Defaul	t					
Ous	to <u>m</u> ize)				E	<u>d</u> it	
Configu	ration F	Permissions					
OUse	Defaul	t					
Ous	tomize				E	dit	
Learn more	about	setting thes	se properties	<u>.</u>			
			OK			- t	
			OK	C	ancel	App	dγ

Launch and Activation Permission	Access Permission
Security	Security
Group or user names: SYSTEM Administrators (PC\Administrators) ANONYMOUS LOGON Everyone INTERACTIVE	Group or user names: ANONYMOUS LOGON Everyone SELF SYSTEM Administrators (PC\Administrators)
A <u>d</u> d <u>R</u> emove	A <u>d</u> d <u>R</u> emove
Permissions for Everyone Allow Deny	Permissions for Everyone Allow Deny
Local Launch Image: Constraint of the second seco	Local Access Remote Access
Leam about access control and permissions OK Cancel	Leam about access control and permissions OK Cancel

*Add "Everyone" and "SYSTEM" to "launch permissions," "access permissions," and "configuration permissions."

[Specific Properties (ID/Identity)]

Select the "ID" tab, and specify the user account that runs the application.

DeviceXPlorer O	PC Server 6 P	roperties			?	×
General Locatio	on Security	Endpoints	Identity			
Which user acc	ount do you w	ant to use to) run this ap	plication	?	
The interso	tive user }					
◯ The <u>l</u> aunchin	ng user.					
◯ This <u>u</u> ser.						
Us <u>e</u> r:					Browse	
Password:						
Confirm passy	vord:					
O The system	account (servi	ces only).				
Learn more abo	ut <u>setting thes</u>	se properties				
	[ОК	Can	icel	A	oply

Select "This User" and specify a user that has Administrator rights. Or select "System Account" to run it as a service program. When launching DeviceXPlorer as a service, it becomes a "System Account," and you cannot specify it as an "Interactive User" or "Launching User."

Important	
Restart computer with changing DCOM Configuration.	

[OPCEnum Settings] Right mouse click on "OpcEnum" from "DCOM Config" under "My Computer", and select Properties from the pop-up menu.

Component Services			
💩 File Action View Window	Help		
🗢 🔿 🞽 🖬 🗙 🗐 🙆 🖡	2 🖬 🏦 🎫	B 🛄 🗒	
📄 Console Root	Name	Application ID	^
 Console Root Component Services Computers Computers COM+ Applicatio COM+ Applicatio COM+ Config Running Processe Distributed Transa Event Viewer (Local) Services (Local) 	Name MiracastTestRe MixedRealityCap MixedRealityCap MoUsoCoreWor MoUsoCoreWor MoUx Agent Host MSDAINITIALIZE MsRdpSessionM NCLUA NOFAPI Network and Sh NCLUA NDFAPI Network and Sh Offline Files Serv ODE Bio Enroll OpeEnum OpeEnum OpeSearch Des Out Of Proc Ma PaymentsSvc Pen Workspace Denum	Application ID {39214908-5362-44b4-97f4-1aa724d3e0da} {EE3C7093-A852-49BA-8AC8-7DFBEC469F72} {7e0423cd-1119-0928-900c-e6d4a52a0715} {D726464B-98F1-4627-86CD-4A082A1E5307} {1111A26D-EF95-4A45-9F55-21E52ADF9887} {2206CDB0-19C1-11D1-89E0-00C04FD7A829} {681DE8B3-DFB1-4C0E-9D9A-89CA730DE93F} {412E0F20-6C5B-43EC-879F-DA444A416EAC} {FA1456D3-4897-4f9c-8511-2786161DC333} {F3D3AA8D-EF96-4470-848E-BD708803047A} {27AF75ED-20D9-11D1-B1CE-00805FC1270E} {C96887DA-A652-4426-905E-4A37546F847C} {7A076CE1-4831-452a-A4F1-0304C8738100} {47E6DCAF-41F8-441C-BD0E-A50D5FE6C4D1} {52551A19-B337-498d-AE75-2283E29902DE} {E055885B-22B0-4E15-A34D-46C58AB320AD} {0771f7af-8de6-4bce-9528-2d4312cb8168} 12486D44-4921-11D2-A494-3CB306C10000} View 7D-8ADB02926F4B} {D-6D319FB7F886} 4050815A-A8D5-434B-B9A3-2FFD162F2B7D } {FSA6ACF4-FFE0-4934-AE1D-5F960EA0AAD9} {FSA6ACF4-FFE0-4934-AE1D-5F960EA0AAD9}	~
	PenIMC4v2	{953E4863-7AD1-4DAE-B2BD-108F1D57967B}	
	PerAppRuntime	{15c20b67-12e7-4bb6-92bb-7aff07997402}	
< >	PerceptionSimul	{1B162A5B-B67A-4468-9613-C3F9765B353B}	~

OpcEnum	n Propertie	25				?	×
General	Location	Security	Endpoints	Identity			
Gener	al propertie	s of this [COM applica	tion			
Appli	ication Nar	ne: Op	cEnum				
Appli	ication ID:	{1	3486D44-482	21-11D2-/	\494-3CB3	06C1000	00}
Appli	ication Typ	e: Lo	cal Service				
Auth	entication	Level: F	acket Integrit	у			\sim
Serv	ice Name:	O	ocEnum				
Learn m	ore about s	setting the	se properties				
			OK	(Cancel	Ap	ply

 \ast Set the "Authentication Level" to "Packet Integrity ."

[Specific Properties (Location)] Select the "Location" tab.

OpcEnun	n Propertie	es				?	×
General	Location	Security	Endpoints	Identity			
The foll applical applical	owing settin ion. If you r ble one. Clie	igs allow D nake more ent applica	ICOM to loca than one sel tions may ove	te the correc lection, then eride your se	t compu DCOM u lections.	ter for t uses the	his e first
Run	application	on the co	mputer where	e the data is	located.		
🗹 Run	application	on this co	mputer.				
Run	application	on the fol	owing compu	uter:			
					Brow	vse	
Leam n	nore about s	etting thes	e properties.				
		[OK	Can	cel	Ap	oply

*Check "Run application on this computer."

[Specific Properties (Security)]

Select "Customize" in each field and press "Edit."

OpcEnum Properties	?	\times
General Location Security Endpoints Identity		
Launch and Activation Pemissions		
O Use Default		
 Customize 	Edit	
Access Permissions		
◯ Use Default		
Customize	Edit]
Configuration Permissions		
O Use Default		
Customize	Edit	
Leam more about <u>setting these properties</u> .		
OK Car	ncel Ap	ply

Under "Security," add "SYSTEM" and grant access. (If you cannot connect, add "Evryone" to allow access.)

Launch and Activation Permissi	on	?	×
Security			
Group or user names:			
Sterveryone			
SYSTEM			
INTERACTIVE	HZZIDL VADMINIStrat	orsj	
	Add	Remov	/e
Permissions for SYSTEM	Allow	Deny	,
Local Launch	\checkmark		
Remote Launch	\checkmark		
Local Activation	\checkmark		
Remote Activation	- /		
Hemote / Kervatori	~		
Henote Addivision			
	Č.		
	<u>v</u>		

Access Permission		?	\times
Security			
Group or user names: Stress Everyone Stress ELF Stress EVER			
	Add	Remove	
Permissions for SYSTEM	Allow	Deny	
Permissions for SYSTEM Local Access Remote Access		Deny	
Permissions for SYSTEM Local Access Remote Access			

[Specific Properties (ID/Identity)]

Select the "ID" tab, and specify the user account that runs the application.

OpcEnum Propertie	es				?		×
General Location	Security	Endpoints	Identity				
Which user accou	nt do you v	vant to use to	o run this app	plicati	on?		
O The interactive	user.						
O The launching	user.						
O This user.							
User:					Brow	se	
Password:							
Confirm passwor	d: [
The system acc	count (servi	ices only).					
Learn more about ;	setting thes	e properties.					
	[ОК	Can	cel		Appl	y

[Firewall(Exceptions])]

The Windows firewall is effectively set by default. It explains the method of connecting DCOM with DeviceXPlorer with the firewall made effective since it the next pages.

The application to pass the firewall can be specified in "Exceptions" tab. And push "Add Programs" button and add "DeviceXPlorer OPC Server 6". Moreover, to browse the installed server list from another node with the OPCENUM function, add "OpcEnum.exe".

	Control Doctor		x
Allowed Programs	Search Control Panel		þ
Allow programs to communicate through Window To add, change, or remove allowed programs and ports, click Char What are the risks of allowing a program to communicate?	s Firewall nge settings.	<u>ng</u> e settings	
Name	Home/Work (Private)	Public 🔺	
DeviceXPlorer OPC Server			E
	Detai <u>l</u> s	Re <u>m</u> ove	
	ОК	Cancel	

In addition, port "135" of "TCP" used with DCOM pushing "Add Port" button is added.

🔐 New Inbound Rule Wizard	d	×
Protocol and Ports		
Specify the protocols and ports t	to which this rule applies.	
Steps:		
a Rule Type	Does this rule apply to TCP or UDP?	
Protocol and Ports	● <u>I</u> CP	
 Action 	© <u>U</u> DP	
 Profile 		
 Name 	Does this rule apply to all local ports or specific local ports?	
	All local ports	
	Specific local ports: 135	
	Example: 80, 443, 5000-5010	
	Leam more about protocol and ports	
	< Back Next > Cance	

6 Script

User can input original logic in DeviceXPlorer by using script. Device, Group and Struct Template can have event and methodtag can have event. About methodtag, please check 5.8.

Important

- There is no upper limit to the number of script settings, but please note that the communication load will increase.

- Please note that executable number of scripts (including bridges) is limited depending on the edition of DeviceXPlorer.

6.1 Event Script Settings

Device, Group and Struct Template have event list.

Event list will be displayed when select [Event] from right-click menu for Device and Group.

Project Explorer 🔷 🔻 🗜	× Tag List : Device1	×		
	😨 🛋 🔎 🐴	Device 1		▼ [M
III Project 'Notitle'	Name	Data Type	Location	Value
SYSTEM	-🔂 Tag1	Short	D0	
Device1 [Mitsubishi MELSEC	3			
Device 1Port New	•			
Port C	hange			
Paste	Ctrl+V			
Delet	e Delete			
Expan	d All			
Collag	ose All			
Show	Port Always			
Statis	tics			
Event	Ctrl+E			
📑 Project 😪 Diagno. 👘 Prope	rty Alt+Enter			

Event will be displayed in event list.

You can create, modify, delete and run/stop event from right-click menu.

Project Explorer 🔍 🔻 🎗	Tag List : Device1	Event List : Dev	vice1 🗙					4 Þ
E X 6	2 🛋 🏓 🗐	Device 1						-
III Project 'Notitle'	Event		Туре		Condition			Run
🖨 🗐 SYSTEM	Script1		Script		Run Event { }			Run
SYSTEM [MemoryMap]	Script2		Script		Period { 2000 }			Run
Device I [Mitsubishi MELSEC]	Script3		Script		TagChange { 50	0, While O	N, "Tag1" }	Run
Device (Fort [Ethernet]	Script4		Script		TagChange { 50	0, Change	(Quality), "Tag1"]	Run
					New	•	Script	
				Ж	Cut	Ctrl+X	Bridge	
				P	Сору	Ctrl+C		
					Paste	CtrI+V		
					Delete	Delete		
				~	Run			
Project 🧐 Diagno 🔗 Structu					Properties A	Alt+Enter		

Input script setting.

Name Van Event Period Period Script Please implement the behavior.	Event Scri	pt				
Period Event Period 500 Script 1 Please implement the behavior. 4 Image: Period 1 Please implement the behavior.	Name					
Event Period V Period 500 ms Tag Script	📝 Run					
Tag While ON Script 1 Please implement the behavior.	Event	Period	r Period	500	ms	
Script	Tag		While ON	Ψ.		
1 Please implement the behavior.	Script					
	1	Please implement the behavior.				
4						
4						
4						
4						
	•	m				Þ
OK Cancel Apply				ОК	Cancel	Apply

Item	Information				
Name	Set script name.				
Run	Specify run state of script.				
	If no check, script is not performed.				
Event	Specify event condition.				
	Period Script is performed the specified cycle (fixed cycle).				
	Tag Change Script is performed when the value of the tag changed.				
	Run Event Script is performed at the time of event engine starting of the parent Device. (*)				
	Stop Event Script is performed at the time of event engine stopping of the parent Device. (*)				
Tag	When "Tag Change" is chosen in Event, a specification tag and conditions can be specified.				
	Static tag and dynamic tag can be specified. You cannot use array tag and string tag.				
	[While ON]While a specification tag turns on, it performs at a case (when it is except zero).				
	[Change] Script is performed at the time of specified tag's Value or Quality or Timestamp				
	changing.				
	[Change(Value)] Script is performed at the time of specified tag's Value changing.				
	[Change (Quality)] Script is performed at the time of specified tag's Quality changing.				
	[Change (Time stamp)] Script is performed at the time of specified tag's Timestamp changing.				
	[Rise] Script is performed at the time of specified tag changes to ON from OFF.				
	[Fall] Script is performed at the time of specified tag changes to OFF from ON.				
Period	Specify running interval and communication interval of script.				
Script	Describe User logic (script). There are size restrictions of 32767 characters per one script.				
	The lists of properties, functions and code-snippet are shown by pushing "Ctrl + Space key".				
	Tag browse dialog is shown by pushing "Ctrl + B" or "Ctrl + Insert key".				

* Event engine starts at the time of starting and stops at the time of application closing. And event engine will reboot to the timing when user creates, modifies and deletes script.

6.2 Script Specification

Script in DeviceXPlorer uses open script language Lua . Please refer to the official reference of Lua for the basic specification of Lua.

6.3 Extend Specification

DeviceXPlorer has some extend specifications for Lua.

6.3.1 Reserved Word

The word which starts with Dxp cannot be used.

Object	Туре	Information
Dxp	Table	The constant, a class, a function, etc. are defined as a member of this table.

6.3.2 Constant Value

Object Type Table (Dxp.ObjectType)

C	Constant Value	Туре	Value	Information		
Dx	p.ObjectType					
	Tag	Number	1	Tag		
	Device	Number	2	Device		
	Group	Number	3	Group		
	Struct	Number	4	Struct		
	Port	Number	5	Port		
	Method	Number	6	Method		
	EventScript	Number	7	EventScript		

Tag Type (Dxp.TagType)

Co	onstant Value	Туре	Value	Information
Dxp	o.TagType			
	Boolean	Number	1	Boolean Tag
	Number	Number	2	Number Tag
	String	Number	3	String Tag
	Boolean Array	Number	4	Boolean Array Tag
	Number	Number	5	Number Amery Tea
	Array			Number Array Tag

6.3.3 Classes

The following class (table) can be used.

The instance of the following classes is acquired by using the access macro provided originally by DeviceXPlorer.

Class	Information
	Tag Access Class
BooleanTag	
NumberTag	This class offers the function accessed about a property common to some
StringTag	tags.
BooleanArrayTag	There are five kinds, the object for Boolean Tag, t Number Tag, String
NumberArrayTag	Tag, Boolean Array Tag, and Number Array Tag, and it is necessary to
	use properly according to the data type of a tag.
Group	Group Access Class
Device	Device Access Class. This is derived from the Group Access Class.
Struct	Struct Intance Access Class. This is derived from the Group Access Class.
Port	Port Access Class
EventScript	Event Script Access Class
Method	Method Access Class
Time	Time Class

6.3.3.1 Tag Access Class

Tag Access Class (BooleanTag, / NumberTag / StringTag / BooleanArrayTag / NumberArrayTag)

Member	Туре	Attribute	Information	
ObjectType	Number	R	Object type (Dxp.ObjectType.**)	
ObjectClassName	String	R	Object type name (Example : MelsecEthernetTag)	
Path	String	R	Path	
Name	String	R	Tag name	
Config	String	R	Setting parameter (csv format)	
			Boolean type in the case of Boolean Tag.	
			Number type in the case of NumberTag.	
Value			String type in the case of StringTag or BooleanArrayTag, and	
	Boolean Number String	R/W	NumberArrayTag.	
			Array tag's value becomes a comma separated value.	
(Different from class)			If a new value is assigned, with a script execution thread,	
			DeviceXPlorer will do asynchronous value writing to PLC in the end	
			of script.	
			Please refer to 6.3.8about writing value.	
Quality	Number	R	Quality flag	
Timestamp	Time	R	Timestamp	
Location	String	R	Location String	
ТадТуре	Number	R	Tag's Type (Return Dxp.TagType.**)	
VariantType	Number	R	Tag's data type (Return VARIANT : vt)	
Comment	String	R	Comment	
Simulate	Boolean	R/W	Simulation Status.	

Function		Information
ToString()	[Return value]	instance information (String)
losungo	" <u>ObjectTypeName</u>	{ <u>ClassName</u> , <u>Name</u> , <u>Path</u> , <u>Location</u> , <u>Value</u> }"
ToStringValue()	[Return value]	string converted from value of the tag (String)
HasValue0	[Return value]	whether tag has value or not (Boolean)
	[Argument value]	element : element index of array (Number)
GetValue(element)	[Return value]	specified element value (Number)
(Only Array tag)		Boolean type in BooleanArrayTag
		Number type in NumberArrayTag
SatValue(alament ushue)	[Argument value]	element : element index of array (Number)
(Only Arrest to g)		value : set value (Boolean or Number)
(Only Array tag)	[Return value]	None
GetParent0	[Return value]	Group (Group, Device, Struct)

6.3.3.2 Group Access Class

Group Access Class (Group)

Member	Туре	Attribute	Information	
ObjectType	Number	R	Object type (Dxp.ObjectType.**)	
ObjectClassName	String	R	Object type name (Example : BaseGroup / MelecEthernetGroup)	
Path	String	R	Path	
Name	String	R	Name	
Config	String	R	Setting parameter (csv format)	

Function	Information				
	[Return value]	instance information (String)			
lostring	" <u>ObjectTypeName</u>	(<u>ClassName, Name, Path</u> }"			
Posstra Doth(nome)	[Argument value]	name : Subordinate's relative path (String)			
Resolver atn(name)	[Return value]	Fullpath			
FindChild(name)	[Argument value]	name : Subordinate's relative path (String)			
	[Return value]	Object Access Class(BooleanTag , Device etc),			
	Function				
	<example></example>				
	local grou	p=@@g("Group1");			
	local tag=	=group:FindChild("tag1");			
GetParent()	[Return value]	Group (Group, Device, Struct)			
GetEvent(name)	[Argument value]	name : event script name (Stirng)			
	[Return value]	Event (EventScript)			
GetMethod(name)	[Argument value]	name : method tag name (Stirng)			
	[Return value]	Method (Method)			

6.3.3.3 Device Access Class

Device Access Class (Device)

Member	Туре	Attribute	Information
Status	Boolean	R	Communication Status. Areas of \$Status (SystemTag)
Standby	Boolean	R/W	Redundancy Status. Areas of \$Standby (SystemTag)
Simulate	Boolean	R/W	Simulation Status. Areas of \$Simulate (SystemTag)

Function		Information		
ToString()	[Return value]	instance information (String)		
IOString()	" <u>ObjectTypeName</u>	{ <u>ClassName, Name, Status, Standby, Simulate</u> }"		
GetPortName0	[Return value]	Port Name (String)		
	[Return value]	Port (Port)		
GetPort0	The instance of port related with this device is returned. Nil is returned if			
	this function is fail	ed.		
GetStandbyDevicePath()	[Return value]	Full path of standby device(String)		
	[Return value]	Standby device (Device)		
GetStandbyDevice()	The instance of standby-device for this device is returned. Nil is returned			
	if the redundant-co	ommunication is not specified.		

Note

Device Access Class is derived from Group Access Class. The members (properties, functions) of Group Access Class can be used.

6.3.3.4 Struct Access Class

Struct Access Class (Struct)

Member	Туре	Attribute	Information
TypeName	String	R	Type name

Function	Information
Testing	[Return value] instance information (String)
IOString	" <u>ObjectTypeName{ ClassName, Name, StructTypeName</u> }"

Note

Struct Access Class is derived from Group Access Class. The members (properties, functions) of Group Access Class can be used.

6.3.3.5 Port Access Class

Port Access Class (Port)

Member	Туре	Attribute	Information
ObjectType	Number	R	Object type (Dxp.ObjectType.**)
ObjectClassName	String	R	Object type name (Example : EthernetPort)
Path	String	R	Path
Name	String	R	Port Name
Config	String	R	Setting parameter (csv format)

Function	Information
ToString()	[Return value] instance information (String)
IOString	" <u>ObjectTypeName</u> { <u>ClassName, Name</u> }"

6.3.3.6 Event Script Access Class

Event Script Access Class (EventScript)

Member	Туре	Attribute	Information
ObjectType	Number	R	Object type (Dxp.ObjectType.**)
ObjectClassName	String	R	Object type name (Example : EventScript)
Path	String	R	Path

Name	String	R	Event Script Name
Config	String	R	Setting parameter (csv format)
Enabled	Boolean	R/W	Event status.

Function	Information
ToStainon	[Return value] instance information (String)
IOString()	" <u>ObjectTypeName</u> { <u>ClassName, Name</u> }"
	Run Event Script manually.
	[Return value] None
Run0	<sample1></sample1>

6.3.3.7 Method Access Class

Method Access Class (Method)				
Member	Туре	Attribute	Information	
ObjectType	Number	R	Object type (Dxp.ObjectType.**)	
ObjectClassName	String	R	Object type name (Example : Method)	
Path	String	R	Path	
Name	String	R	Event Script Name	
Config	String	R	Setting parameter (csv format)	
Enabled	Boolean	R/W	Event status.	

Function	Information
Testring	[Return value] instance information (String)
lostring	" <u>ObjectTypeName</u> { <u>ClassName, Name</u> }"
	Run Method manually.
	[Return value] None
Run0	<sample1> local device =@d("Device1"); local method = device:GetMethod("Method01"); method:Run(); <sample2> local method =@m("Device1.method01"); method:Run();</sample2></sample1>

6.3.3.8 Time Class

Time Class (Time)

Member	Туре	Attribute	Information
High	Number	R/W	High Value
Low	Number	R/W	Low Value

Function	Information			
	[Argument]	format : Time format (String) * elision is OK.		
	[Return value]	Time String (String). If the format fails, empty is		
	returned.			
Format (format)	<sample></sample>			
	local time	e=Dxp.GetCurrentTime();		
	Dxp.LogI	nfoMessage(time:Format("%Y/%m/%d %H:%M:%S"));		
	Specify format of COleDateTime: Format().			
	Get difference of the time of Second			
Diff(<i>Time</i>)	[Argument]	Time : Time class (Time)		
	[Return value]	difference second time (Number)		
Year()	[Return value]	Year (Number)		
Month()	[Return value]	Month. 1 to 12 (Number)		
Day0	[Return value]	Day. 1 to 31 (Number)		
Hour	[Return value]	Hour. 0 to 23 (Number)		
Min0	[Return value]	Minute. 0 to 59 (Number)		
Sec0	[Return value]	Second. 0 to 59 (Number)		
WDay()	[Return value]	Week day 1(Sunday) to 7 (Saturday) (Number)		

6.3.4 Functions

Under the global table Dxp, public and provide the following function.

	Function	Content				
Dx	p					
	IsTag(<i>path, name</i>)	This is to confirm wh	This is to confirm whether the object exists for each access class.			
	IsDevice(name)	[Argument]	path: Path (String)			
	IsGroup(<i>path, name</i>)		name:Name(String)			
	IsStruct(<i>path, name</i>)	[Return value]	Whether there is a specified type of object(Boolean)			
	IsPort(<i>name</i>)					
	IsMethod(<i>path, name</i>)					
	IsEvent(<i>path, name</i>)					
	GetObject(<i>path, name</i>)	This will get the obje	et access class.			
		[Argument]	path: Path (String)			
			name:Name(String)			
		[Return value]	Object access class (BooleanTag, Device etc)			
	GetObjectType(<i>path, name</i>)	This will get the type of object access class.				
		[Argument]	path: Path (String)			

			name:Name(String)	
		[Return value] Object type (Number : Dxp.ObjectType.***)		
	GetObjectTypeString(type)	This will get the nar	ne of the class type of object access.	
		[Argument]	type : Object Type (Number : Dxp.ObjectType.***)	
		[Return value]	Object type name (String)	
	GetDelimiter()	This gets the delimit	ter character.	
		[Return value]	Name space delimiter (String)	
	MakePath(fullpath, child)	Which takes the pat	h with a delimiter character.	
		[Argument]	fullpath : Absolute path of the parent (String)	
		for 1	child : Child name (String)	
		[Return name]	Absolute path of the parent + Name space delimiter + Child	
		name	0 1. A	
	GetQualityString(quality)	This will get a string	got quality flags.	
		[Argument]	quality · Quality flag of the tag (Number)	
	In Cond Cupiter (muniter)	[Return value]	Quality hag string (String)	
	Isocoodquality(quality)	This will determine whether the flag is Good quality.		
		[Argument]	Good quality flog is whether (Boolean)	
	IsBadQuality(<i>quality</i>)	This will determine	whether the flag is Bad quality	
	IsDauQuality(quality)	[Argument]	nuality: Quality flag of the tag (Number)	
		[Return value]	Bad quality flag is whether (Boolean)	
	IsUncertainQuality(<i>quality</i>)	This will determine	whether the flag is Uncertain quality.	
		[Argument]	quality: Quality flag of the tag (Number)	
		[Return value]	Uncertain quality flag is whether (Boolean)	
	CopyTagsValue(<i>dst, src</i>)	This will copy hierarchically to another group, the value of the tag in the group		
		[Argument]	dst: Destination path (String)	
			src: Souce path (String)	
		[Return value]	Whether or not the operation was successful (Boolean)	
	SyncRead(<i>tags</i>)	This is done in a syn	chronous read.	
		[Argument]	tags: Table that contains the tag(Tag)	
		[Returm value]	Result Success/Failure (Boolean)	
		<example></example>	0.	
		local tag	S= (),	
		for i=1 1	ne tag to be read	
		101 1-1, 1	$tags[i] = \Re t("Device1 Tag" i);$	
		end	agoli en Device. 12g	
		Svnchi	ronous read	
		local ret:	= Dxp.SyncRead(tags);	
		- Read	l the results	
		local sum = 0;		
		for i=1, 10, 1 do		
			sum=sum+tags[i].Value;	
		end		
	SyncWrite(<i>tags</i>)	This is done in a syn	chronous write.	
		[Argument]	tags $:$ Table that contains the tag (Tag)	
		[Return value]	Result Success/Failure (Boolean)	
1				

	<example></example>			
	local tags =			
	- Set the tag to be written. Set the value of writing.			
	for i=1, 10, 1 do			
	tags[i] = @t("Device1.Tag"i);			
	tags[i]. Value = 123;			
	end			
	Synchronous write			
	local ret = Dxp.SyncWrite(tags);			
LogMessage(<i>msg</i>)	This script outputs the log message.			
	[Argument] msg : Output message (String)			
LogInfoMessage(<i>msg</i>)	This will output the info message.			
	[Argument] msg: Output message (String)			
LogWarningMessage(msg)	This will output a warning message.			
	[Argument] msg : Outoput message (String)			
LogErrorMessage(<i>msg</i>)	This will output an error message.			
	[Argument] msg : Output message (String)			
GetCurrentTime0	This gets the current time.			
	[Return value] Current time (Time)			
And(num1,num2)	This is done in various bit operations (AND/OR/XOR/NOR/NAND).			
Or(num1, num2)	[Argument] num1:Target number 1(Number)			
Xor(num1, num2)	num2: Target number 2(Number)			
Nor(num1, num2)	[Return value] The result of the bitwise operation various (Number)			
Nand(num1, num2)				
Not(num)	This is done bit operations (NOT)			
	[Argument] num : Target number (Number)			
	[Return value] The result of the bitwise operation (NOT).(Number)			
Sleep(num)	Suspends the execution of the current thread until the time-out interval elapses.			
	[Argument] num: The time interval for which execution is to be			
	suspended, in milliseconds. (Number)			
	* Please note that execute Sleep will affect other scripts on the same device.			

6.3.5 Access Macros

DeviceXPlorer provides following macros originally. Access Macros creates the instance of tag, device, group, struct, method and port.

Macro	Content
	Absolute access macro.
	You can access the structure, methods, and to the port, by enclosed in double quotes followed by at
	sign, the absolute path The nil is returned if the target object is not found.
@(fullpath)	<example1></example1>
	@("Device1.Tag1").Value = 1;
	<example2></example2>
	local tag = @("Device 1.Tag 1");
	tag.Value=1;
@t(fullpath)	Absolute access macro for tag. This macro creates the instance of the Tag Access Class.
	Absolute access macro for device. This macro creates the instance of the Device Access
(ad (nupath)	Class.
$\bigcirc (C \Pi I)$	Absolute access macro for group. This macro creates the instance of the Group Access
(@g(fullpath)	Class.
@s(fullpath)	Absolute access macro for struct. This macro creates the instance of the Struct Access

	Class.
	Absolute access macro for method. This macro creates the instance of the Method Access Class.
(mu (fullmath)	This is the sample to call "SetAuto" method when this method is created in the "Device1" device.
	<example1></example1>
	local ret=@m("Device1.SetAuto"):Run();
	<example2></example2>
	local method = @m('Device1.SetAuto');
	local ret = method:Run();
@e(fullpath)	Absolute access macro for event script. This macro creates the instance of the Event Script Access Class.
$ = \left(\begin{array}{c} 0 \\ 0 \end{array} \right) \left(\begin{array}{c} 0 \end{array} \right) \left(\begin{array}{c} 0 \\ 0 \end{array} \right) \left(\begin{array}{c} 0 \\ 0 \end{array} \right) \left(\begin{array}{c} 0 \end{array} \right) \left(\begin{array}{c} 0 \\ 0 \end{array} \right) \left(\begin{array}{c} 0 \end{array} \right)$	Absolute access macro for port. This macro creates the instance of the event Port Access
(@p(<i>fullpath</i>)	Class.
@@	Relative access macros.
@@(relativePath)	This macros that you can access the object with a relative path. How to write in the description of
	enclosed in double quotation marks at the two and a relative path or two at sign. The nil is
	returned if the target object is not found.
	@@("RelativePath") Access to child objects relative
	@@ Themselves (this)
	This is the sample to output message which has value of "Tag1" tag and name of "Device1" device, when this tag is created in this device.
	<example1></example1>
	Dxp.LogInfoMessage(@@,Name "/" @@("Tag1"):ToStringValue();
	<example2></example2>
	local device = @@;
	local tag = @@("Tag1");
	Dxp.LogInfoMessage(device.Name "/" tag:ToStringValue());
@@t(relativePath)	Relative access macro for tag. This macro creates the instance of the Tag Access Class.
@@g(relativePath)	Relative access macro for group. This macro creates the instance of the Group Access
	Class.
@@s(relativePath)	Relative access macro for struct. This macro creates the instance of the Struct Access
	Class.
@@m(<i>relativePath</i>)	Relative access macro for method. This macro creates the instance of the Method Access
	Class.
@@e(relativePath)	Relative access macro for event script. This macro creates the instance of the Event
	Script Access Class.

6.3.6 Priority of Finding Object

Indicates a preference for objects that can be retrieved from the Object access macro(\Rightarrow GetObject function / GetObjectType function). For example, when there are same pot name and device name, this will be replaced by the process of obtaining a device. If you want to get the port explicitly, please use the port access macro.

Rank	Object
High	Tag, Method
	Group, Structure instance
1	Event script
	Device

Low Port	
----------	--

6.3.7 Units of Running Script

DeviceXPlorer has Lua Engines per device. Scripts run on threads separated by devices. The script on the "Device1" waits for finishing of waiting timeout and retrying, when you use synchronous reading (Dxp.SyncRead) for the child tag(e.g. Device1.Tag1) while the controller is down. The script on the "Device2" is not affected from waiting for "Device1".

6.3.8 About Script Writing

If a new value is assigned to the Value property of a tag access object or a new value is set by the SetValue method of an arrangement tag access object, script engine will do asynchronous write and will write a value to PLC.

Asynchronous writing is not performed when a synchronous write-in function is called after value substitution with a script.

However, asynchronous writing is performed when value substitution is carried out after a synchronous write-in function call.

Demands of asynchronous writing is queueing if script writes repeatedly to the device which is down. The demands are processed and write values to the controller in turn, when the device restored. DeviceXPlorer outputs an error to the message view if the queue count reaches the upper limit. You should stop writing in the script while device is down. Otherwise, you can control by the "Reduce write-queue" at the Project Properties.

6.4 Samples

6.4.1 Basic Example

This sample shows the basic example. At first, make the tag (Device1.Tag001) in the Device1.

Project Explorer 🛛 🔻 🕈 🗙	Tag List : Device1 x Event List : Device1 4 D				
III 🖂 🌆	😨 🚁 🍇 Device1 🗸 🗸				✓ MelsecEthernet
III Project '無題'	Name	Data Type	Location	Value	Quality
	- Tag001	Short	D0	24	Good (C0h)
12 Device1 [Mitsubishi MELSEC]					

Make two event scripts in the Device1.

Project Explorer 🔷 🖛 🗙	Tag List : SYSTEM Event List : S	YSTEM ×		
	😨 🚮 🔎 🗿 SYSTEM			
III Project 'TimerCounterSample'	Event	Туре	Condition	Run
	Initislize	Script	Run Event { 500 }	Run
STSTEM [MemoryMap]	StartStop	Script	TagChange { 500, Change, "SYSTEM.Running"	Run
	🔋 Timer	Script	Period { 500 }	Run

Initialize script(Run Script) initializes the global variables and functions.

Scripts are executed in the processing engine per devices (Refer to 6.3.7 Units of Running Script). So global variables and functions are able to be shared between the device and child groups.



Cycle script(Period) implements the processing that continues always running. You can use global variables and functions which is defined in the Initialize script in this script. You can use "local" keyword to declare the local variable. If you want to access the tags, you can use the Tag Access Macro (@t, @@t). For accessing the properties of tag, you can use dot ".". For calling the method of tag, you can use colon "." (This is the specification which can omit "this" object for first argument in the Lua language.).

You can use the functions which is defined under the "Dxp" namespace, e.g. "Dxp.LogMessage()" function.

Scri	pt I	Example (Cycle)
1		Count up global variable
2		$g_counter = g_counter + 1;$
3		
4		Getting tag access object with local variable
5		local tag = @@t("Tag001");
6		
7		Calling the function and writing the value of tag
8		tag.Value = CalcAdd(g_counter, 1000);
9		
10		Output message log (WarningLog)
11		Dxp.LogWarningMessage("counter=" g_counter " / tag=" tag:ToStringValue());
12		
13		If example
14		if $(g_counter \% 5 = 0)$ then
15		For example
16		local i;
17		for i=0, 10, 1 do
18		Dxp.LogInfoMessage("i="i);
19		end
20		end

6.4.2 Easy CSV Logging

This sample shows a simple example about collecting the values of tags to the CSV file. At first, make the tags in the Device1.

Project Explorer Tag List : Device1 x Event List : Device1					4 ⊳
1991 🔊 📬 300 1999 Project "無題"	😨 🔊 🔎 🛐 Device 1 🗸 🗸				elsecEthernet
	Name	Data Type	Location	Value	Quality
	- ArrayTag	Array of Shorts(20)	D1:A20		
	- Tag001	Short	D0		
	- Tag002	Short	D1		
	- Tag003	Short	D2		

Make event script in the Device1.

Project Explorer 🗢 🗣 🗄	< Tag List : SYSTEM	Event List : SYSTEM 🗙		
📰 📼 📼	1 🖉 🖾 🔎 🗐	SYSTEM		
Project 'TimerCounterSample'	Event	Туре	Condition	Run
SYSTEM SYSTEM [MemoryMap]	SimpleLo	gging Script	Period { 500 }	Run

Implement the CSV logging about three tags.

Script	Example (SimpleLogging)
1	local f, msg = io.open("C:\\Work\\Log.csv", "a+");
2	
3	Check the open result
4	if (f == nil) then
5	Dxp.LogErrorMessage("File Open Error (" msg ")");
6	return;
7	end
8	
9	Make CSV
10	local text = "";
11	text = text Dxp.GetCurrentTime():Format();
12	text = text "," @@t("Tag001"):ToStringValue();
13	text = text "," @@t("Tag002"):ToStringValue();
14	text = text "," @@t("Tag003"):ToStringValue();
15	
16	Write to file
17	f:write(text "¥n");
18	
19	Close the file
20	f·close();
21	
22	Dump log
23	Dxp.LogMessage(text);
24	

If you change the code to use the tag of array type, you can realize easily the logging about big continuous data.

Script Example (SimpleLogging) : 9 -- Make CSV 10 local text = ""; 11 text = text .. Dxp.GetCurrentTime():Format(); 12 text = text .. "," .. @@t("ArrayTag"):ToStringValue(); 13 14 -- Write to file :

6.4.3 Example which defines the class in the external file (Bridge)

This sample shows how you can define the class in the external file with the bridge example. At first, make the tags (Device1.Tag001 – 005, Device2.Mem001 - 005) in the devices (Device1, Device2).

Project Explorer 🛛 👻 🕈 🗙	Tag List : Device1 🗙 Ev	ent List : SYSTEM			4 Þ
III 🖂 🌀 📷	😨 👩 🔎 🗿 Device 1				 MelsecEthernet
🛐 Project 'BridgeSample'	Name	Data Type	Location	Value	Quality
SYSTEM	- Tag001	Short	D1		
Device1 [Mitsubishi MELSEC]	- Tag002	Short	D2		
Device2 [Omron SYSMAC]	- Tag003	Short	D3		
	- Tag004	Short	D4		
	-🖾 Tag005	Short	D5		
Project Explorer 🔷 🕈 🗙	Tag List : Device2 🗙 Ev	ent List : SYSTEM			4 Þ
Project Explorer 👻 🕂 🗙	Tag List : Device2 🗙 Ev	ent List : SYSTEM			√ Þ SysmacEthernet
Project Explorer	Tag List : Device2 × Ev	ent List : SYSTEM Data Type	Location	Value	↓ SysmacEthernet Quality
Project Explorer Project Explorer Project 'BridgeSample' SYSTEM	Tag List : Device2 × Ev	ent List : SYSTEM Data Type Short	Location DM1	Value	↓ SysmacEthernet Quality
Project Explorer	Tag List : Device2 x Ev	ent List : SYSTEM Data Type Short Short	Location DM1 DM2	Value	↓ SysmacEthernet Quality
Project Explorer	Tag List : Device2 x Ev	Data Type Short Short Short	Location DM1 DM2 DM3	Value	↓ SysmacEthernet
Project Explorer	Tag List : Device2 x Ev Image: Second s	Data Type Short Short Short Short Short Short	Location DM1 DM2 DM3 DM4	Value	✓ SysmacEthernet

Make the event script in the SYSTEM.

Project Explorer 🛛 🔻 🗜 🗙	Tag List : Device1 Event List : S	(STEM X		4	Þ
III 🖂 🌀	😨 🚮 🔎 🗐 SYSTEM				Y
🔢 Project 'BridgeSample'	Script	Event	Condition	Run	
SYSTEM	😫 Bridge	Period	{ 500 }	Run	
Device1 [Mitsubishi MELSEC]	Initialize	Run Script	{ }	Run	

Initialize script (Run Script) loads the external script file. So you can use BridgeSample class which is defined in the external file.

About the instance of BridgeSample class you created, it stores to the global variable.

By calling the method of BridgeSample instance, you can register the path that you want.

Script Example (Initialize)
1 require("lua/BridgeSample");
2
3 g_bridge = BridgeSample.New();
4 g_bridge:Add("Device1.Tag001", "Device2.Mem001");
5 g_bridge:Add("Device1.Tag002", "Device2.Mem002");
6 g_bridge:Add("Device1.Tag003", "Device2.Mem003");
7 g_bridge:Add("Device1.Tag004", "Device2.Mem004");
8 g_bridge:Add("Device1.Tag005", "Device2.Mem005");
9

Bridge script(Period) does the bridge by calling the method of BridgeSample instance.

Script Example (Bridge)	
1 2 g_bridge:BridgeForward(); 3	

Make the external script file in the "Lua" folder.

You should make "Lua" folder in the Bin Folder(C:\Program Files (x86)\TAKEBISHI\DeviceXPlorer OPC Server 6\Bin\DeviceXPlorer in the Bin Folder(C:\DeviceXPlorer TakeBISHI\DeviceXPlorer OPC Server 6\DeviceXPlorer Bin\DeviceXPlorer OPC Server 6\DeviceXPlorer Bin\DeviceXPlorer OPC Server 6\DeviceXPlorer Bin\DeviceXPlorer OPC Server 6\DeviceXPlorer Bin\DeviceXPlorer Bin\Devi

$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	<pre>'(LUA_TKB_BRIDGE_SAMPLE_INCLUDE == nil) then LUA_TKB_BRIDGE_SAMPLE_INCLUDE = 1; ***********************************</pre>
$\begin{array}{c} 2\\ 3\\ 4\\ 5\\ 6\\ 7\\ 8\\ 9\\ 10\\ 11\\ 12\\ 13\\ 14\\ 15\\ 16\\ 17\\ 18\\ 19\\ 20\\ 21\\ 22\\ 23\\ 24\\ 25\\ 26\\ 27\\ 28\\ this\\ 32\\ 33\\ this\\ 34\\ 35\\ 36\\ 37\\ 38\\ 39\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10$	<pre>LOA_IRB_BRIDGE_SAMPLE_INCLODE = 1; ***********************************</pre>
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	***********************************
$\begin{array}{c} 5 \\ 6 \\ 7 \\ 8 \\ 9 \\ 10 \\ 11 \\ 12 \\ 13 \\ 14 \\ 15 \\ 16 \\ 17 \\ 18 \\ 19 \\ 20 \\ 21 \\ 22 \\ 23 \\ 24 \\ 25 \\ 26 \\ 27 \\ 28 \\ this \\ 32 \\ 33 \\ this \\ 34 \\ 35 \\ 36 \\ 37 \\ 38 \\ 39 \\ 40 \\ 41 \\ 42 \\ 43 \\ 44 \\ 45 \\ 46 \\ 47 \\ 48 \\ 40 \\ 41 \\ 42 \\ 43 \\ 44 \\ 45 \\ 46 \\ 47 \\ 48 \\ 40 \\ 41 \\ 42 \\ 43 \\ 44 \\ 45 \\ 46 \\ 47 \\ 48 \\ 40 \\ 41 \\ 42 \\ 43 \\ 44 \\ 45 \\ 46 \\ 47 \\ 48 \\ 40 \\ 41 \\ 42 \\ 43 \\ 44 \\ 45 \\ 46 \\ 47 \\ 48 \\ 40 \\ 41 \\ 42 \\ 43 \\ 44 \\ 45 \\ 46 \\ 47 \\ 48 \\ 40 \\ 41 \\ 42 \\ 43 \\ 44 \\ 45 \\ 46 \\ 47 \\ 48 \\ 40 \\ 41 \\ 42 \\ 43 \\ 44 \\ 45 \\ 46 \\ 47 \\ 48 \\ 40 \\ 41 \\ 42 \\ 43 \\ 44 \\ 45 \\ 46 \\ 47 \\ 48 \\ 40 \\ 41 \\ 42 \\ 43 \\ 44 \\ 45 \\ 46 \\ 47 \\ 48 \\ 40 \\ 41 \\ 42 \\ 43 \\ 44 \\ 45 \\ 46 \\ 47 \\ 48 \\ 40 \\ 41 \\ 42 \\ 43 \\ 44 \\ 45 \\ 46 \\ 47 \\ 48 \\ 40 \\ 41 \\ 42 \\ 43 \\ 44 \\ 45 \\ 46 \\ 47 \\ 48 \\ 40 \\ 41 \\ 42 \\ 43 \\ 44 \\ 45 \\ 46 \\ 47 \\ 48 \\ 40 \\ 41 \\ 42 \\ 43 \\ 44 \\ 45 \\ 46 \\ 47 \\ 48 \\ 40 \\ 41 \\ 42 \\ 43 \\ 44 \\ 45 \\ 46 \\ 47 \\ 48 \\ 40 \\ 41 \\ 41 \\ 42 \\ 43 \\ 44 \\ 45 \\ 46 \\ 47 \\ 48 \\ 40 \\ 41 \\ 41 \\ 45 \\ 46 \\ 47 \\ 48 \\ 40 \\ 41 \\ 45 \\ 46 \\ 47 \\ 48 \\ 40 \\ 41 \\ 40 \\ 41 \\ 41 \\ 41 \\ 41 \\ 41$	BridgeData class ***********************************
$\begin{array}{c} 7\\ 8\\ 9\\ 10\\ 11\\ 12\\ 13\\ 14\\ 15\\ 16\\ 17\\ 18\\ 19\\ 20\\ 21\\ 22\\ 23\\ 24\\ 25\\ 26\\ 27\\ 28\\ this\\ 29\\ 30\\ 31\\ 32\\ 23\\ 33\\ this\\ 34\\ 35\\ 36\\ 37\\ 38\\ 39\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 11\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 40\\ 41\\ 42\\ 48\\ 40\\ 41\\ 42\\ 48\\ 40\\ 41\\ 42\\ 48\\ 40\\ 41\\ 42\\ 48\\ 40\\ 41\\ 42\\ 48\\ 40\\ 41\\ 42\\ 48\\ 40\\ 41\\ 42\\ 48\\ 40\\ 40\\ 41\\ 42\\ 48\\ 40\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 48\\ 40\\ 40\\ 40\\ 40\\ 40\\ 40\\ 40\\ 40\\ 40\\ 40$	BridgeData = { New = function(_DstTagPath, _SrcTagPath) return { SrcTagPath = _SrcTagPath, DstTagPath = _DstTagPath, SrcTag = nil,
$\begin{array}{c} 8\\ 9\\ 10\\ 11\\ 12\\ 13\\ 14\\ 15\\ 16\\ 17\\ 18\\ 19\\ 20\\ 21\\ 22\\ 23\\ 24\\ 25\\ 26\\ 27\\ 28\\ 24\\ 25\\ 26\\ 27\\ 28\\ 29\\ 30\\ 31\\ 32\\ 33\\ 41\\ 35\\ 36\\ 37\\ 38\\ 39\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 11\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 40\\ 41\\ 42\\ 48\\ 40\\ 40\\ 41\\ 42\\ 48\\ 40\\ 40\\ 41\\ 42\\ 48\\ 40\\ 40\\ 40\\ 40\\ 40\\ 40\\ 40\\ 40\\ 40\\ 40$	<pre>{ New = function(_DstTagPath, _SrcTagPath) return { SrcTagPath = _SrcTagPath, DstTagPath = _DstTagPath, SrcTag = nil, } }</pre>
$\begin{array}{c} 3\\ 10\\ 11\\ 12\\ 13\\ 14\\ 15\\ 16\\ 17\\ 18\\ 19\\ 20\\ 21\\ 22\\ 23\\ 24\\ 25\\ 26\\ 27\\ 28\\ this\\ 29\\ 30\\ 31\\ 32\\ 23\\ 33\\ this\\ 34\\ 35\\ 36\\ 37\\ 38\\ 39\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 48\\ 46\\ 47\\ 48\\ 48\\ 48\\ 48\\ 48\\ 48\\ 48\\ 48\\ 48\\ 48$	return { SrcTagPath = _SrcTagPath, DstTagPath = _DstTagPath, SrcTag = nil,
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	{ SrcTagPath = _SrcTagPath, DstTagPath = _DstTagPath, SrcTag = nil,
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	SrcTagPath = _SrcTagPath, DstTagPath = _DstTagPath, SrcTag = nil,
$\begin{array}{c} 13\\ 14\\ 15\\ 16\\ 17\\ 18\\ 19\\ 20\\ 21\\ 22\\ 23\\ 24\\ 25\\ 26\\ 27\\ 28\\ this\\ 32\\ 33\\ 31\\ 32\\ 33\\ 33\\ this\\ 34\\ 35\\ 36\\ 37\\ 38\\ 39\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 47\\ 48\\ 40\\ 47\\ 48\\ 40\\ 47\\ 48\\ 40\\ 47\\ 48\\ 40\\ 47\\ 48\\ 40\\ 47\\ 48\\ 40\\ 47\\ 48\\ 40\\ 47\\ 48\\ 40\\ 40\\ 47\\ 48\\ 40\\ 40\\ 47\\ 48\\ 40\\ 40\\ 47\\ 48\\ 40\\ 40\\ 47\\ 48\\ 40\\ 40\\ 47\\ 48\\ 40\\ 40\\ 47\\ 48\\ 40\\ 40\\ 47\\ 48\\ 40\\ 40\\ 40\\ 40\\ 40\\ 40\\ 40\\ 40\\ 40\\ 40$	$\operatorname{SrcTag} = \operatorname{nil}_{\mathcal{A}}$
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	
$\begin{array}{c} 16\\ 17\\ 18\\ 19\\ 20\\ 21\\ 22\\ 23\\ 24\\ 25\\ 26\\ 27\\ 28\\ this\\ 29\\ 30\\ 31\\ 32\\ 33\\ this\\ 34\\ 35\\ 36\\ 37\\ 38\\ 39\\ 40\\ 41\\ 42\\ 43\\ 35\\ 36\\ 37\\ 38\\ 39\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 1$	DstTag = nil,
$\begin{array}{c} 11\\ 18\\ 19\\ 20\\ 21\\ 22\\ 23\\ 24\\ 25\\ 26\\ 27\\ 28\\ 29\\ 30\\ 31\\ 32\\ 33\\ 31\\ 32\\ 33\\ 31\\ 32\\ 33\\ 41\\ 35\\ 36\\ 37\\ 38\\ 39\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 46\\ 47\\ 48\\ 40\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 1$	////////////////////////////////////
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	PrepareTag method
$\begin{array}{c} 20\\ 21\\ 22\\ 23\\ 24\\ 25\\ 26\\ 27\\ 28\\ this\\ 29\\ 30\\ 31\\ 32\\ 33\\ this\\ 34\\ 35\\ 36\\ 37\\ 38\\ 39\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 46\\ 47\\ 48\\ 40\end{array}$	
$\begin{array}{c} 21\\ 22\\ 23\\ 24\\ 25\\ 26\\ 27\\ 28\\ this\\ 29\\ 30\\ 31\\ 32\\ 33\\ this\\ 34\\ 35\\ 36\\ 37\\ 38\\ 39\\ 40\\ 41\\ 42\\ 43\\ 35\\ 36\\ 37\\ 38\\ 39\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 46\\ 47\\ 48\\ 40\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 1$	PrepareTag = function(this) this SmTag = Dyn GetTag("" this SmTagPath);
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	this.DstTag = Dxp.GetTag("", this.DstTagPath);
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	
$\begin{array}{c} 26\\ 27\\ 28\\ 29\\ 30\\ 31\\ 32\\ 33\\ 34\\ 35\\ 36\\ 37\\ 38\\ 39\\ 40\\ 41\\ 42\\ 43\\ 39\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 46\\ 47\\ 48\\ 40\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 1$	local found = true,
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	if (this.SrcTag = nil) then
28 this 29 30 31 32 33 this 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48	Dxp.LogErrorMessage("BridgeData - Not found SrcTag ["
$\begin{array}{c} 20\\ 30\\ 31\\ 32\\ 33\\ 34\\ 35\\ 36\\ 37\\ 38\\ 39\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 40\\ 41\\ 40\\ 41\\ 40\\ 41\\ 40\\ 40\\ 41\\ 40\\ 40\\ 40\\ 40\\ 40\\ 40\\ 40\\ 40\\ 40\\ 40$	$\text{ns.Src1agPatn} \dots \text{ found} = \text{false};$
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	end
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	if (this.DstTag == nil) then
$\begin{array}{c} 334\\ 355\\ 36\\ 37\\ 38\\ 39\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 45\\ 46\\ 47\\ 48\\ 40\\ 41\\ 45\\ 46\\ 47\\ 48\\ 40\\ 40\\ 41\\ 45\\ 46\\ 47\\ 48\\ 40\\ 40\\ 41\\ 45\\ 46\\ 47\\ 48\\ 40\\ 40\\ 41\\ 45\\ 46\\ 47\\ 48\\ 40\\ 40\\ 41\\ 45\\ 46\\ 47\\ 48\\ 40\\ 40\\ 41\\ 45\\ 46\\ 47\\ 48\\ 40\\ 40\\ 40\\ 40\\ 40\\ 40\\ 40\\ 40\\ 40\\ 40$	nis.DstTagPath "]");
$\begin{array}{c} 35\\ 36\\ 37\\ 38\\ 39\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 10\end{array}$	found = false;
$ \begin{array}{r} 30 \\ 37 \\ 38 \\ 39 \\ 40 \\ 41 \\ 42 \\ 43 \\ 44 \\ 45 \\ 46 \\ 47 \\ 48 \\ 40 \\ \end{array} $	end
$\begin{array}{c} 38\\ 39\\ 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\end{array}$	if(found == false) then
$ \begin{array}{r} 39 \\ 40 \\ 41 \\ 42 \\ 43 \\ 44 \\ 45 \\ 46 \\ 47 \\ 48 \\ 40 \\ 41 \\ 45 \\ 46 \\ 47 \\ 48 \\ 40 \\ 41 \\ 45 \\ 46 \\ 47 \\ 48 \\ 40 \\$	this.SrcTag = nil;
$ \begin{array}{c} 40\\ 41\\ 42\\ 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 1$	this.DstTag = nil;
42 43 44 45 46 47 48	chu
$ \begin{array}{r} 43\\ 44\\ 45\\ 46\\ 47\\ 48\\ 40\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 1$	return found;
$ \begin{array}{c} 45 \\ 46 \\ 47 \\ 48 \\ 48 \end{array} $	end,
46 47 48 42 4	////////////////////////////////////
47 48	HasValue method
10	HasValues = function(this)
49	if (this.SrcTag:HasValue) == false) then
50 51	notum folco
52	return taise,
53	end if (this.DstTag:HasValue) == false) then
54 55	end if (this.DstTag:HasValue() == false) then return false;
56	end if (this.DstTag:HasValue() == false) then return false; end return true;
57	end if (this.DstTag:HasValue() == false) then return false; end return true; end,
58 59	end if (this.DstTag:HasValue() == false) then return false; end return true; end,
53 54 55 56 57 58	end if (this.DstTag:HasValue() == false) then



6.4.4 Example which defines the class in the external file (Timer)

This sample shows how you can define the class in the external file with the timer example. At first, make the tag (SYSTEM.Running).

Project Explorer 🛛 🔻 🕂 🗙	Tag List : SYSTEM 🗙				
II 🔤 🔤 📷	😨 🔊 🔎 🛐 System			√ S	ystemDevice
Project 'TimerSample'	Name	Data Type	Location	Value	Quality
SYSTEM	- Running	Bool	GB0		

Make the event script in the SYSTEM.

Project Explorer 🔷 4	Tag List : SYSTEM	Event List : SYSTEM 🗙		4 ⊳
II II II II	1 🖉 💋 🔎 🗐	SYSTEM		~
Project 'TimerSample'	Script	Event	Condition	Run
SYSTEM	(1) Initialize	Run Script	{ } { 500_Change(Value) "SYSTEM Running" }	Run
	a Startstor	Period	{ 500 }	Run

Initialize script (Run Script) loads the external script file. So you can use TimerSample class which is defined in the external file.

About the instance of TimerSample class you created, it stores to the global variable.

Script	Example (Initialize)
1	require("lua/TimerSample");
$\frac{2}{3}$	Timer
4	g_timer = TimerSample.New();
5	g_timer:Stop();
6	

StartStop script(SYSTEM.Running : Change(Value)) starts and stops the timer by calling the method of TimerSample instance.

スクリプト例(StartStop)
1 if (@t("SYSTEM.Running").Value == true) then
2 g_timer:Start();
3 Dxp.LogInfoMessage("Timer Start");
4 else
5 g_timer:Stop();
6 Dxp.LogInfoMessage("Timer Stop");
7 end
8

Timer script(Period) checks the time-up(10 second) and outputs the log message and repeats it.

Script Example (Timer)
1 if $(g_timer: Elapsed(10) = true)$ then
2 Dxp.LogInfoMessage("Time up !");
3 g_timer:StartAdd(10);
4 end
5

Make the external exript file in the "Lua" folder.

You should make "Lua" folder in the Bin Folder (C*Program Files (x86) TAKEBISHI Device XPlorer OPC Server 6 Bin it is first time to making the external script file.

Script Example (<bin folder="">¥Lua¥TimerSample.lua)</bin>	
1 if (LUA_TKB_TIMER_SAMPLE_INCLUDE == nil) then	
2 LUA_TKB_TIMER_SAMPLE_INCLUDE = 1;	
3	
4 **********************************	
5 TimerSample class	
	· · · · ·

6	***********************************	
7	TimerSample =	
8		
9	New = function()	
10	return	
11		
19	Bupping = true	
12	Lest Time - or time()	
10	Last fine – ostinev,	
14	////////////////////////////////////	
10	///////////////////////////////////	
10	Start method	
17	(((((((((((((((((((((((((((((((((((
18	Start = function (this)	
19	this.Last lime = $os.timeU$,	
20	this.Running = true,	
21	end,	
22		
23	////////////////////////////////////	
24	StartAdd method	
25	////////////////////////////////////	
26	StartAdd = function(this, sec)	
27	local now Time = os.time();	
28	this.LastTime = this.LastTime + sec;	
29		
30	if (this:Elapsed(sec) == true) then	
31	this.LastTime = nowTime - sec;	
32	end	
33		
34	this.Running = true;	
35	end,	
36		
37	////////////////////////////////////	
38	Elapsed method	
39	////////////////////////////////////	
40	Elapsed = function(this, sec)	
41	if (this.Running == false) then	
42	return false;	
43	end	
44		
45	local planTime = this.LastTime + sec;	
46	local nowTime = os.time();	
47		
48	local diffSec = os.difftime(planTime, nowTime);	
49	$if(diffSec \le 0)$ then	
50	lastTime = planTime;	
51	return true; Time up !	
52	end	
53		
54	return false; Not time up	
55	end,	
56		
57	////////////////////////////////////	
58	Stop method	
59	////////////////////////////////////	
60	Stop = function(this)	
61	this.Running $=$ false;	
62	end	
63	};	
64	end;	
65	}; · · · · · · · · · · · · · · · · · · ·	
66		
67	end	
68		

7 Troubleshooting

7.1 Error Messages

Error messages showed in log view are listed below.

Message	Contents
Open error (Code=XXXX)	Error occurred when opening port
Send error (Code=XXXX)	Error occurred when transmitting
Receive error (Code=XXXX)	Error occurred when receiving
Response timeout error (wait=xxx, got=xxx)	Response timed out. Wait=xxx indicates the byte size that the OPC Server is waiting. Got=xxx indicates the byte size that have been received actually
Size error of transmitted message	Size of the data that was actually sent was different from that of the send data. This error occurs if the cable is disconnected when the computer uses RS232C.
Size error of received message	Size of the data that was actually received was different from that of the data that it was supposed to receive. This error also occurs in RS232C communication.
Header error of received message	The head of received data is abnormal.
Received NAK (Code=XXXX)	NAK is received from PLC.
Communication Error	Any other error
Sum check error	The sum check results of received data do not correspond to the data of the message.
Bad com port handle	Requested device mode cannot be configured.
Receive queue overflow	Receive queue is overflow.
Receive overrun	Overrun error occurred when receiving data. Communicate by lowering the baud rate.
Receive parity error	Parity error occurred.
Receive framing error	Framing error occurred.
Received BREAK	BREAK was found in channels.
I/O Error	I/O error occurred.
Transmit queue overflow	Transmit queue is overflow.

* Contents of Code=XXXX depend on the port you use.

7.1.1 The source of the Response timeout error in the Ethernet connection

The outbreak factor that the Response timeout error in Ethernet connection is follows mainly. The trouble of the network adapter may be the outbreak factor.

No.	Source	Solution
1	High network load (Chronic / Momentary)	Please reduce the workload of network.
2	CPU-hogging (Chronic / Momentary)	Please reduce the workload of CPU.
3	Windows ARP (the case which time-out error occurs every 10	Please change ARP cache settings of Windows
	minutes)	OS.
4	Time of time out of Ethomat part is short	Please extend the time of Time-out of
	Time of time out of Ethernet port is short.	Ethernet port on DeviceXPlorer.
Below is source of timeout error in case of UDP/IP (In case of TCP/IP, Open error occurs by these source 5 and 6.)		
5	DI Crown is off on the IAN cohle is break	Please check the power condition and LAN
	FLC power is on or the LAN cable is break.	cable.
6	The Ethernet parameter of PLC and DeviceXPlorer may be	Please check the Ethernet parameter of PLC
	mistake.	and DeviceXPlorer.

Note TCP/IP communication is stable communication protocol. So if you can select UDP/IP or TCP/IP, please use TCP/IP.

7.1.2	Ethernet Error Code (Winsock Error Code)
-------	--

Code	Contents
10024	There are no available file descriptors.
10022	Socket is not bound yet to address.
10035	Connection could not be completed because of unblocking socket. Time-out error occurred.
10036	Windows socket operation that is currently executed is blocked.
10038	Descriptor is not a socket.
10039	Address is required.
10040	Datagram was shortened because it was too long to fit the specified buffer.
10048	The defined address is currently occupied. (This error happens when you set the number other than 0 as the port number.)
10049	The specified address is not available from the local machine.
10050	Windows socket implement found out an error of network subsystem.
10051	Now it is unable to reach network from host.
10052	Windows socket implement dropped a socket. You should reset the connection.
10053	Virtual circuit is aborted because of time-out error or some other error. Check Ethernet cable.
10054	Virtual circuit was reset from the Remote. This error happens when CPU has been reset and power has been turned off.
10055	There is no available buffer range. Socket cannot be connected. Please reduce the number of connections of TCP.
10056	Socket has already been connected.
10057	Socket is not connected.
10058	Socket was shut down.
10060	Connection was attempted but not completed because it timed out. Check the Ethernet channels and PCL programming.
10061	Connection was attempted but rejected. Previous connection remains in the PLC. Reset CPU or turn off the signal for open request. Check the port number:
258 39321	Connecting PLC is failed by timeout. Please confirm whether the PLC works well or not.

7.1.3 Serial Error Code

Code	Contents
2	Specified port does not exist.
5	Specified port already open by other process.

7.2 Others

7.2.1 If the application screen does not display properly

If the screen layout information of the application stored in the registry of the Windows OS is corrupted for some reason, the screen of the application will not be displayed properly.

In that case, close the application, execute "InitializeWorkspace.reg" in the "Bin" folder of the installation directory, initialize the screen layout, and then restart the application.
8 Appendix

8.1 How to use of the OPC Test Client

Please refer Client Sample Manual.

You can open the manual at "Client Sample Manual" at "Client Sample" at "DeviceXPlorer" at "programs" at Start Menu of Windows.

8.2 About Sample Programs

Sample programs are stored in the Samples folder of the folder of DeviceXPlorer installation directory. Please refer to the "Samples" folder of installation media for the other sample program. For details, please refer to a DeviceXPlorer client sample guide.

8.3 User Support

TAKEBISHI offers a user support service to customers who have completed user registration. If you have any questions about how to set up or operate DeviceXPlorer, please contact the support service detailed below.

User Support TEL 075-325-2261/FAX 075-325-2273

fa-support@takebishi.co.jp

Open: 9:00 - 12:00/13:00 - 17:00

When you contact the support service, you will be asked to confirm the following information, so please have it ready.

- (1) Product name, serial number (written on the CD, license certificate)
- (2) PC model, OS/service packs
- (3) PLC CPU type, communication unit model
- (4) Client software version/service pack/development language

Note

The support service may not be able to answer questions that do not relate to DeviceXPlorer, such as how to set up the hardware and device driver or how to program the sequence programs and sample programs.

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8.4.3 tolua++

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8.4.6 Libxml2

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User's Guide Server Edition

