OPC UA as large scale aggregation server

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Aggregation server

Merge multiple servers & address spaces into one server (and alarms & conditions + historial data)

- Use cases:
 - DNA contains multiple servers for training systems
 - Profinet segment can contain 50-100 SimoCode motor controllers with embedded OPC UA Server
 - Multiple DNA-OPCUA-Server 5000-10000 tags => Target to provide 100000 variables, large Mill / Marine ship
 - One DNA-OPCUA-Server with dna-interconnect starts fast & response time with DNA good
 - Aggregate server will connect to 10 DNA-OPCUA-Servers to provide one large address space
- Useless to use own client for each server
- Implementation:
 - Pure OPC UA Server & client program (binary protocol, 64-bit program code & memory management)
 - Connect, crawl, "clone address space" and subscribe alarms & conditions
 - Address space divided into own namespaces / sub-server
 - Subscription/read/write to aggregation server will be done on demand to sub-server
 - Sub-server can crash/stop, server will re-connect
 - Alarms are cloned run-time as each alarm is received from the sub-server







Left: without aggregation - right: with aggregation server



Figure 2. Resulting connection mesh.

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OPC UA server aggregation — The foundation for an internet of portals



Figure 3. Aggregation server.

Published in Proceedings of the 2014 IEEE Emerging Technology and Factory Automation (ETFA) 2014 OPC UA server aggregation — The foundation for an internet of portals



OPC UA Server – Client – Aggregate for the Mill & Cloud integration Safe way to share values over OPC UA



Configuration



Aggregation server – simple configuration Simple text file – example for 3 "sub-servers"

• Line contains 3 values:

"Server-endpoint" "root-nodeld" "filter"

≡ config.txt

- 1 opc.tcp://H7Q8Q13.mshome.net:53530/OPCUA/SimulationServer ns=3;s=85/0:Simulation ns=3;
- 2 opc.tcp://H7Q8Q13.VSTAGE.C0:26545/ ns=0;i=85 ns=1;s=
- 3 opc.tcp://H7Q8Q13.mshome.net:53530/OPCUA/SimulationServer ns=5;s=DataItems ns=5;s=

 Similar way to connect DNA OPC UA Servers (no filter): opc.tcp://A1UA:62544 ns=1;s=DNA opc.tcp://A2UA:62545 ns=1;s=DNA
 opc.tcp://A3UA:62546 ns=1;s=DNA



Limitations: Methods, Views, Types & Event hierarchy

- Methods are NOT cloned / supported, aggregator will not support method call to sub-server
- Views are NOT cloned / supported
- Types are NOT cloned / supported (sub-server custom types)
- Events are not cloned from original address space, instances are created during runtime
 - New events are created under AllCollectedEvents and under sub-server hostname
 - Address Space 🈏 No Highlight C Root ⊿ in Objects AllCollectedEvents ac:ns=1;s=ae/82PIZ-44016 ac:ns=1;s=ae_32LC643/meha ac:ns=1;s=ae 82PIZ-44014/ha ac:ns=1;s=ae_82PIZ-44015/ha ac:ns=1;s=ae_82PIZ-44016/ha - Þ 🔘 ac:ns=1;s=ae ACUNIT1T4/ha Þ 🔘 ac:ns=1;s=ae_M2-LTANK2-PMP3 Þ 🔘 ac:ns=1;s=ae TOSI-FSA-0519 ac:ns=1:s=ae TOSI-FSA-0520 ac:ns=1;s=ae_TOSI-LCS-0084/mela ac:ns=2;s=MyLevel 🕨 💑 Server Server0|DNA Image: A label{eq:A label{A label{label{A label{A label{A label{A label{A label{A label{A l



Testing



Testing: OPC UA aggregation server

- 1. Basic functionality:
 - Clone address space variables (sub-server must be running)
 - All Types working (at least needed basic types & tables):
 - DA read/write (with same hierarchy as at original sub-server, folders/sub-folders/objects)
 - A&C with acknowledge/comment (Acknowledge/Comment/Confirm with comment is write to sub-server)
 - HA (History trend data is read from sub-server)
 - Permissions are set as default DNA permissions
- 2. Communication:
 - Sub-server (one of multiple) re-started / shutdown for a while, Status code of variables, re-connect
- 3. Long term functionality:
 - No memory leaks / no crashes
 - Steady & solid communication without any breaks



Testing: Basic functionality - Aggregated address space Separated namespace for each sub-server





Testing: Aggregator address space cloned from DNA-OPCUA-Server

Project	ð ×	Data Access View	History Trend View	Event View	Server Dia	gnostics View					0	Attributes			ð ×
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Valmet DNA Aggregate Server		2 Valmet DN	NSSIStringINS=1	S=OPCUA-TE	ST-AM/	adu	1		UInt16		10:01:03.0	Attribute		Value	
× Documents		3 Valmet DN	NS5 String NS=1	S=OPCUA-TE	ST-AM/av	av	51		Float		3:41:20.57	✓ Nodeld		ns=5;s=NS=1;S=OPCUA-TEST-AM	
Data Access View		4 Valmet DN	NS5 String NS=1	IS=OPCUA-TE	ST-AM/fa	fa	0		UInt16		10:01:02.9	Name	paceIndex	5	
Data Access View		5 Valmet DN	NSSIString NS=1	S=OPCUA-TE	ST-AM/h	h	80		Float		10:01:03:0	Identi	ierType	String	
Fistory Irend View		7 Valmet DN	NS5 String NS=1	S=OPCUA-TE	ST-AM/ha	ha	0		UInt16		10:01:02.9	Identi	ier	NS=1;S=OPCUA-TEST-AM	
Event View		8 Valmet DN	NS5 String NS=1	S=OPCUA-TE	ST-AM/	hamask	0		UInt16		10:01:03.0	NodeCla	5	Object	
JI Server Diagnostics View		9 Valmet DN 10 Valmet DN	NSSIString NS=1	S=OPCUA-TE	ST-AM/	harm	true		Eloat		10:01:03:0	BrowseN	ime	5. "OPCUA-TEST-AM"	
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C. No Michight		12 Valmet DN	NS5 String NS=1	S=OPCUA-TE	ST-AM/	hha	0		UInt16		10:01:02.9	Descripti	n		
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Children Children	<u> </u>	15 Valmet DN	NS5 String NS=1	S=OPCUA-TE	ST-AM/	hyst	1		Float		10:01:02.9	UserWrit	Mask	0	
		16 Valmet DN	NS5 String NS=1	S=OPCUA-TE	ST-AM/I		0		Float		10:01:02.8	✓ RolePerm	issions	RolePermissionType Array[6]	
Allases		18 Valmet DN	NSSIStringINS=1	S=OPCUA-TE	ST-AM/L	lamask	ő		UInt16		10:01:02.9	~ [0]		RolePermissionType	
> AllCollectedEvents		19 Valmet DN	NS5 String NS=1	S=OPCUA-TE	ST-AM/L.	larm	true		Boolean		10:01:03.0	> Rol	eld	i=15644 [WellKnownRole Anonymous]	
> 🙀 DeviceSet		20 Valmet DN	NS5 String NS=1	S=OPCUA-TE	ST-AM/L.	latd	0		Float		10:01:03.0	Per	missions	Renuse ReadPoleDermissions Read	
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> 💑 NetworkSet		24 Valmet DN	NSS[String]NS=1	S=OPCUA-TE	ST-AM/L.	Itd	0		Float		10:01:02.8	2 ROI	eid	1=15656 (WellKnownKole_Authenticatedu	serj
> 🐥 Server		25 Valmet DN	NS5 String NS=1	S=OPCUA-TE	ST-AM/	out	51		Float		10:01:02.8	Per	missions	Browse, ReadRolePermissions, Read, Read	History
V 😂 Server0(DNA		20 Valmet DN 27 Valmet DN	NSSIStringINS=1	S=OPCUA-TE	ST-AM-	Definition	0		String		10:03:10.1	V [2]		RolePermissionType	
Y 🗀 DNA		28 Valmet DN	NS5 String NS=1	S=OPCUA-TE	ST-AM	EURange	Doub	ble click to display value	Extension	Object - Range	10:03:10.1	> Rol	eld	i=15680 [WellKnownRole_Operator]	
🗸 🗀 AP40		29 Valmet DN	NS5 String NS=1	I;S=OPCUA-TE	ST-AM	EngineeringUnits	Dout	ble click to display value	Extension	Object - EUInform	10:03:10.1	Per	missions	Browse, ReadRolePermissions, Read, Write	, Read
Y 🔁 pr												✓ [3]		RolePermissionType	~
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> OPCUA-TEST-AM/av												References			
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Testing: Aggregator address space cloned from DNA INFO Server NOTE: Nodeld is changed to DNA according the variable name

Original opaque nodeld is hex based string (hard to remember & configure)

Project Ø	×	Data Access View	History Trend View	Event View	Server Dia	agnostics View					0	Attributes		@ ×
✓		# Server	N	lode Id		Display Name		Value		Datatype	urce Time	😏 🧹 📐 🐵		0
✓	1	1 Valmet DN	NS6lStringl6/TC01	-AM001:av		Measurement	40.2857		Float		2:43:27.00	Attribute	Value	~
Valmet DNA Aggregate Server												he Medeld		
✓ [™] Documents												 Nodeld 	ns=6;s=6:1C01-AM001:av	
Data Access View												NamespaceIndex	6	
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Event View												NedeClass	6:TCUT-AMOUTAV	
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🨏 No Highlight	•											WriteMask	0	
> 💑 ProcessorTime(3)	^											UserWriteMask	0	
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ProcessorTimepcsif												× [0]	RolePermissionType	
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> SQLINUX-DOSX1.Fin2_1												Permissions	Browse ReadRolePermissions Read	
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> SQLINUX-DOSX2.F:in1												> Roleid	i=15656 [WellKnownRole Authenticater	411-
> SQLINUX-DOSX2.Fin2_1												Permissions	Browse ReadRolePermissions Read Re-	adi
SQLINUX-DOSX2.Fin2_2												× [2]	RolePermissionTyne	
> 💑 SelectionOut1												> Roleld	i=15680 [WellKnownRole Operator]	
> 💑 SelectionOut2												Permissions	Browse ReadRolePermissions Read Wr	ite
> 💑 SelectionOut3												× [3]	RolePermissionType	
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> 💑 TC01-AM004:av												HasProperty EngineeringU	hits	
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Testing: Address space – alarms in own server specific folder All variables collected same way to own server specific folder & namespace



Unified Automation UaExpert - The OPC Unified Architecture Client - Aggregate-server

<u>File View Server D</u> ocument <u>Settings</u>	<u>H</u> elp													
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✓		#		Server		Node Id	Disp	lay Name	Value	Datatype	Source Timestam	Server Timestamp		Statuscode ^
✓		1	SimulationSet	rver@H708013	NS3INumer	ic11001	Count	ter	16	Double	18,57,29	18,57,29	Good	
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		3	SimulationSe	rver@H7Q8Q13	NS5 String F	loatDataltem	FloatD	ataltem	0	Float	18.46.25	18.56.16	Good	
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🚫 Valmet DNA Aggregate Server		5	SimulationSe	rver@H7Q8Q13	NS3 Numer	ic 1002	Rando	m	-0.7190085	Double	18.57.29	18.57.29	Good	
✓		6	SimulationSe	rver@H7Q8Q13	NS3 Numer	ic 1003	Sawto	oth	-0.4	Double	18.57.29	18.57.29	Good	
Data Accors View		7	SimulationSet	rver@H7Q8Q13	NS3 Numer	ic 1004	Sinuso	bid	-0.4158235	Double	18.57.29	18.57.29	Good	
Data Access view		8	SimulationSei	rver@H/Q8Q13	NS3 Numer	ic 1005	Squar	e	2	Double	18.57.28	18.57.28	Good	
Event View		10	SimulationSei	rver@H/Q8Q13	NS3 Numer		Iriang	le Ab4/au	-0.2000007	Double	18.57.29	18.57.29	Good	
📁 Server Diagnostics View		11	Valmet DNA 3	Aggregate Server	NSTJString	icl0	Count	AIVI/dV	15	Double	18.57.28	19.57.29	Good	
Server Diagnostics View-1		12	Valmet DNA	Aggregate Server	NS2INumer	icl1	Rando		-1 077334	Double	18 57 28	18 57 28	Good	
Server braghostics from 1		13	Valmet DNA	Aggregate Server	NS2INumer	icl2	Sawto	oth	-0.8	Double	18.57.28	18.57.28	Good	
		14	Valmet DNA	Aggregate Server	NS2INumer	icl3	Sinuso	bid	-0.8134733	Double	18,57,28	18.57.28	Good	
		15	Valmet DNA	Aggregate Server	NS2INumer	icl4	Squar	e	2	Double	18.57.28	18.57.28	Good	
		16	Valmet DNA	Aggregate Server	NS2 Numer	ic 5	Triang	le	-0.5333333	Double	18.57.28	18.57.28	Good	
		17	Valmet DNA /	Aggregate Server	NS2 Numeri	ic 6	ns=3;s	s=Counter		Null	18.56.16	18.56.16	Good	
		18	Valmet DNA /	Aggregate Server	NS3 Numeri	ic 7	14L01	6AC001/me	5.38	Float	18.57.27	18.57.27	Good	
Address Space	θ×	19	Valmet DNA /	Aggregate Server	NS3 Numeri	ic 8	ECB10	DS202/av	717	Float	18.57.27	18.57.27	Good	
No Highlight	-	20	Valmet DNA	Aggregate Server	NS3 Numer	ic 9	ECB30	DS001/av	727	Float	18.57.27	18.57.27	Good	
		21	Valmet DNA /	Aggregate Server	NS3 Numer	ic 10	ECB30	DS002/av	747	Float	18.57.27	18.57.27	Good	
🗀 Root	^	22	Valmet DNA /	Aggregate Server	NS3 Numer	ic[11	FCV-1	103/av	11.1	Float	18.57.27	18.57.27	Good	
Objects		23	Valmet DNA /	Aggregate Server	NS3 Numer	ic 12	FI-120	SK/av	776 2	Float	18.57.27	18.57.27	Good	
> Aliana		24	Valmet DNA /	Aggregate Server	NCON	ic 15	FI-120	OK/av	770.5	Float	10.37.27	10.37.27	Good	
Alldses		26	Valmet DNA /	Aggregate Server	NS3INumer	icl15	HKA1		77 /	Float	18.57.27	18.57.27	Good	
AllCollectedEvents		27	Valmet DNA	Aggregate Server	NS3INumer	icl16	PDI-12	226/av	776	Float	18 57 27	18 57 27	Good	
H7Q8Q13.mshome.net		28	Valmet DNA	Aggregate Server	NS3INumer	icl17	PI-132	9/av	77	Float	18.57.27	18.57.27	Good	
> 🥥 ac:Myl evel		29	Valmet DNA	Aggregate Server	NS3INumer	icl18	OI-310	03/av	77	Float	18.57.27	18.57.27	Good	
		30	Valmet DNA	Aggregate Server	NS3 Numer	ic 19	QTI-12	271/av	166	Float	18.57.27	18.57.27	Good	
> 📭 ev:iviyLevel		31	Valmet DNA /	Aggregate Server	NS3 Numer	ic 20	SIR-12	68K/av	77	Float	18.57.27	18.57.27	Good	
> 💑 Server		32	Valmet DNA /	Aggregate Server	NS3 Numeri	ic 21	SIR-12	.69/av	77	Float	18.57.27	18.57.27	Good	
Server0lSimulation		33	Valmet DNA /	Aggregate Server	NS3 Numer	ic 22	TDI-12	215KA/av	77	Float	18.57.27	18.57.27	Good	
> Counter		34	Valmet DNA /	Aggregate Server	NS3 Numer	ic 23	TDI-15	515MN/av	77	Float	18.57.27	18.57.27	Good	
		35	Valmet DNA /	Aggregate Server	NS3 Numer	ic 24	TEST-/	AM/av	66	Float	18.57.27	18.57.27	Good	
> 💷 Random		30	Valmet DINA /	Aggregate Server	NS3[Numer	10/25	II-123	3/av	500.8	Float	18.57.27	18.57.27	Good	
> 💷 Sawtooth		37	Valmet DNA	Aggregate Server	NS3INumer	10/20	TI-129	0/av	11	Float	18.57.27	18.57.27	Good	
> Cinusoid		30	Valmet DNA /	Aggregate Server	NS3INumer	10/27	TI-135	0/dv 6/av	277	Float	18.57.27	18.57.27	Good	
		40	Valmet DNA	Aggregate Server	NS3INumer	ic120	TI-165	Q/av	877	Float	18 57 27	18 57 27	Good	
> 🕒 Square		41	Valmet DNA	Aggregate Server	NS3INumer	icl30	TIC-13	302.2/me	6	Float	18.57.27	18.57.27	Good	
> 💷 Triangle		42	Valmet DNA	Aggregate Server	NS4INumer	icl31	Boole	anDataltem	true	Boolean	18.56.14	18.56.14	Good	
> Ins=3;s=Counter		43	Valmet DNA /	Aggregate Server	NS4 Numer	ic 32	ByteD	ataltem	0	Byte	18.56.15	18.56.15	Good	
V C Server110hiects		44	Valmet DNA	Aggregate Server	NS4 Numeri	ic 33	ByteSt	tringDatal	00	ByteString	18.56.15	18.56.15	Good	
		45	Valmet DNA /	Aggregate Server	NS4 Numer	ic 34	DateTi	imeDatalt	2021-06-01T15:	DateTime	18.56.15	18.56.15	Good	
> 📹 14L016AC001/me		46	Valmet DNA /	Aggregate Server	NS4 Numer	ic 54	Defini	tion	Test definition o	String	18.56.15	18.56.15	Good	
> ECB10DS202/av		47	Valmet DNA /	Aggregate Server	NS4 Numer	ic 53	Defini	tion	Test definition o	String	18.56.15	18.56.15	Good	
ECB30DS001/av		48	Valmet DNA /	Aggregate Server	NS4 Numer	ic 51	Defini	tion	lest definition o	String	18.56.15	18.56.15	Good	
CCD30D5003/		49	Valmet DINA /	Aggregate Server	NS4 Numer	10/00	Defini	tion	lest definition o	String	18.50.15	18.50.15	Good	
		51	Valmet DNA /	Aggregate Server	NS4INumer	ici50	Defini	tion	Test definition o	String	10.00.10	10.00.10	Good	
> 📹 FCV-1103/av		52	Valmet DNA /	Aggregate Server	NS4INumer	icl57	Defini	tion	Test definition o	String	18 56 15	18 56 15	Good	
> I FI-1203K/av		53	Valmet DNA	Aggregate Server	NS4INumer	icl61	Defini	tion	Test definition o	String	18.56.15	18.56.15	Good	
EI-1206K/av		54	Valmet DNA	Aggregate Server	NS4INumer	icl56	Defini	tion	Test definition o	String	18.56.15	18,56,15	Good	
>		55	Valmet DNA	Aggregate Server	NS4 Numer	icl60	Defini	tion	Test definition o	String	18.56.15	18.56.15	Good	
HEDTUACUUT/av		56	Valmet DNA	Aggregate Server	NS4 Numer	ic 58	Defini	tion	Test definition o	String	18.56.15	18.56.15	Good	
>		57	Valmet DNA	Aggregate Server	NS4 Numer	ic 49	Defini	tion	Test definition o	String	18.56.15	18.56.15	Good	
> DI-1226/av		58	Valmet DNA /	Aggregate Server	NS4 Numer	ic 59	Defini	tion	Test definition o	String	18.56.15	18.56.15	Good	~
DI-1320/av/	~	<												>
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Testing: Aggregator address space cloned from Siemens RFID reader NOTE: Some of AutoID type structures are not supported => no DNA type available

Project Ø ×	D	sta Access View	History Trend View	Event View Server 0	Nagnostics View			0	Attributes		9 ×
✓ [™] Project	1	Server	N	lode Id	Display Name	Value	Datatype	urce Time	🗿 🥪 📐 🐵		0
Y 📶 Servers	1	Valmet DN	NC7ICtringINC-AI	-6000	AutoIdModelNerrico	100	String	11-10-05 5	A second second		-
Valmet DNA Anorenate Server	2	Valmet DN	NS7IString[NS=4]	=6010	DeviceInfo	AutoID integration to Node-RED	String	11:1805.5	Attribute	Value	
Commerce and Angelegate server	3	Valmet DN	NS7 String NS=43	=6027	DeviceLocationName	Tampere	String	11:18:05.5	✓ Nodeld	ns=7;s=NS=4;1=5002	
• Documents	4	Valmet DN	NS7 String NS=4;	=6001	DeviceManual	http://192.168.75.175/Default.mwsl#page=16	String	11:18:05.5	NamespaceIndex	7	
Data Access View	5	Valmet DN	NS7 String NS=4)	=6011	DeviceName	Readpoint_11	String	11:18:05.5	IdentifierType	String	
History Trend View	7	Valmet DN	NS7[String]NS=4]	=6002 1=6012	DeviceStatus	0	Int32	11:18:05.5	Identifier	NS=41=5002	
🇊 Event View	8	Valmet DN	NS7[String[NS=4]	=6003	HardwareRevision	1	String	11:18:05.5	ModeClass	Object	
📁 Server Diagnostics View	9	Valmet DN	NS7 String NS=4)	=6030	LastScanData		String	11:18:05.5	Nodeciass	Object	
	10	Valmet DN	NS7 String NS=4)	=6004	Manufacturer	"en-US", "Siemens AG"	LocalizedText	2:40:21.17	BrowseName	7, "Read_point_1"	
Address Space & X	12	Valmet DN	NS7[String[NS=4]	=6005 =6006	RevisionCounter	-1	Int32	11:18:05.5	DisplayName	", "Readpoint_11"	
😏 No Highlight 🔹	13	Valmet DN	NS7 String NS=4)	=6007	SerialNumber	VPKN765462	String	11:18:05.5	Description		
C Root	14	Valmet DN	NS7 String NS=41	=6008	SoftwareRevision	V01.00.00.00_02.12.01	String	11:18:05.5	WriteMask	0	
✓ ☺ Objects	15	Valmet DN	NS7[String[NS=4] NS7[String[NS=4]	=6248	ExecuteScan SimaticIdentModeWarrion	false V110	Boolean	11:18:05.5	UserWriteMask	0	
	17	Valmet DN	NS7(String)NS=4)	=7237	Presence	0	Ulat16	11:18:05.5	✓ RolePermissions	RolePermissionType Array[6]	
All Collected Constra	18	Valmet DN	NS7[String]NS=43	=6249	CodeTypesRWData	1 I	UInt32	11:18:05.5	✓ [0]	RolePermissionType	
All Collected Events	19	Valmet DN	NS7 String NS=4)	=6249-EnumStrings	EnumStrings	Double click to display value	LocalizedText	10:23:40.4	> Roleld	i=15644 [WellKnownRole Anonymous]	
> 💑 DeviceSet	20	Valmet DN	NS7 String NS=41	=6261	LastLogEntry	2022-10-28T07:23:33.459+00:00 COMMON Reade	String	11:18:05.5	Dermissions	Browne ReadPoleDermissions Read	
DeviceTopology	21	Valmet DN	NS7[String]NS=4]	=6262	LogColumns	Date_Time; Type; Entry; Command_Type; Readpoint	String	11:18:05.5	Permosions	DeleBernissienTure	
> in License status	23	Valmet DN	NS7IStringINS=41	=6252	Command		String	11:18:05.5	♥ [1]	NotePermissionType	
> 💑 NetworkSet	24	Valmet DN	NS7 String NS=43	=6253	Identifier		String	11:18:05.5	> RoleId	i=15656 [WellKnownRole_AuthenticatedUser]	
> 📥 Server	25	Valmet DN	NS7 String NS=4)	=6254	Antenna	0	Int32	11:18:05.5	Permissions	Browse, ReadRolePermissions, Read, ReadHistory	۵
Server0IDNA	26	Valmet DN	NS7[String[NS=4]	=6258	RWData		String	11:18:05.5	¥ [2]	RolePermissionType	
> Constitution									> RoleId	i=15680 [WellKnownRole_Operator]	
A Control (Control of an									Permissions	Browse, ReadRolePermissions, Read, Write, Read	d i
✓ Server∠ DeviceSet									× [3]	RolePermissionType	1
Y 🍓 DeviceSet										in the second	×
Readpoint_11									٢	>	_
AutoIdModelVersion									References		# ×
DeviceInfo									G 🛹 🔥 🏟 Forward		0
DeviceLocationName											~
DeviceManual									Reference Target D	DisplayName	
DeviceName									HasTypeDe BaseObj	ectType	
DeviceRevision									HasCompo., AutoIdN	fodelVersion	
DeviceStatur									HasCompo Devicelr	nte.	
 Devices datas Handware Basisian 									HasCompo Devicel	ocationName	
 Hardwarekevision 									HarCompo. DeviceM	lacual	
🐢 IOData									HasCompo Devicely	1 arruali	
LastScanData									HasCompo Devicery	lame	
Manufacturer									HasCompo DeviceR	evision	
Model									HasCompo Hardwar	reRevision	
RevisionCounter									HasCompo Manufac	turer	
> 🜲 RuntimeParameters									HasCompo Model		
SerialNumber									HasCompo Revision	Counter	
SoftwareRevision									HasCompo SerialNu	mber	
									HasCompo Software	Revision	
> m server, onimands									HarCompo. DeviceS	Taking	
/ u types									Oranging 100-to	VETING	
U Views									Unganizes ToData	D-ta	
									Hascompo LastScar	it ata	
									Organizes Runtime	Parameters	



Testing: Basic functionality

Clone address space (not Views/Methods/Types, only configured part of the address space)





Testing: Basic functionality

Address space structure/hierarchy: Folders & Objects

• Prosys UA Simulation server variables:

# Server Node Id Display Name Value Datatype jource Timestamp Server Timestamp	Statusco
	Good
1 Valmet DNA Ag NS3 String ns=5;s=Counter1 Counter1 42 Int32 2022-03-31T06: 2022-03-31T06:	0000
2 Valmet DNA Ag NS3[String]ns=5;s=Expression1 Expression1 1.99999936187 Double 2022-03-31T06: 2022-03-31T06:	Good
3 Valmet DNA Ag NS3 String ns=5;s=Random1 Random1 0.691233637362 Double 2022-03-31T06: 2022-03-31T06:	Good
4 Valmet DNA Ag NS3 String ns=5;s=Sawtooth1 Sawtooth1 0 Double 2022-03-31T06: 2022-03-31T06:	Good
5 Valmet DNA Ag NS3 String ns=5;s=Sinusoid1 Sinusoid1 -6.38133827377 Double 2022-03-31T06: 2022-03-31T06:	Good
6 Valmet DNA Ag NS3 String ns=5;s=Square1 Square1 -2 Double 2022-03-31T06: 2022-03-31T06:	Good
7 Valmet DNA Ag NS3 String ns=5;s=Triangle1 Triangle1 -4.06248611925 Double 2022-03-31T06: 2022-03-31T06:	Good
8 SimulationServer NS5[String]Counter1 Counter1 43 Int32 2022-03-31T06: 2022-03-31T06:	Good
9 SimulationServer NS5 String Expression1 Expression1 2.8158228538 Double 2022-03-31T06: 2022-03-31T06:	Good
10 SimulationServer NS5[String]Random1 Random1 0.869825432848 Double 2022-03-31T06: 2022-03-31T06:	Good
11 SimulationServer NS5[String]Sawtooth1 Sawtooth1 0.39999961853 Double 2022-03-31T06: 2022-03-31T06:	Good
12 SimulationServer NS5[String]Sinusoid1 Sinusoid1 0.415823235265 Double 2022-03-31T06: 2022-03-31T06:	Good
13 SimulationServer NS5[String]Square1 Square1 -2 Double 2022-03-31T06: 2022-03-31T06:	Good
14 SimulationServer NS5[String]Triangle1 Triangle1 0.266666571403 Double 2022-03-31T06: 2022-03-31T06:	Good

• Deep folder / parent object:





Testing: Basic functionality Variables: Value & Statuscode

• DNA-OPCUA-Server variables: Set original Statuscode to aggregate server

| Data Access View | | | | |
 | | | # Server
 | Node Id
 | Display Name Value | Datatype
 | Source Timestamp | Server Timestamp | Statuscode
 | |
|---|--|---|---|--
--|--|---
--

---|---
--|--|---|
| # Server | Node Id | Display Name | Value | Datatype | Jource Timestam
 | Server Timestame | Statuscode | 1 Valmet DNA Aggregate S N
2 Valmet DNA Aggregate S N
3 Valmet DNA Aggregate S N
 | S2 String ns=1;s=TEST_ANA T
S2 String ns=1;s=TEST_ANAEV
 | EST_ANA 2.64569
/EST_ANAEV 0
/EST_INT16 0 | Float
Float
Jot 16
 | 2022-03-31T06:03:47.311Z
2022-03-31T06:03:47.311Z
2022-03-31T06:03:47.311Z | 2022-03-31T06:03:47.357Z G
2022-03-31T06:03:47.357Z G
2022-03-31T06:03:47.357Z G | ood
 | |
| 1 DNA-OPCUA-Server | NS1IStringIG8OC13P002XH04 | G8OC13P002XH | 0 | Ulnt16 | 2022-03-31T05
 | 2022-03-31T06 | BadNotConnected | 4 Valmet DNA Aggregate S N
5 Valmet DNA Aggregate S N
 | A2 String ns=1;s=TEST_INT32 T
S2 String ns=1;s=TEST_INT8
 | EST_INT32 0
(EST_INT8 0 | Int32
SByte
 | 2022-03-31T06:03:47.311Z
2022-03-31T06:03:47.311Z | 2022-03-31T06:03:47.357Z G
2022-03-31T06:03:47.357Z G | ood
 | |
| 2 DNA-OPCUA-Server | NS1IStringlpr-G8QC13P002XH04 | G8QC13P002XH | false | Boolean | 2022-03-31T06:
 | 2022-03-31T06: | Good | 7 Valmet DNA Aggregate S N
8 Valmet DNA Aggregate S N
 | s2 StringIns=1;s=TEST_UNS10 1 S2 StringIns=1;s=TEST_UNS12 1
 | EST_UNS32 0 | UInt32
Byte
 | 2022-03-31106:03:47.3112
2022-03-31106:03:47.3112
2022-03-31106:03:47.3112 | 2022-03-31106:03:47.357Z G | ood
ood
 | |
| 3 DNA-OPCUA-Server | NS1 String pr-G8QC13P003XH04 | G8QC13P003XH | false | Boolean | 2022-03-31T06:
 | 2022-03-31T06: | Good | 9 Valmet DNA Aggregate S N
10 Valmet DNA Aggregate S N
 | J2 String ns=1;s=TOSI-LCS-0084-con
S2 String ns=1;s=TOSI-LCS-0084-ma
 | OSI-LCS-0084/ 41.6936
(OSI-LCS-0084/ true | Float
Boolean
 | 2022-03-31T06:04:33.325Z
2022-03-31T06:03:47.311Z | 2022-03-31T06:04:33.464Z G
2022-03-31T06:03:47.357Z G | ood
 | |
| 4 DNA-OPCUA-Server | NS1 String G8QC13P003XH04 | G8QC13P003XH | 0 | UInt16 | 2022-03-31T05:
 | 2022-03-31T06: | BadNotConnected | 11 Valmet DNA Aggregate S N
12 Valmet DNA Aggregate S N
13 Valmet DNA Aggregate S N
 | s2[String]ns=1;s=TOSI-LCS-0084-wdd
52[String]ns=1;s=TOSI-LCS-0084-wdd
52]String]ns=1;s=TOSI-LCS-0084-wdd
 | OSI-LCS-0084/ 50.7757
OSI-LCS-0084/ 0 | Float
Ulnt32
Ulot16
 | 2022-03-31106:04:33.325Z
2022-03-31106:03:47.311Z
2022-03-31106:03:47.311Z | 2022-03-31T06:04:33.464Z G
2022-03-31T06:03:47.357Z G
2022-03-31T06:03:47.357Z G | ood
ood
 | |
| 5 DNA-OPCUA-Server | NS1 String pr-G8QC13P004XH04 | G8QC13P004XH | false | Boolean | 2022-03-31T06:
 | 2022-03-31T06: | Good | 14 Valmet DNA Aggregate S N
15 Valmet DNA Aggregate S N
 | s2 StringIns=1;s=TOSI-LCS-0084/aftfc a
S2 StringIns=1;s=TOSI-LCS-0084/aftfm /
 | ftfc 1
aftfm false | Byte
Boolean
 | 2022-03-31T06:03:47.311Z
2022-03-31T06:03:47.311Z | 2022-03-31T06:03:47.357Z G
2022-03-31T06:03:47.357Z G | ood
 | |
| 7 DNA-OPCUA-Server | NS1[String]G8QC13P004XH04 | G8QCT3P004XH | 0 | Untio | 2022-03-31105:
 | 2022-03-31100: | BadNotConnected
RadNetConnected | 16 Valmet DNA Aggregate S N
17 Valmet DNA Aggregate S N
 | s2[String]ns=1;s=TOSI+LCS+0084/ahys a
S2[String]ns=1;s=TOSI+LCS+0084/amc (
 | hys 1
ame 1 | Float
Ulnt16
 | 2022-03-31T06:03:47.311Z
2022-03-31T06:03:47.311Z | 2022-03-31T06:03:47.357Z G | ood
 | |
| 8 DNA-OPCUA-Server | NS1IStringlor-MA-2-MEAS RS AI | MA-2-MEAS RS | falce | Boolean | 2022-03-31105
 | 2022-03-31100 | Good | 19 Valmet DNA Aggregate S N
20 Valmet DNA Aggregate S N
 | s2[StringIns=1;s=TOSI-LCS-0084/cha1 c
 | :ha1 true
cha2 false | Boolean
 | 2022-03-31106:03:47:3112
2022-03-31106:03:47:3112
2022-03-31106:03:47:3112 | 2022-03-31T06:03:47.357Z G | 000
 | |
| 9 DNA-OPCUA-Server | NS1IString[TEST_ANA | TEST ANA | 2.64569 | Float | 2022-03-31T05:
 | 2022-03-31T06: | BadDeviceFailure | 21 Valmet DNA Aggregate S N
22 Valmet DNA Aggregate S N
 | s2 String ns=1;s=TOSI-LCS-0084/cha3
S2 String ns=1;s=TOSI-LCS-0084/cmo
 | ha3 false
mode 6 | Boolean
Byte
 | 2022-03-31T06:03:47.311Z
2022-03-31T06:03:47.311Z | 2022-03-31T06:03:47.358Z G
2022-03-31T06:03:47.358Z G | ood
 | |
| 10 DNA-OPCUA-Server | NS1 String TEST_ANAEV | TEST ANAEV | 0 | Float | 2088-01-01T00:
 | 2022-03-31T06: | UncertainInitialValue | 23 Valmet DNA Aggregate S N
24 Valmet DNA Aggregate S N
 | s2[StringIns=1;s=TOSI-LCS-0084/coau c
S2[StringIns=1;s=TOSI-LCS-0084/coh c
 | oau false
Joh 100 | Float
 | 2022-03-31T06:03:47.311Z
2022-03-31T06:03:47.311Z | 2022-03-31T06:03:47.358Z G | ood
 | |
| 11 DNA-OPCUA-Server | NS1 String pr-TEST_BIN | TEST_BIN | false | Boolean | 2022-03-31T06:
 | 2022-03-31T06: | Good | 26 Valmet DNA Aggregate S N
27 Valmet DNA Aggregate S N
 | s2 StringIns=1:s=TOSI-LCS-0084/col c
S2 StringIns=1:s=TOSI-LCS-0084/cola
 | ol 0
cola 0 | Float
Ulnt16
 | 2022-03-31T06:03:47.311Z
2022-03-31T06:03:47.311Z | 2022-03-31T06:03:47.358Z G
2022-03-31T06:03:47.358Z G | ood
 | |
| 12 DNA-OPCUA-Server | NS1 String TEST_BIN | TEST_BIN | 0 | UInt16 | 2022-03-31T05:
 | 2022-03-31T06: | Good | 28 Valmet DNA Aggregate S N
29 Valmet DNA Aggregate S N
 | s2 StringIns=1;s=TOSI-LCS-0084/colma c
S2 StringIns=1;s=TOSI-LCS-0084/col (
 | olma 100
olmasta 0 | Float
UInt16
 | 2022-03-31T06:03:47.311Z
2022-03-31T06:03:47.311Z | 2022-03-31T06:03:47.358Z G | ood
 | |
| 13 DNA-OPCUA-Server | NS1 String pr-TEST_BINEV | TEST_BINEV | false | Boolean | 2022-03-31106:
 | 2022-03-31106: | Good | 30 Valmet DNA Aggregate S N
31 Valmet DNA Aggregate S N
22 Valmet DNA Aggregate S.
 | 2[StringIns=1;s=TOSI-LCS-0084/col
 | olmi U
olmista 0 | Unt16
 | 2022-03-31106/03/47.3112
2022-03-31106:03:47.3112
2022-03-31106:03:47.3112 | 2022-03-31106/03/47,3582 G
2022-03-31106/03/47,358Z G
2022-03-31106/03/47,358Z G | ood
 | |
| 14 DNA-OPCUA-Server | NSTIString TEST_BINEV | TEST_BINEV | 0 | Unt lo | 2021-11-15108:
 | 2022-03-31106 | Good | 33 Valmet DNA Aggregate S N
34 Valmet DNA Aggregate S N
 | s2 StringIns=1;s=TOSI-LCS-0084/comi c
S2 StringIns=1;s=TOSI-LCS-0084/com
 | omi 0
2on 41.6936 | Float
 | 2022-03-31T06:03:47.311Z
2022-03-31T06:04:33.325Z | 2022-03-31T06:03:47.358Z G
2022-03-31T06:04:33.464Z G | ood
 | |
| 16 DNA-OPCUA-Server | NS1[String]TEST_FAILS | TEST_FAILS | 0 | Int16 | 2022-03-31103
 | 2022-03-31100 | Good | 35 Valmet DNA Aggregate S N
36 Valmet DNA Aggregate S N
 | s2 String ns=1;s=TOSI-LCS-0084/conb c
S2 String ns=1;s=TOSI-LCS-0084/conch c
 | onb 41.6965
:onch 1 | Float
 | 2022-03-31T06:04:33.325Z
2022-03-31T06:03:47.312Z | 2022-03-31T06:04:33,464Z G
2022-03-31T06:03:47.358Z G | ood
 | |
| 17 DNA-OPCUA-Server | NS1IString[TEST_INT32 | TEST INT32 | õ | Int32 | 2022-03-31T05:
 | 2022-03-31T06: | Good | 37 Valmet DNA Aggregate S N
38 Valmet DNA Aggregate S N
39 Valmet DNA Aggregate S N
 | 2 StringIns=1;s=TOSI-LCS-0084/condir c
32 StringIns=1;s=TOSI-LCS-0084/deu c
 | Jeu false
e -0.775711 | Boolean
 | 2022-03-31106:03:47.3122
2022-03-31106:03:47.3122
2022-03-31106:04:33.3257 | 2022-03-31106/03/47.3582 G
2022-03-31106/03/47.358Z G
2022-03-31106/04/33.4647 G | 000
000
 | |
| 18 DNA-OPCUA-Server | NS1IStringITEST INT8 | TEST INT8 | 0 | SByte | 2022-03-31T05:
 | 2022-03-31T06: | Good | 40 Valmet DNA Aggregate S N
41 Valmet DNA Aggregate S N
 | s2 StringIns=1;s=TOSI-LCS-0084/eau
S2 StringIns=1;s=TOSI-LCS-0084/eb
 | au false
ab 100 | Boolean
Float
 | 2022-03-31T06:03:47.312Z
2022-03-31T06:03:47.312Z | 2022-03-31106:03:47.358Z G
2022-03-31106:03:47.358Z G | ood
 | |
| 19 DNA-OPCUA-Server | NS1 String TEST_INTL | TEST_INTL | 59 | Int32 | 2022-03-31T05:
 | 2022-03-31T06: | Good | 42 Valmet DNA Aggregate S N
43 Valmet DNA Aggregate S N
 | s2 String ns=1;s=TOSI-LCS-0084/eha e
S2 String ns=1;s=TOSI-LCS-0084/el
 | ha 0
1 -100 | UInt16
Float
 | 2022-03-31T06:03:47.312Z
2022-03-31T06:03:47.312Z | 2022-03-31T06:03:47.358Z G
2022-03-31T06:03:47.358Z G | ood
 | |
| 20 DNA-OPCUA-Server | NS1 String TEST_INTLEV | TEST_INTLEV | 0 | Int32 | 2088-01-01T00:
 | 2022-03-31T06: | UncertainInitialValue | 44 Valmet DNA Aggregate S N
45 Valmet DNA Aggregate S N
46 Valmet DNA Aggregate S. N
 | 2StringIns=1;s=TOSI-LCS-0084/ebact f
S2StringIns=1;s=TOSI-LCS-0084/fbact f
S2StringIns=1:s=TOSI-LCS-0084/fbact f
 | la U
bact 2
hmask 140 | Unt16
Byte
Ulat16
 | 2022-03-31106:03:47.312Z
2022-03-31106:03:47.312Z
2022-03-31106:03:47.312Z | 2022-03-31106:03:47.3582 G
2022-03-31106:03:47.3582 G
2022-03-31106:03:47.3582 G | 000
000
 | |
| 21 DNA-OPCUA-Server | NS1 String TEST_INTS | TEST_INTS | 0 | Int16 | 2022-03-31T05:
 | 2022-03-31T06: | Good | 47 Valmet DNA Aggregate S N
48 Valmet DNA Aggregate S N
 | s2 String ns=1;s=TOSI-LCS-0084/fc f
S2 String ns=1;s=TOSI-LCS-0084/fcin f
 | c 0
cin 0 | UInt16
Float
 | 2022-03-31T06:03:47.312Z
2022-03-31T06:03:47.312Z | 2022-03-31T06(03)47,358Z G
2022-03-31T06:03:47,358Z G | ood
 | 1 |
| 22 DNA-OPCUA-Server | NS1 String TEST_INTSEV | TEST_INTSEV | 0 | Int16 | 2088-01-01T00:
 | 2022-03-31T06: | UncertainInitialValue | 49 Valmet DNA Aggregate S N
50 Valmet DNA Aggregate S N
 | s2 String ns=1;s=TOSI-LCS-0084/ffma ft
S2 String ns=1;s=TOSI-LCS-0084/ffmi f
 | fma 1
fmi 0 | Float
 | 2022-03-31T06:03:47.312Z
2022-03-31T06:03:47.312Z | 2022-03-31T06:03:47.358Z G | ood
 | • |
| 23 DINA-OPCUA-Server | NS1[String]TEST_UNS10 | TEST_UNSID | 0 | Untio | 2022-03-31105:
 | 2022-03-31100: | Good | 52 Valmet DNA Aggregate S N
53 Valmet DNA Aggregate S N
 | 52 StringIns=1;s=TOSI-LCS-0084/fm f
.52 StringIns=1;s=TOSI-LCS-0084/fm f
 | m 0 | Unt16
Unt16
 | 2022-03-31106:03:47.3132
2022-03-31106:03:47.3132
2022-03-31106:03:47.3132 | 2022-03-31106:03:47.358Z G | ood
ood
 | |
| 25 DNA-OPCUA-Server | NS1IString[TEST_UNS8 | TEST_UNSS2 | 0 | Bute | 2022-03-31105:
 | 2022-03-31100 | Good | 54 Valmet DNA Aggregate S N
55 Valmet DNA Aggregate S N
 | s2 String ns=1;s=TOSI-LCS-0084/isp k
S2 String ns=1;s=TOSI-LCS-0084/iu k
 | up 1
u true | Int16
Boolean
 | 2022-03-31T06:03:47.313Z
2022-03-31T06:03:47.313Z | 2022-03-31T06:03:47.358Z G
2022-03-31T06:03:47.358Z G | ood
 | |
| 26 DNA-OPCUA-Server | NS1IStringlpr-TOSI-ESA-0519 | TOSI-ESA-0519 | false | Boolean | 2022-03-31T06:
 | 2022-03-31T06: | Good | 56 Valmet DNA Aggregate S N
57 Valmet DNA Aggregate S N
 | s2[String]ns=1;s=TOSI-LCS-0084/kff k
S2[String]ns=1;s=TOSI-LCS-0084/kp k
 | ff 0
(p 2 | Float
 | 2022-03-31T06:03:47.313Z
2022-03-31T06:03:47.313Z | 2022-03-31T06:03:47.358Z G | ood
 | |
| 27 DNA-OPCUA-Server | NS1 String TOSI-FSA-0519 | TOSI-FSA-0519 | 0 | UInt16 | 2022-03-31T06:
 | 2022-03-31T06: | Good | 59 Valmet DNA Aggregate S N
60 Valmet DNA Aggregate S N
 | 52 StringIns=1;s=TOSI-LCS-0084/mac
52 StringIns=1;s=TOSI-LCS-0084/mau
 | nac 1
may true | Ulnt16
Boolean
 | 2022-03-31106:03:47.3132
2022-03-31106:03:47.3132
2022-03-31106:03:47.3132 | 2022-03-31106:03:47.358Z G | ood
 | LIEDEI |
| 28 DNA-OPCUA-Server | NS1 String pr-TOSI-FSA-0520 | TOSI-FSA-0520 | false | Boolean | 2022-03-31T06:
 | 2022-03-31T06: | Good | 61 Valmet DNA Aggregate S N
62 Valmet DNA Aggregate S N
 | s2 String ns=1;s=TOSI-LCS-0084/me r
S2 String ns=1;s=TOSI-LCS-0084/meh r
 | ne 50.7757
meh 90 | Float
Float
 | 2022-03-31T06:04:33.325Z
2022-03-31T06:03:47.314Z | 2022-03-31T06:04:33,464Z G
2022-03-31T06:03:47,358Z G | ood
 | HERE |
| 29 DNA-OPCUA-Server | NS1 String TOSI-FSA-0520 | TOSI-FSA-0520 | 0 | UInt16 | 2022-03-31T06:
 | 2022-03-31T06: | Good | 63 Valmet DNA Apprenate S N
 | 2IStringIns=1:s=TOSI-LCS-0084/meba_n
 | osba 0 | Ulat16
 | 2022-03-31T06-03-47 3147 | 2022-03-31T06-03-47 3587 G | ood
 | |
| 30 DNA-OPCUA-Server | NS1 String TOSI-LCS-0084-con | TOSI-I CS-0084/ | 42.1264 | Float | 2022-03-31T06:
 | 2022-03-31T06: | Good |
 |
 | |
 | | |
 | |
| | LIGHT I TO OL LOG COOL | 700110000000 | | | 2022 02 24705
 | | |
 |
 | |
 | | |
 | |
| 31 DNA-OPCUA-Server | NS1 String TOSI-LCS-0084-ma | TOSI-LCS-0084/ | true | Boolean | 2022-03-31T06:
 | 2022-03-31T06: | Good | Data Access View
 |
 | |
 | | |
 | |
| 31 DNA-OPCUA-Server
32 DNA-OPCUA-Server
33 DNA-OPCUA-Server | NS1 String TOSI-LCS-0084-ma
NS1 String TOSI-LCS-0084-me
NS1 String TOSI-LCS-0084-wdd | TOSI-LCS-0084/
TOSI-LCS-0084/
TOSI-LCS-0084/ | true
53.3726 | Boolean
Float | 2022-03-31T06:
2022-03-31T06:
2022-03-31T02:
 | 2022-03-31T06:
2022-03-31T06:
2022-03-31T06: | Good
Good | Data Access View # Server
 | Node Id
 | Display Na | me Value
 | Datatype | Source Timestamp | Server Timestamp
 | Statuscode |
| 31 DNA-OPCUA-Server
32 DNA-OPCUA-Server
33 DNA-OPCUA-Server
34 DNA-OPCUA-Server | NS1 String TOSI-LCS-0084-ma
NS1 String TOSI-LCS-0084-me
NS1 String TOSI-LCS-0084-wdd
NS1 String TOSI-LCS-0084/actconb | TOSI-LCS-0084/
TOSI-LCS-0084/
TOSI-LCS-0084/
actcoph | true
53.3726
0 | Boolean
Float
UInt32
UInt16 | 2022-03-31T06:
2022-03-31T06:
2022-03-31T02:
2022-03-31T05:
 | 2022-03-31T06:
2022-03-31T06:
2022-03-31T06:
2022-03-31T06: | Good
Good
Good
BadNoData | Data Access View # Server 1 Valmet DNA Aggregate
 | Node Id
 | Display Na
TEST ANA | me Value
2.64569
 | Datatype | Source Timestamp
2022-03-31T06:09:44.586Z | Server Timestamp
2022-03-31T06:30:49.978Z
 | Statuscode
BadDeviceFailure |
| 31 DNA-OPCUA-Server
32 DNA-OPCUA-Server
33 DNA-OPCUA-Server
34 DNA-OPCUA-Server
35 DNA-OPCUA-Server | NS1 String TOSI-LCS-0084-ma
NS1 String TOSI-LCS-0084-me
NS1 String TOSI-LCS-0084-wdd
NS1 String TOSI-LCS-0084/actconb
NS1 String TOSI-LCS-0084/actfc | TOSI-LCS-0084/
TOSI-LCS-0084/
TOSI-LCS-0084/
actconb
aftfc | true
53.3726
0
32
1 | Boolean
Float
Ulnt32
Ulnt16
Byte | 2022-03-31T06
2022-03-31T06
2022-03-31T02
2022-03-31T05
2022-03-31T05
 | 2022-03-31T06:
2022-03-31T06:
2022-03-31T06:
2022-03-31T06:
2022-03-31T06: | Good
Good
BadNoData
Good | Data Access View # Server 1 Valmet DNA Aggregate 2 Valmet DNA Aggregate
 | Node ld
S NS2 String ns=1;s=TEST_ANA
S NS2 String ns=1;s=TEST_ANA
 | Display Na
TEST_ANA
EV TEST_ANAEV | me Value
2.64569
0
 | Datatype
Float
Float | Source Timestamp
2022-03-31T06:09:44.586Z
2088-01-01T00:00:00.000Z | Server Timestamp
2022-03-31T06:30:49.978Z
2022-03-31T06:30:49.978Z
 | Statuscode
BadDeviceFailure
UncertainInitialValue |
| 31 DNA-OPCUA-Server
32 DNA-OPCUA-Server
33 DNA-OPCUA-Server
34 DNA-OPCUA-Server
35 DNA-OPCUA-Server
36 DNA-OPCUA-Server | NS1 String TOSI-LCS-0084-ma
NS1 String TOSI-LCS-0084-me
NS1 String TOSI-LCS-0084-wdd
NS1 String TOSI-LCS-0084/actconb
NS1 String TOSI-LCS-0084/aftfc
NS1 String TOSI-LCS-0084/aftfrm | TOSI-LCS-0084/
TOSI-LCS-0084/
TOSI-LCS-0084/
actconb
aftfrc
aftfm | true
53.3726
0
32
1
false | Boolean
Float
UInt32
UInt16
Byte
Boolean | 2022-03-31T06:
2022-03-31T06:
2022-03-31T02:
2022-03-31T05:
2022-03-31T05:
2022-03-31T05:
 | 2022-03-31T06:
2022-03-31T06:
2022-03-31T06:
2022-03-31T06:
2022-03-31T06:
2022-03-31T06: | Good
Good
BadNoData
Good
Good | Data Access View # Server 1 Valmet DNA Aggregate 2 Valmet DNA Aggregate 3 Valmet DNA Aggregate
 | Node Id
S NS2 StringIns=1;s=TEST_ANA
S NS2 StringIns=1;s=TEST_ANA
S NS2 StringIns=1;s=TEST_INT1
NS2 StringIns=1;s=TEST_INT1
 | Display Na
TEST_ANA
EV TEST_ANAEV
6 TEST_INT16 | me Value
2.64569
0
0
 | Datatype
Float
Float
Int16 | Source Timestamp
2022-03-31T06:09:44,586Z
2088-01-01T00:00:00.000Z
2022-03-31T06:09:44.587Z | Server Timestamp
2022-03-31T06:30-49.978Z
2022-03-31T06:30-49.978Z
2022-03-31T06:30-49.978Z
2022-03-31T06:30-49.978Z
 | Statuscode
BadDeviceFailure
UncertainInitialValue
Good |
| 31 DNA-OPCUA-Server 32 DNA-OPCUA-Server 33 DNA-OPCUA-Server 34 DNA-OPCUA-Server 35 DNA-OPCUA-Server 36 DNA-OPCUA-Server 37 DNA-OPCUA-Server | N51 String TOS -LCS-0084-ma
N51 String TOS -LCS-0084-me
N51 String TOS -LCS-0084/actconb
N51 String TOS -LCS-0084/aftfc
N51 String TOS -LCS-0084/aftfm
N51 String TOS -LCS-0084/aftfm
N51 String TOS -LCS-0084/aftfm | TOSI-LCS-0084/
TOSI-LCS-0084/
TOSI-LCS-0084/
actconb
aftfc
aftfm
ahys | true
53.3726
0
32
1
false
1 | Boolean
Float
Ulnt32
Ulnt16
Byte
Boolean
Float | 2022-03-31T06:
2022-03-31T06:
2022-03-31T05:
2022-03-31T05:
2022-03-31T05:
2022-03-31T05:
2022-03-31T05:
 | 2022-03-31T06:
2022-03-31T06:
2022-03-31T06:
2022-03-31T06:
2022-03-31T06:
2022-03-31T06: | Good
Good
BadNoData
Good
Good
Good | Data Access View # Server 1 Valmet DNA Aggregate 2 Valmet DNA Aggregate 3 Valmet DNA Aggregate 4 Valmet DNA Aggregate 5 Valmet DNA Aggregate 5 Valmet DNA Aggregate
 | Node Id
S NS2[String]ns=1;s=TEST_ANA
S NS2[String]ns=1;s=TEST_ANA
S NS2[String]ns=1;s=TEST_INT1
S NS2[String]ns=1;s=TEST_INT3
S NS2[String]ns=1;s=TEST_INT3
 | Display Na
TEST_ANA
EV TEST_ANAEV
6 TEST_INT16
2 TEST_INT32
TEST_INT3 | me Value
2.64569
7 0
0
0
 | Datatype
Float
Int16
Int32
SByte | Source Timestamp
2022-03-31T06:09:44,586Z
2088-01-01T00:00:00.000Z
2022-03-31T06:09:44,587Z
2022-03-31T06:09:44,587Z
2022-03-31T06:09:44,587Z | Server Timestamp
2022-03-31T06:30-49.978Z
2022-03-31T06:30-49.978Z
2022-03-31T06:30-49.978Z
2022-03-31T06:30-49.978Z
2022-03-31T06:30-49.978Z
 | Statuscode
BadDeviceFailure
UncertainInitibalValue
Good
Good
Good |
| 31 DNA-OPCUA-Server 32 DNA-OPCUA-Server 33 DNA-OPCUA-Server 34 DNA-OPCUA-Server 35 DNA-OPCUA-Server 36 DNA-OPCUA-Server 37 DNA-OPCUA-Server 37 DNA-OPCUA-Server 38 DNA-OPCUA-Server 39 DNA-OPCUA-Server | N511StringTOSI-LCS-0084-ma
N511StringTOSI-LCS-0084-me
N511StringTOSI-LCS-0084-wdd
N511StringTOSI-LCS-0084/attro
N511StringTOSI-LCS-0084/aftr
N511StringTOSI-LCS-0084/aftr
N511StringTOSI-LCS-0084/amc | TOSI-LCS-0084/
TOSI-LCS-0084/
TOSI-LCS-0084/
actconb
affc
aftfm
ahys
amc | true
53.3726
0
32
1
false
1
1 | Boolean
Float
Ulnt32
Ulnt16
Byte
Boolean
Float
Ulnt16 | 2022-03-31T06:
2022-03-31T06:
2022-03-31T02:
2022-03-31T05:
2022-03-31T05:
2022-03-31T05:
2022-03-31T05:
2022-03-31T05:
 | 2022-03-31T06:
2022-03-31T06:
2022-03-31T06:
2022-03-31T06:
2022-03-31T06:
2022-03-31T06:
2022-03-31T06:
2022-03-31T06: | Good
Good
BadNoData
Good
Good
Good
Good | Data Access View # Server 1 Valmet DNA Aqgregate 2 Valmet DNA Aqgregate 3 Valmet DNA Aqgregate 4 Valmet DNA Aqgregate 5 Valmet DNA Aqgregate 6 Valmet DNA Aqgregate
 | Node Id
S NS2 String ns=1;s=TEST_ANA
S NS2 String ns=1;s=TEST_INT
S NS2 String ns=1;s=TEST_INT
S NS2 String ns=1;s=TEST_INT
S NS2 String ns=1;s=TEST_UNT
S NS2 String ns=1;s=TEST_UNT
 | Display Na
TEST_ANA
EV TEST_ANAE
6 TEST_INT16
2 TEST_INT3
16 TEST_UNS16 | me Value
2.64569
0
0
0
0
0
0
 | Datatype
Float
Float
Int16
Int32
SByte
Uint16 | Source Timestamp
2022-03-31T06:09-44,586Z
2028-01-01T00:00:00.0002
2022-03-31T06:09-44,587Z
2022-03-31T06:09-44,587Z
2022-03-31T06:09-44,686Z | Server Timestamp
2022-03-31T06:30.49.978Z
2022-03-31T06:30.49.978Z
2022-03-31T06:30.49.978Z
2022-03-31T06:30.49.978Z
2022-03-31T06:30.49.978Z
2022-03-31T06:30.49.978Z
 | Statuscode
BadDeviceFailure
UncertainintialWalue
Good
Good
Good |
| 31 DNA-OPCUA-Server 32 DNA-OPCUA-Server 33 DNA-OPCUA-Server 34 DNA-OPCUA-Server 35 DNA-OPCUA-Server 36 DNA-OPCUA-Server 36 DNA-OPCUA-Server 37 DNA-OPCUA-Server 38 DNA-OPCUA-Server 39 DNA-OPCUA-Server 39 DNA-OPCUA-Server 39 DNA-OPCUA-Server 39 DNA-OPCUA-Server | NS1[StringTOSI-LCS-0084-ma
NS1[StringTOSI-LCS-0084-me
NS1[StringTOSI-LCS-0084-wdd
NS1[StringTOSI-LCS-0084/actconb
NS1[StringTOSI-LCS-0084/aftfr
NS1[StringTOSI-LCS-0084/aftfr
NS1[StringTOSI-LCS-0084/aftrs
NS1[StringTOSI-LCS-0084/aftrs
NS1[StringTOSI-LCS-0084/aftrs | TOSI-LCS-0084/
TOSI-LCS-0084/
TOSI-LCS-0084/
actconb
aftfc
aftfm
ahys
amc
bias
bias | true
53.3726
0
32
1
false
1
1
0 | Boolean
Float
UInt32
UInt16
Byte
Boolean
Float
UInt16
Float | 2022-03-31T06
2022-03-31T06
2022-03-31T05
2022-03-31T05
2022-03-31T05
2022-03-31T05
2022-03-31T05
2022-03-31T05
2022-03-31T05
2022-03-31T05 | 2022-03-31T06:
2022-03-31T06:
2022-03-31T06:
2022-03-31T06:
2022-03-31T06:
2022-03-31T06:
2022-03-31T06:
2022-03-31T06:
2022-03-31T06: | Good
Good
BadNoData
Good
Good
Good
Good
Good
Good | Data Access View # Server 1 Valmet DNA Aggregate 2 Valmet DNA Aggregate 3 Valmet DNA Aggregate 4 Valmet DNA Aggregate 5 Valmet DNA Aggregate 6 Valmet DNA Aggregate 7 Valmet DNA Aggregate 8 Valmet DNA Aggregate 9 PDMA Aggregate 9 PDMA Aggregate | Node Id
S NS2[String]ns=1;s=TEST_ANA
S NS2[String]ns=1;s=TEST_ANA
S NS2[String]ns=1;s=TEST_INT3
S NS2[String]ns=1;s=TEST_INT3
S NS2[String]ns=1;s=TEST_UNT5
S NS2[String]ns=1;s=TEST_UNT5 | Display Na TEST_ANA EV TEST_ANAE 6 TEST_INT6 2 TEST_INT32 16 TEST_UNT6 15 TEST_UNT6 16 TEST_UNT6 16 TEST_UNT6 16 TEST_UNT62 2 TEST_UNT62 | Ime Value
2.64569
/ 0
0
0
0
0
0
0 | Datatype
Float
Int16
Int32
SByte
UInt16
UInt16
UInt22
Byte | Source Timestamp
2022-03-31T06:09-44,5862
2088-01-01700.00:00.0002
2022-03-31T06:09-44,5872
2022-03-31T06:09-44,5872
2022-03-31T06:09-44,5872
2022-03-31T06:09-44,5872
2022-03-31T06:09-44,5872 | Server Timestamp
2022-03-31706:30:49.9782
2022-03-31706:30:49.9782
2022-03-31706:30:49.9782
2022-03-31706:30:49.9782
2022-03-31706:30:49.9782
2022-03-31706:30:49.9782
2022-03-31706:30:49.9782
2022-03-31706:30:49.9782 | Statuscode BadDeviceFailure UncertainitialValue Good Good Good Good Good Good Good Goo |
| 31 DNA-OPCUA-Server 2 DNA-OPCUA-Server 33 DNA-OPCUA-Server 34 DNA-OPCUA-Server 35 DNA-OPCUA-Server 36 DNA-OPCUA-Server 37 DNA-OPCUA-Server 38 DNA-OPCUA-Server 39 DNA-OPCUA-Server 39 DNA-OPCUA-Server 30 DNA-OPCUA-Server 40 DNA-OPCUA-Server 41 DNA-OPCUA-Server 42 DNA-OPCUA-Server 43 DNA-OPCUA-Server | NS15tringTOSI-LCS-0084-ma
NS15tringTOSI-LCS-0084-me
NS15tringTOSI-LCS-0084-wd
NS15tringTOSI-LCS-0084/actconb
NS15tringTOSI-LCS-0084/aftrc
NS15tringTOSI-LCS-0084/aftrc
NS15tringTOSI-LCS-0084/ahvs
NS15tringTOSI-LCS-0084/ahvs
NS15tringTOSI-LCS-0084/ahs
NS15tringTOSI-LCS-0084/abs
NS15tringTOSI-LCS-0084/abs | TOSI-LCS-0084/
TOSI-LCS-0084/
TOSI-LCS-0084/
actconb
aftfc
aftfm
ahys
amc
bias
cha1
cha2 | true
53.3726
0
32
1
false
1
1
0
true
false | Boolean
Float
Ulnt32
Ulnt16
Byte
Boolean
Float
Ulnt16
Float
Boolean
Boolean | 2022-03-31T06
2022-03-31T06
2022-03-31T05
2022-03-31T05
2022-03-31T05
2022-03-31T05
2022-03-31T05
2022-03-31T05
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2022-03-31T05
2022-03-31T05
 | 2022-03-31T06
2022-03-31T06
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2022-03-31T06
2022-03-31T06
2022-03-31T06
2022-03-31T06
2022-03-31T06
2022-03-31T06
2022-03-31T06 | Good Good Good BaclNoData Good Good | Data Access View # Server 1 Valmet DNA Aggregate 2 Valmet DNA Aggregate 3 Valmet DNA Aggregate 4 Wimet DNA Aggregate 5 Valmet DNA Aggregate 6 Valmet DNA Aggregate 7 Valmet DNA Aggregate 8 Valmet DNA Aggregate 9 Valmet DNA Aggregate
 | Node Id
Node Id
Nasistringins=1;s=TEST_ANA
Nasistringins=1;s=TEST_ANA
Nasistringins=1;s=TEST_ANA
Nasistringins=1;s=TEST_ANA
Nasistringins=1;s=TEST_INTS
Nasistringins=1;s=TEST_UNS
Nasistringins=1;s=TEST_UNS
Nasistringins=1;s=TEST_UNS
Nasistringins=1;s=TEST_UNS
Nasistringins=1;s=TEST_UNS
Nasistringins=1;s=TEST_UNS
Nasistringins=1;s=TEST_UNS
Nasistringins=1;s=TEST_UNS
Nasistringins=1;s=TEST_UNS
Nasistringins=1;s=TEST_UNS
Nasistringins=1;s=TEST_UNS
Nasistringins=1;s=TEST_UNS
Nasistringins=1;s=TEST_UNS
Nasistringins=1;s=TEST_UNS
Nasistringins=1;s=TEST_UNS
Nasistringins=1;s=TEST_UNS
Nasistringins=1;s=TEST_UNS
Nasistringins=1;s=TEST_UNS
Nasistringins=1;s=TEST_UNS
Nasistringins=1;s=TEST_UNS
Nasistringins=1;s=TEST_UNS
Nasistringins=1;s=TEST_UNS
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Nasistringins=1;s=TEST_UNS
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Nasistringins=1;s=TEST_UNS
Nasistringins=1;s=TEST_UNS
Nasistringins=1;s=TEST_UNS
Nasistringins=1;s=TEST_UNS
Nasistringins=1;s=TEST_UNS
Nasistringins=1;s=TEST_UNS
Nasistringi
 | Display Na
TEST ANAA
EV TEST ANAE
6 TEST INITI6
2 TEST_INIT32
TEST_UNS16
32 TEST_UNS18
33 TEST_UNS8
3084-con TOSI-LCS-00 | Ime Value
2.64569
/ 0
0
0
0
0
0
0
0
0
0
34/ 44.3315
 | Datatype
Float
Float
Int16
Int32
SByte
UInt16
UInt32
Byte
Float | Source Timestamp
2022-03-31T06:09-44.5862
2088-01-01100:0000.0002
2022-03-31T06:09-44.5872
2022-03-31T06:09-44.5872
2022-03-31T06:09-44.6872
2022-03-31T06:09-44.6872
2022-03-31T06:09-44.6872 | Server Timestamp
2022-03-31 T06:30-49.9782
2022-03-31 T06:30-49.9782
2022-03-31 T06:30-49.9782
2022-03-31 T06:30-49.9782
2022-03-31 T06:30-49.9782
2022-03-31 T06:30-49.9782
2022-03-31 T06:30-49.9782
2022-03-31 T06:30-49.9782
 | Statuscode BadDericeFailure UncertainInitia/Value Good Good Good Good Good Good Good |
| 31 DNA-OPCUA-Server 2 DNA-OPCUA-Server 33 DNA-OPCUA-Server 34 DNA-OPCUA-Server 35 DNA-OPCUA-Server 36 DNA-OPCUA-Server 37 DNA-OPCUA-Server 38 DNA-OPCUA-Server 39 DNA-OPCUA-Server 30 DNA-OPCUA-Server | NS15tringTOSI-LCS-0084-ma
NS15tringTOSI-LCS-0084-me
NS15tringTOSI-LCS-0084-wdd
NS15tringTOSI-LCS-0084/actconb
NS15tringTOSI-LCS-0084/actconb
NS15tringTOSI-LCS-0084/aftfr
NS15tringTOSI-LCS-0084/aftfr
NS15tringTOSI-LCS-0084/aftfr
NS15tringTOSI-LCS-0084/actcanb
NS15tringTOSI-LCS-0084/cha1
NS15tringTOSI-LCS-0084/cha1
NS15tringTOSI-LCS-0084/cha1
NS15tringTOSI-LCS-0084/cha1 | TOSI-LCS-0084/
TOSI-LCS-0084/
TOSI-LCS-0084/
actconb
aftfc
aftfm
ahys
amc
bias
cha1
cha2
cha3 | true
53.3726
0
32
1
false
1
1
0
true
false
false
false | Boolean
Float
Ulnt32
Ulnt16
Byte
Boolean
Float
Ulnt16
Float
Boolean
Boolean
Boolean | 2022-03-31T06:
2022-03-31T06:
2022-03-31T05:
2022-03-31T05:
2022-03-31T05:
2022-03-31T05:
2022-03-31T05:
2022-03-31T05:
2022-03-31T05:
2022-03-31T05:
2022-03-31T05:
 | 2022-03-31T06:
2022-03-31T06:
2022-03-31T06:
2022-03-31T06:
2022-03-31T06:
2022-03-31T06:
2022-03-31T06:
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31 DNA-OPCUA-Server 2 DNA-OPCUA-Server 33 DNA-OPCUA-Server 4 DNA-OPCUA-Server 55 DNA-OPCUA-Server 70 DNA-OPCUA-Server 8 DNA-OPCUA-Server 90 DNA-OPCUA-Server 90 DNA-OPCUA-Server 90 DNA-OPCUA-Server 90 DNA-OPCUA-Server 41 DNA-OPCUA-Server 42 DNA-OPCUA-Server 43 DNA-OPCUA-Server 44 DNA-OPCUA-Server	NS1[StringTOS]-LCS-0084-ma NS1[StringTOS]-LCS-0084-me NS1[StringTOS]-LCS-0084-wdd NS1[StringTOS]-LCS-0084/actconb NS1[StringTOS]-LCS-0084/aftfr NS1[StringTOS]-LCS-0084/aftfr NS1[StringTOS]-LCS-0084/aftfr NS1[StringTOS]-LCS-0084/ans NS1[StringTOS]-LCS-0084/cha1 NS1[StringTOS]-LCS-0084/cha2 NS1[StringTOS]-LCS-0084/cha2 NS1[StringTOS]-LCS-0084/cha2 NS1[StringTOS]-LCS-0084/cha2 NS1[StringTOS]-LCS-0084/cha2	TOSI-LCS-0084/ TOSI-LCS-0084/ TOSI-LCS-0084/ actconb aftfc aftfrn ahys amc bias cha1 cha2 cha2 cha3 cmode coau	true 53.3726 0 32 1 false 1 1 0 true false false 6 false 6 5 false	Boolean Float Ulnt32 Ulnt16 Byte Boolean Float Ulnt16 Float Boolean Boolean Boolean Boolean Byte Boolean	2022-03-31T06 2022-03-31T05 2022-03-31T05 2022-03-31T05 2022-03-31T05 2022-03-31T05 2022-03-31T05 2022-03-31T05 2022-03-31T05 2022-03-31T05 2022-03-31T05 2022-03-31T05 2022-03-31T05	2022-03-31T06: 2022-03-31T06: 2022-03-31T06: 2022-03-31T06: 2022-03-31T06: 2022-03-31T06: 2022-03-31T06: 2022-03-31T06: 2022-03-31T06: 2022-03-31T06: 2022-03-31T06: 2022-03-31T06: 2022-03-31T06:	Good Good Good BadNoData Good Good	Data Access View # Server 1 Valmet DNA Aggregate 2 Valmet DNA Aggregate 4 Valmet DNA Aggregate 4 Valmet DNA Aggregate 6 Valmet DNA Aggregate 7 Valmet DNA Aggregate 8 Valmet DNA Aggregate 9 Valmet DNA Aggregate 10 Valmet DNA Aggregate 10 Valmet DNA Aggregate 12 Valmet DNA Aggregate 13 Valmet DNA Aggregate	Node Id S. NS2IStringIns= 1;s=TEST_AMA S. NS2IStringIns= 1;s=TEST_INT S. NS2IStringIns= 1;s=TEST_INTS	Display Na L TEST_ANA LEV TEST_ANA 6 TEST_INITS 16 TEST_UNISS 16 TEST_UNISS 2 TEST_UNISS 3 TEST_UNISS 064-ron TOSI-LCS-00 0084-ma TOSI-LCS-00 0084-ma TOSI-LCS-00 0084-wadd TOSI-LCS-00 0084-wadd TOSI-LCS-00 0084-wadd TOSI-LCS-00 0084-wadd TOSI-LCS-00 0084-wadd TOSI-LCS-00 0084-wadd TOSI-LCS-00	mme Value 2.64569 0 0 0 0 4/ 44.3315 34/ 52.2416 34/ 32	Datatype Float Float Int16 Byte Byte UInt22 UInt23 Byte Float Boolean Float UInt32 UInt32 UInt32	Source Timestamp 2022-03-31706:0944.5862 2088-01-01700:0004.00002 2022-03-31706:0944.5872 2022-03-31706:0944.5872 2022-03-31706:0944.6872 2022-03-31706:0944.6872 2022-03-31706:0944.6872 2022-03-31706:0944.6872 2022-03-31706:0944.6872 2022-03-31706:0944.6872 2022-03-31706:0944.6872	Server Timestamp 2022-03-31T06:30.49.9782 2022-03-31T06:30.49.978 2022-03-31T06:30.49.978 2022-03-31T06:30.49.978 2022-03-31T06:30.49.978 2022-03-31T06:30.49.978 2022 203 203 203 203 204 204 204 204 204 204 204 204 204 204	Statuscode Bad/DeviceFailure Uncetraininitia/Value Good Good Good Good Good Good Good Goo
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31 DNA-OPCUA-Server 32 DNA-OPCUA-Server 33 DNA-OPCUA-Server 34 DNA-OPCUA-Server 35 DNA-OPCUA-Server 36 DNA-OPCUA-Server 37 DNA-OPCUA-Server 38 DNA-OPCUA-Server 39 DNA-OPCUA-Server 40 DNA-OPCUA-Server 41 DNA-OPCUA-Server 42 DNA-OPCUA-Server 43 DNA-OPCUA-Server 44 DNA-OPCUA-Server 45 DNA-OPCUA-Server 46 DNA-OPCUA-Server 47 DNA-OPCUA-Server 48 DNA-OPCUA-Server 49 DNA-OPCUA-Server 49 DNA-OPCUA-Server 50 DNA-OPCUA-Server	NS15tring1OS1-LCS-0084-ma NS15tring1OS1-LCS-0084-me NS15tring1OS1-LCS-0084-me NS15tring1OS1-LCS-0084/attc NS15tring1OS1-LCS-0084/attc NS15tring1OS1-LCS-0084/attf NS15tring1OS1-LCS-0084/attf NS15tring1OS1-LCS-0084/cha1 NS15tring1OS1-LCS-0084/cha2 NS15tring1OS1-LCS-0084/cha2 NS15tring1OS1-LCS-0084/cha2 NS15tring1OS1-LCS-0084/cha2 NS15tring1OS1-LCS-0084/cha2 NS15tring1OS1-LCS-0084/cha2 NS15tring1OS1-LCS-0084/cha3 NS15tring1OS1-LCS-0084/cha3 NS15tring1OS1-LCS-0084/cha3 NS15tring1OS1-LCS-0084/cha3 NS15tring1OS1-LCS-0084/cha3 NS15tring1OS1-LCS-0084/colma NS15tring1OS1-LCS-0084/colma NS15tring1OS1-LCS-0084/colma NS15tring1OS1-LCS-0084/colma NS15tring1OS1-LCS-0084/colma NS15tring1OS1-LCS-0084/colma NS15tring1OS1-LCS-0084/colma NS15tring1OS1-LCS-0084/colma NS15tring1OS1-LCS-0084/colma NS15tring1OS1-LCS-0084/colma	TOSI-CS-0084/ TOSI-CS-0084/ actconb aftrc aftrm ahys amc bias cha1 cha2 cha3 cmode cola colmasta colmasta colmasta colmista comi conb conb conb conb conb conb conb conb	true 53,3726 0,322 1 1 false 1 1 1 0 0 true false 1 false 1 6 6 false 1 00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Boolean Float Uint12 Uint12 Boolean Float Float Float Boolean Boolean Boolean Boolean Boolean Boolean Boolean Hoat Uint16 Float Uint16 Float Uint16 Float Float Float Float Float Float Float Float Sbyte Boolean Boolean Hoat Float	2022-03-31T05 2022-03-31T02 2022-03-31T05	2022-03-31706 2022-03-31706	Good Good Good Good Good Good Good Good	Data Access View # Server Valmet DNA Aggregate DNA-OPCUA-Server DNA-OPCUA-Server <t< td=""><td>Node Id . N23/Shing(hz=1)::::TEST_ANA . N23/Shing(hz=1):::TEST_ANA . N31/Shing(TEST_ANA . N31/Shing(TEST_ANA . N31/Shing(HZST_ANA . N31/Shing(HZST_ANA</td><td>Display Nu Display Nu TEST_ANA LEV TEST_ANA LEV TEST_ANA LEV TEST_ANA LEV TEST_ANA LEV TEST_INT8 16 TEST_INT8 15.1 TEST_UNS15 0084-roat TOST-LCS-00 0084-roat TOST-LCS-00 0084-roat TOST-LCS-00 0084-roat TEST_ANAE TEST_INT32 TEST_INT32 TEST_INT32 TEST_INT32</td><td>Value 2,64569 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 2,64569 0 0 0 <</td><td>Datatype Float Float Float Skyte Unit12 Unit12 Boolean Float Boolean Float Boolean Float Unit12 Unit15 Float Float Byte Float Float Unit16 Float Float Byte Float Float</td><td>Source Timestamp 2022-03-31T06:0944.5862 2088-01-01T0060944.5872 2022-03-31T06:0944.5872 2022-03-31T06:0944.5872 2022-03-31T06:0944.5872 2022-03-31T06:0944.6872 2022-03-31T06:0944.6872 2022-03-31T06:394.5612 2022-03-31T06:0944.6872</td><td>Server Timestamp 2022-03-31 TO6:30-49 9782 2022-03-31 TO6:32 20-48 9782 2022-03-31 TO6:32</td><td>Statuscode BadDeviceFailure UncetraininitialValue Good Good Good Good Good Good Good Goo</td></t<>	Node Id . N23/Shing(hz=1)::::TEST_ANA . N23/Shing(hz=1):::TEST_ANA . N31/Shing(TEST_ANA . N31/Shing(TEST_ANA . N31/Shing(HZST_ANA	Display Nu Display Nu TEST_ANA LEV TEST_ANA LEV TEST_ANA LEV TEST_ANA LEV TEST_ANA LEV TEST_INT8 16 TEST_INT8 15.1 TEST_UNS15 0084-roat TOST-LCS-00 0084-roat TOST-LCS-00 0084-roat TOST-LCS-00 0084-roat TEST_ANAE TEST_INT32 TEST_INT32	Value 2,64569 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 2,64569 0 0 0 <	Datatype Float Float Float Skyte Unit12 Unit12 Boolean Float Boolean Float Boolean Float Unit12 Unit15 Float Float Byte Float Float Unit16 Float Float Byte Float	Source Timestamp 2022-03-31T06:0944.5862 2088-01-01T0060944.5872 2022-03-31T06:0944.5872 2022-03-31T06:0944.5872 2022-03-31T06:0944.5872 2022-03-31T06:0944.6872 2022-03-31T06:0944.6872 2022-03-31T06:394.5612 2022-03-31T06:0944.6872	Server Timestamp 2022-03-31 TO6:30-49 9782 2022-03-31 TO6:32 20-48 9782 2022-03-31 TO6:32	Statuscode BadDeviceFailure UncetraininitialValue Good Good Good Good Good Good Good Goo
31 DNA-OPCUA-Server 32 DNA-OPCUA-Server 33 DNA-OPCUA-Server 34 DNA-OPCUA-Server 35 DNA-OPCUA-Server 36 DNA-OPCUA-Server 37 DNA-OPCUA-Server 38 DNA-OPCUA-Server 39 DNA-OPCUA-Server 40 DNA-OPCUA-Server 41 DNA-OPCUA-Server 42 DNA-OPCUA-Server 43 DNA-OPCUA-Server 44 DNA-OPCUA-Server 45 DNA-OPCUA-Server 46 DNA-OPCUA-Server 47 DNA-OPCUA-Server 48 DNA-OPCUA-Server 49 DNA-OPCUA-Server 49 DNA-OPCUA-Server 50 DNA-OPCUA-Server	N515tring17051-LC5-0084-ma N515tring17051-LC5-0084-me N515tring17051-LC5-0084-me N515tring17051-LC5-0084/actconb N515tring17051-LC5-0084/atfc N515tring17051-LC5-0084/atfc N515tring17051-LC5-0084/atfc N515tring17051-LC5-0084/atfc N515tring17051-LC5-0084/cha1 N515tring17051-LC5-0084/cha1 N515tring17051-LC5-0084/cha1 N515tring17051-LC5-0084/cha1 N515tring17051-LC5-0084/cha1 N515tring17051-LC5-0084/cha1 N515tring17051-LC5-0084/cha1 N515tring17051-LC5-0084/cha1 N515tring17051-LC5-0084/cha1 N515tring17051-LC5-0084/cha1 N515tring17051-LC5-0084/ca1 N515tring17051-LC5-0084/ca1 N515tring17051-LC5-0084/ca1 N515tring17051-LC5-0084/ca1 N515tring17051-LC5-0084/ca1 N515tring17051-LC5-0084/ca1 N515tring17051-LC5-0084/ca1 N515tring17051-LC5-0084/ca1 N515tring17051-LC5-0084/ca1 N515tring17051-LC5-0084/ca1 N515tring17051-LC5-0084/ca1 N515tring17051-LC5-0084/can1 N	TOSI-CS-0084/ TOSI-LCS-0084/ actonb aftro ahys amc bias cha1 cha2 cha3 cmode col col col col col col col col col col	true 53.3726 0 32 1 false 11 1 0 0 true false 6 6 false 100 0	Boolean Float Ulnt12 Ulnt16 Byte Boolean Float Ulnt16 Float Boolean Boolean Boolean Boolean Boolean Float Ulnt16 Float Ulnt16 Float	2022-03-31T05 2022-03-31T02 2022-03-31T05	$\begin{array}{c} 2022-03+31106\\ 2022-03+3106\\ $	Good Good Good BadNoData Good Good Go	Data Access View # Server 1 Valmet DNA Aggregate 2 Valmet DNA Aggregate 3 Valmet DNA Aggregate 4 Valmet DNA Aggregate 4 Valmet DNA Aggregate 6 Valmet DNA Aggregate 7 Valmet DNA Aggregate 8 Valmet DNA Aggregate 10 Valmet DNA Aggregate 11 Valmet DNA Aggregate 12 Valmet DNA Aggregate 13 Valmet DNA Aggregate 14 Valmet DNA Aggregate 15 Valmet DNA Aggregate 16 Valmet DNA Aggregate 17 Valmet DNA Aggregate 18 Valmet DNA Aggregate 19 DNA OPCLA-Server 20 DNA	Node Id . N32(String)rs= 1;s=T557_AW	Display Nu EST_ANA LEV TEST_ANA LEV TEST_INTE LEV TEST_UNS8 0084-ma TOST-LCS-00 0084-ma TOST-LCS-00 0084-frant aftric 0084-frant TEST_UNS8 N TEST_UNS8 N TEST_UNS3 N TOST-LCS-00 TEST_UNS3 TEST_UNS3 N TOST-LCS-00 LEST_UNS3 TEST_UNS3 N TOST-LCS-00 L <tost-lcs-00< td=""> Conb</tost-lcs-00<>	Value 2,64569 0 <td< td=""><td>Datatype Float Float Float Int16 Int32e Ullnt15 Ullnt16 Byte Boolean Float Byte Junt16 Ulnt16 Byte Boolean Float Float Int16 Int32 SByte Boolean Float Int16 Int32 Bolean Float Int15 Ulnt15 Boolean Float Int16 Int32 Boolean Float Ulnt15 Boolean Float Ulnt32 Boolean Float Boolean Float Boolean Float Boolean Boolean Boolean</td><td>Source Timestamp 2022-03-31706:09-44.5862 2088-01-01T00:000.0002 2022-03-31706:09-44.5872 2022-03-31706:09-44.5872 2022-03-31706:09-44.5872 2022-03-31706:09-44.6872 2022-0</td><td>Server Timestamp 2022-03-31T06:30-049.972. 2022-03-31T06:30-20.972. 2022-03-31T06:3</td><td>Statuscode BadDeviceFailure UncertaininitiaWalue Good Good</td></td<>	Datatype Float Float Float Int16 Int32e Ullnt15 Ullnt16 Byte Boolean Float Byte Junt16 Ulnt16 Byte Boolean Float Float Int16 Int32 SByte Boolean Float Int16 Int32 Bolean Float Int15 Ulnt15 Boolean Float Int16 Int32 Boolean Float Ulnt15 Boolean Float Ulnt32 Boolean Float Boolean Float Boolean Float Boolean Boolean Boolean	Source Timestamp 2022-03-31706:09-44.5862 2088-01-01T00:000.0002 2022-03-31706:09-44.5872 2022-03-31706:09-44.5872 2022-03-31706:09-44.5872 2022-03-31706:09-44.6872 2022-0	Server Timestamp 2022-03-31T06:30-049.972. 2022-03-31T06:30-20.972. 2022-03-31T06:3	Statuscode BadDeviceFailure UncertaininitiaWalue Good Good
31 DNA-OPCUA-Server 32 DNA-OPCUA-Server 33 DNA-OPCUA-Server 34 DNA-OPCUA-Server 35 DNA-OPCUA-Server 36 DNA-OPCUA-Server 37 DNA-OPCUA-Server 38 DNA-OPCUA-Server 39 DNA-OPCUA-Server 40 DNA-OPCUA-Server 41 DNA-OPCUA-Server 42 DNA-OPCUA-Server 43 DNA-OPCUA-Server 44 DNA-OPCUA-Server 45 DNA-OPCUA-Server 46 DNA-OPCUA-Server 47 DNA-OPCUA-Server 48 DNA-OPCUA-Server 49 DNA-OPCUA-Server 49 DNA-OPCUA-Server 50 DNA-OPCUA-Server	N51[StringTOSI-LCS-0084-ma N51[StringTOSI-LCS-0084-me N51[StringTOSI-LCS-0084-me N51[StringTOSI-LCS-0084/attcon N51[StringTOSI-LCS-0084/attcon N51[StringTOSI-LCS-0084/attfm N51[StringTOSI-LCS-0084/attfm N51[StringTOSI-LCS-0084/attfm N51[StringTOSI-LCS-0084/cha] N51[StringTOSI-LCS-0084/cha] N51[StringTOSI-LCS-0084/cha] N51[StringTOSI-LCS-0084/cha] N51[StringTOSI-LCS-0084/cha] N51[StringTOSI-LCS-0084/cha] N51[StringTOSI-LCS-0084/cha] N51[StringTOSI-LCS-0084/cha] N51[StringTOSI-LCS-0084/cha] N51[StringTOSI-LCS-0084/cha] N51[StringTOSI-LCS-0084/cha] N51[StringTOSI-LCS-0084/cha] N51[StringTOSI-LCS-0084/colm N51[StringTOSI-LCS-0084/colm N51[StringTOSI-LCS-0084/colm N51[StringTOSI-LCS-0084/colm N51[StringTOSI-LCS-0084/colm N51[StringTOSI-LCS-0084/colm N51[StringTOSI-LCS-0084/colm N51[StringTOSI-LCS-0084/colm N51[StringTOSI-LCS-0084/comb N51[StringTOSI-LCS-0084/conb	TOSI-CS-0084/ TOSI-CS-0084/ actconb atronb atronb atronb atronb atronb atronb atronb atronb atronb atronb cha2 cha2 cha3 cha2 cha3 cha2 cha3 cha2 cha3 cha2 cha3 cha2 cha3 cha2 cha3 cha2 cha3 cha2 cha3 cha2 cha3 cha2 cha3 cha2 cha3 cha2 cha3 cha2 cha2 cha3 cha2 cha3 cha2 cha2 cha3 cha2 cha2 cha2 cha2 cha2 cha2 cha2 cha2	true 53,3726 0 32 1 false 1 1 0 true false false false false 100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Boolean Float Uint12 Uint16 Byte Boolean Float Uint16 Float Boolean Boolean Boolean Boolean Boolean Boolean Hoat Uint16 Float Uint16 Float Boolean Boolean Boolean Float	2022-03-31T05 2022-03-31T02 2022-03-31T05	2022-03-31706 2022-03-31706	Good Good Good Good Good Good Good Good	Data Access View # Server Valmet DNA Aggregate 2 Valmet DNA Aggregate 3 Valmet DNA Aggregate 4 Valmet DNA Aggregate 5 Valmet DNA Aggregate 6 Valmet DNA Aggregate 7 Valmet DNA Aggregate 8 Valmet DNA Aggregate 9 Valmet DNA Aggregate 10 Valmet DNA Aggregate 10 Valmet DNA Aggregate 11 Valmet DNA Aggregate 12 Valmet DNA Aggregate 13 Valmet DNA Aggregate 14 Valmet DNA Aggregate 15 Valmet DNA Aggregate 16 Valmet DNA Aggregate 17 Valmet DNA Aggregate 18 DNA-OPCUA-Server 19 DNA-OPCUA-Server 10 DNA-OPCUA-Server <td< td=""><td>Node Id . N22String(ns: 1;s:T5T, AVA . N22String(ns: 1;s:T5T, AVA . N22String(ns: 1;s:T5T, AVA . N22String(ns: 1;s:T5T, AVA . N22String(ns: 1;s:T5T, IVA . N22String(ns: 1;s:T0S) . N22String(ns: 1;s:T0S) . N22String(ns: 1;s:T0S) . N22String(ns: 1;s:T0S)</td><td>Display Nu Display Nu A TEST_ANA LEV TEST_ANA LEV TEST_ANA LEV TEST_ANA LEV TEST_ANA LEV TEST_ANA 16 TEST_INT8 18 TEST_UNS8 0084-roan TOSI-LCS-00 0084-roan TOSI-LCS-00 0084-roan TOSI-LCS-00 0084-roan TOSI-LCS-00 0084-roan TOSI-LCS-00 0084-roan TEST_ANA TEST_INT8 TEST_ANA TEST_INT8 TEST_ANAE TEST_UNS3 TEST_UNS3 TEST_UNS3 TEST_UNS3 TEST_UNS3 TOSI-LCS-00 1 TOSI-LCS-00 1<tosi-lcs-00< td=""> TOSI-LCS-00</tosi-lcs-00<></tosi-lcs-00<></tosi-lcs-00<></tosi-lcs-00<></tosi-lcs-00<></tosi-lcs-00<></tosi-lcs-00<></td><td>Value 2.64569 0 <td< td=""><td>Datatype Float Float Float Int16 Int32 SByte Boolean Float Boolean Float Boolean Float Boolean Float Uint32 Uint6 Float Uint16 Float Uint15 Uint15 Uint15 Picet Picet Float Byte Float Boolean Float Boolean Float Boolean Float Boolean Float Uint16 Byte Byte Byte Byte Boolean Float Byte Byte Byte Byte Byte</td><td>Source Timestamp 2022-03-31T06:09-44.5862 2028-09-01T006009-44.5872 2022-03-31T06:09-44.5872</td><td>Server Timestamp 2022-03-31 TO6:30:49 9782 2022-03-31 TO6:32:40 49782 2022-03-31 TO6:32:50 44982 2022-03-31 TO6:32:50 44982 2022-03-31 TO6:32:50 44982 2022-03-31 TO6:32:50 449782 2022-03-31 TO6:32:50 449782</td><td>Statuscode BadDeviceFailure UncettainInitialValue Good Good</td></td<></td></td<>	Node Id . N22String(ns: 1;s:T5T, AVA . N22String(ns: 1;s:T5T, AVA . N22String(ns: 1;s:T5T, AVA . N22String(ns: 1;s:T5T, AVA . N22String(ns: 1;s:T5T, IVA . N22String(ns: 1;s:T0S) . N22String(ns: 1;s:T0S) . N22String(ns: 1;s:T0S) . N22String(ns: 1;s:T0S)	Display Nu Display Nu A TEST_ANA LEV TEST_ANA LEV TEST_ANA LEV TEST_ANA LEV TEST_ANA LEV TEST_ANA 16 TEST_INT8 18 TEST_UNS8 0084-roan TOSI-LCS-00 0084-roan TOSI-LCS-00 0084-roan TOSI-LCS-00 0084-roan TOSI-LCS-00 0084-roan TOSI-LCS-00 0084-roan TEST_ANA TEST_INT8 TEST_ANA TEST_INT8 TEST_ANAE TEST_UNS3 TEST_UNS3 TEST_UNS3 TEST_UNS3 TEST_UNS3 TOSI-LCS-00 1 TOSI-LCS-00 1 <tosi-lcs-00< td=""> TOSI-LCS-00 1<tosi-lcs-00< td=""> TOSI-LCS-00</tosi-lcs-00<></tosi-lcs-00<></tosi-lcs-00<></tosi-lcs-00<></tosi-lcs-00<></tosi-lcs-00<></tosi-lcs-00<>	Value 2.64569 0 <td< td=""><td>Datatype Float Float Float Int16 Int32 SByte Boolean Float Boolean Float Boolean Float Boolean Float Uint32 Uint6 Float Uint16 Float Uint15 Uint15 Uint15 Picet Picet Float Byte Float Boolean Float Boolean Float Boolean Float Boolean Float Uint16 Byte Byte Byte Byte Boolean Float Byte Byte Byte Byte Byte</td><td>Source Timestamp 2022-03-31T06:09-44.5862 2028-09-01T006009-44.5872 2022-03-31T06:09-44.5872</td><td>Server Timestamp 2022-03-31 TO6:30:49 9782 2022-03-31 TO6:32:40 49782 2022-03-31 TO6:32:50 44982 2022-03-31 TO6:32:50 44982 2022-03-31 TO6:32:50 44982 2022-03-31 TO6:32:50 449782 2022-03-31 TO6:32:50 449782</td><td>Statuscode BadDeviceFailure UncettainInitialValue Good Good</td></td<>	Datatype Float Float Float Int16 Int32 SByte Boolean Float Boolean Float Boolean Float Boolean Float Uint32 Uint6 Float Uint16 Float Uint15 Uint15 Uint15 Picet Picet Float Byte Float Boolean Float Boolean Float Boolean Float Boolean Float Uint16 Byte Byte Byte Byte Boolean Float Byte Byte Byte Byte Byte	Source Timestamp 2022-03-31T06:09-44.5862 2028-09-01T006009-44.5872 2022-03-31T06:09-44.5872	Server Timestamp 2022-03-31 TO6:30:49 9782 2022-03-31 TO6:32:40 49782 2022-03-31 TO6:32:50 44982 2022-03-31 TO6:32:50 44982 2022-03-31 TO6:32:50 44982 2022-03-31 TO6:32:50 449782	Statuscode BadDeviceFailure UncettainInitialValue Good Good
31 DNA-OPCUA-Server 32 DNA-OPCUA-Server 33 DNA-OPCUA-Server 34 DNA-OPCUA-Server 35 DNA-OPCUA-Server 36 DNA-OPCUA-Server 37 DNA-OPCUA-Server 38 DNA-OPCUA-Server 39 DNA-OPCUA-Server 40 DNA-OPCUA-Server 41 DNA-OPCUA-Server 42 DNA-OPCUA-Server 43 DNA-OPCUA-Server 44 DNA-OPCUA-Server 45 DNA-OPCUA-Server 46 DNA-OPCUA-Server 47 DNA-OPCUA-Server 48 DNA-OPCUA-Server 49 DNA-OPCUA-Server 49 DNA-OPCUA-Server 50 DNA-OPCUA-Server	N515tring1TOS1-LCS-0084-me N515tring1TOS1-LCS-0084-me N515tring1TOS1-LCS-0084-med N515tring1TOS1-LCS-0084/actconb N515tring1TOS1-LCS-0084/actconb N515tring1TOS1-LCS-0084/atfr N515tring1TOS1-LCS-0084/atfr N515tring1TOS1-LCS-0084/atfr N515tring1TOS1-LCS-0084/cha1 N515tring1TOS1-LCS-0084/cha1 N515tring1TOS1-LCS-0084/cha1 N515tring1TOS1-LCS-0084/cha1 N515tring1TOS1-LCS-0084/cha1 N515tring1TOS1-LCS-0084/cha1 N515tring1TOS1-LCS-0084/cha1 N515tring1TOS1-LCS-0084/cha1 N515tring1TOS1-LCS-0084/cha1 N515tring1TOS1-LCS-0084/cha1 N515tring1TOS1-LCS-0084/cca1 N515tring1TOS1-	TOSI-CS-0084/ TOSI-LCS-0084/ actconb aftro ahys amc cha1 cha1 cha2 cha3 cmode col col col col col col col col col col	true 53,3726 0 32 1 false 1 1 0 true false 6 6 false 100 0	Boolean Float Ulnt12 Ulnt16 Byte Boolean Float Boolean Boolean Boolean Boolean Boolean Float Ulnt16 Float Ulnt16 Float Ulnt16 Float	2022-03-31T05 2022-03-31T02 2022-03-31T05	$\begin{array}{c} 2022-03+31106\\ 2022-$	Good Good Sood Good Good Good Good Good	Data Access View # Server 1 Volmet DNA Aggregate 2 Valmet DNA Aggregate 4 Valmet DNA Aggregate 4 Valmet DNA Aggregate 4 Valmet DNA Aggregate 6 Valmet DNA Aggregate 7 Valmet DNA Aggregate 8 Valmet DNA Aggregate 10 Valmet DNA Aggregate 11 Valmet DNA Aggregate 12 Valmet DNA Aggregate 13 Valmet DNA Aggregate 14 Valmet DNA Aggregate 15 Valmet DNA Aggregate 16 Valmet DNA Aggregate 17 Valmet DNA Aggregate 18 Valmet DNA Aggregate 19 DNA OPCUA-Server 20 DNA	Node Id . N32(String)rs= 1;s=T55T_AVA	Display Nr. Display Nr. A TEST_ANA LEV TEST_INTE LEV TEST_UNSE 0084-ron TOSI-LCS-00 0084-ron TOSI-LCS-00 0084-ron TOSI-LCS-00 0084-ron TOSI-LCS-00 0084-ron TOSI-LCS-00 0084-ron TEST_ANA TEST_INTE TEST_ANA TEST_INTE TEST_INTE TEST_INTE <	Value 2.64569 0 0 0	Datatype Float Float Float Int16 Int32e Wint15 Ulnt32 Byte Float Boolen Fliat Pice Byte Byte Float Float Float Float Float Float Hoat Float Bolean Float Bolean Float Ulnt32 Byte Bolean Float Ulnt32 Byte Bolean Float Ulnt35	Source Timestamp 2022-03-31706:09-44.582 2088-01-01700:0004.0002 2022-03-31706:09-44.5827 2022-03-31706:09-44.5872 2022-03-31706:09-44.6872 2022-0	Server Timestamp 2022-03-31706-30-049.9782 2022-04-31706-30-049.9782 2022-05-31706-30-049.9782 2022-04-31706-30-049.9782 2022-05-31706-30-049.9782 2022-04-31706-30-049.9782 2022-05-31706-30-049.9782 2022-05-31706-30-049.9782 2022-05-31706-30-049.9782 2022-05-31706-30-049.9782 2022-05-31706-30-049.9782 2022-05-31706-30-049.9782 2022-05-31706-30-049.9782 2022-05-31706-30-049.9782 2022-05-31706-30-049.9782 2022-05-31706-30-049.9782 2022-05-31706-30-049.9782 2022-05-31706-30-049.9782 2022-05-31706-32-04.582 2022-05-31706-32-04.582 2022-05-31706-32-04.582 2022-05-31706-32-04.582 2022-05-31706-32-04.582 2022-05-31706-32-04.582 2022-05-31706-32-04.582 2022-05-31706-32-04.582 2022-05-31706-32-04.582 2022-05-31706-32-04.582 2022-05-31706-32-04.582 2022-05-31706-32-04.582 2022-05-31706-32-04.582 2022-05-31706-32-04.582 2022-05-31706-	Statuscode BadDeviceFailure UncetraininitialValue Good Good



Testing: Basic functionality DA

Variables: Value & Statuscode, also SourceTimestamp cloning

 DNA-OPCUA-Server variables: SourceTimestamp NOTE: ServerTimestamp generated always by server

Dat	a Access View							
#	Server	Node Id	Display Name	Value	Datatype	Source Timestamp	Server Timestamp	Statuscode
1	Valmet DNA Aggregate Server	NS2 String ns=1;s=TEST_ANAEV	TEST_ANAEV	21.3	Float	2010-02-02T05:04:03.020Z	2022-03-31T06:52:04.745Z	Good
2	DNA-OPCUA-Server	NS1 String TEST_ANAEV	TEST_ANAEV	21.3	Float	2010-02-02T05:04:03.020Z	2022-03-31T06:52:04.192Z	Good

• Write to aggregate variable => write to sub-server OK

Project	₽×	Data	a Access View						
⊿ 📁 Project		#	Server	Node Id	Display Name	Value	Datatype	Source Timestamp Server Timestamp	Statuscode
⊿ 📁 Servers		1	Valmet DNA Ag	NS2 String ns=1;s=TEST-AM/hh	hh	94	Float	2022-04-04T05: 2022-04-04T05:	Good
🏷 Valmet DNA Aggregate Server		2	DNA-OPCUA-S	NS1 String TEST-AM/hh	hh	94	Float	2022-04-04T05: 2022-04-04T05:	Good
📎 DNA-OPCUA-Server									
⊿ 📁 Documents									
📁 Data Access View									
Address Space	8×								
1: urn:C2017DEMO:DNA-Aggregate-Server	•								
🛅 Root									
🔺 🚞 Objects									
🕨 👶 Server									
Server0 DNA									
Server1 Simulation									
👂 🚞 Types									
▷ 🛅 Views									



Testing: Basic functionality DA Variables: DNA tables

• DNA-OPCUA-Server tables: 1-dim, 2-dim and 3-dim with elem (values), faults and header

Dat	a Access View							
#	Server	Node ld	Display Name	Value	Datatype	Source Timestamp	Server Timestamp	
1	Valmet DNA Aggregate Server	NS2 String ns=1;s=TABLETEST2_ANA444/elem	elem	Double click to displ	Float	2022-03-31T06:09:46.908Z	2022-03-31T06:55:29.513Z	Good
2	Valmet DNA Aggregate Server	NS2 String ns=1;s=TABLETEST2_ANA444/faults	faults	Double click to displ	UInt16	2022-03-31T06:09:47.371Z	2022-03-31T06:55:35.860Z	Good
3	Valmet DNA Aggregate Server	NS2 String ns=1;s=TABLETEST2_ANA444/header/base	base	{1,1,1}	Int32	2022-03-31T06:09:47.409Z	2022-03-31T06:55:40.075Z	Good
4	Valmet DNA Aggregate Server	NS2 String ns=1;s=TABLETEST2_ANA444/header/dataid	dataid	0	Int32	2022-03-31T06:28:42.482Z	2022-03-31T06:55:41.040Z	Good
5	Valmet DNA Aggregate Server	NS2 String ns=1;s=TABLETEST2_ANA444/header/dim	dim	{16,16,16}	Int32	2022-03-31T06:28:42.482Z	2022-03-31T06:55:41.040Z	Good
6	Valmet DNA Aggregate Server	NS2 String ns=1;s=TABLETEST2_ANA444/header/elemtype	elemtype	ana	String	2022-03-31T06:28:42.481Z	2022-03-31T06:55:41.040Z	Good
7	Valmet DNA Aggregate Server	NS2 String ns=1;s=TABLETEST2_ANA444/header/fails	fails	0	UInt16	2022-03-31T06:28:42.481Z	2022-03-31T06:55:41.040Z	Good
8	Valmet DNA Aggregate Server	NS2 String ns=1;s=TABLETEST2_ANA444/header/interval	interval	0	Float	2022-03-31T06:28:42.482Z	2022-03-31T06:55:41.040Z	Good
9	Valmet DNA Aggregate Server	NS2 String ns=1;s=TABLETEST2_ANA444/header/mode	mode	array	String	2022-03-31T06:28:42.481Z	2022-03-31T06:55:41.040Z	Good
10	Valmet DNA Aggregate Server	NS2 String ns=1;s=TABLETEST2_ANA444/header/size	size	{16,16,16}	Int32	2022-03-31T06:28:42.482Z	2022-03-31T06:55:41.040Z	Good
11	Valmet DNA Aggregate Server	NS2 String ns=1;s=TABLETEST2_ANA444/header/time	time	0	UInt16	2088-01-01T00:00:00.000Z	2022-03-31T06:55:41.041Z	Good
12	Valmet DNA Aggregate Server	NS2 String ns=1;s=TABLETEST_CHA7/elem	elem	test1	String	2022-03-31T06:57:32.295Z	2022-03-31T06:57:33.076Z	Good
13	Valmet DNA Aggregate Server	NS2 String ns=1;s=TABLETEST_CHA33/elem	elem	Double click to displ	String	2022-03-31T06:57:49.403Z	2022-03-31T06:57:50.113Z	Good
14	Valmet DNA Aggregate Server	NS2 String ns=1;s=TABLETEST_CHA333/elem	elem	Double click to displ	String	2022-03-31T06:09:44.721Z	2022-03-31T06:56:32.307Z	Good

DNA ana_444 elem with values and faults with fault bits:

Name 4 [0][0][0] [0][0][1]	Value	~	Name	Value	
⊿ [0][0][0] [0][0][1]	Float Matrix[16][16][16]			Illuste Massi (sellsellse)	
⊿ [0][0][0]	Float Matrix[16][16][16]		[0][0][0]	48	
[0][0][0]	LIGHT MACHYLIOIT IOIT IOI		[0][0][1]	48	
[0][0][1]	0		[0][0][2]	48	
	0		[0][0][3]	48	
[0][0][2]	0		[0][0][4]	48	
[0][0][2]	0		[0][0][6]	40	
[0][0][5]	0		[0][0][7]	48	
[0][0][4]	0		[0][0][8]	48	
[0][0][5]	0		[0][0][9]	48	
[0][0][6]	0		[0][0][10]	48	
[0][0][7]	0		[0][0][11]	40	
[0][0][8]	0		[0][0][12]	40	
[0][0][0]	0		[0][0][14]	48	
[0][0][9]	0		[0][0][15]	48	
[0][0][10]	0		[0][1][0]	48	
[0][0][11]	0		[0][1][1]	48	
[0][0][12]	0		[0][1][2]	48	
[0][0][13]	0		[0][1][4]	48	
[0][0][14]	0		[0][1][5]	48	
[0][0][14]	0		[0][1][6]	48	
[0][0][15]	0		[0][1][7]	48	
[0][1][0]	0		[0][1][8]	48	
[0][1][1]	0		[0][1][10]	48	
[0][1][2]	0		[0][1][11]	48	
[0][1][3]	0		[0][1][12]	48	
[0][1][4]	0		[0][1][13]	48	
[0][1][4]	0		[0][1][14]	48	
[U][1][5]		~	[0][2][0]	40 48	
001061			folialisi	40	

DNA cha_33 and cha_333 as OPC UA string tables:

		Edit Value	×	100		Edit Value	
Name	Value					Lant Value	
4	String Matrix[8] [0] Rivi1			Name		Value	
	[1]			4		String Matrix[8][8]	
	[3]				[0][0]	Rivi 1	
	[5]				[0][1]	12345678	
	[6]				[0][2]	12545010	
					[0][2]		
					[0][3]		
					[0][4]		
					[0][5]		
					[0][0]		
					[0][/]		
					[1][0]		
					[1][1]		
					[1][2]		
					[1][3]		
					[1][4]		
					[1][5]		
					[1][6]		
						Write	Cancel
			Write Cancel				



Testing: AnalogDataItem, TwoStateDiscrete, MultiStateDiscrete Definition, EURange, EngineeringUnits, TwoState values and MultiState EnumStrings





Testing: Basic functionality A&C OPC UA Alarms & Conditions

 Prosys UA Simulation server: Events & Alarms same on both servers



Testing: Basic functionality HA OPC UA Historical Access: Trend data

- Prosys UA Simulation server: Historizing true
- Aggregate server will read trend data from the original sub-server
- Clone other parameters with values and initialize them with correct values (like StartOfArchive, Description etc.)





Testing: Aggregator reading HA trend from DNA INFO Server Time span: Up to 2 years, ~70000 values





Testing: Basic functionality A&C OPC UA Alarms & Conditions

 Aggregate server alarm acknowledge; Will acknowledge alarm also on original sub-server



Acknowledge server can add comment;
 Will comment alarm also on original sub-server (adds after user comment "Commented by Valmet





Testing: Basic functionality - Permissions

Case: Using DNA permissions

- Set by aggregate server, not cloned as some servers are not DNA servers/do not use permissions
- DNA default permissions used as with DNA-OPCUA-Server (Anonymous cannot write)

Attributes		₽×
😏 🧹 💺 🔘		0
Attribute	Value	^
⊿ Nodeld	ns=2;s=ns=1;s=25LIC-100/con	
NamespaceIndex	2	
IdentifierType	String	
Identifier	ns=1,s=25LIC-100/con	
NodeClass	Variable	
BrowseName	2, "con"	
DisplayName	"", "con"	
Description	"", "server0 ns=1;s=25LIC-100/con"	
WriteMask	0	
UserWriteMask	0	
⊿ RolePermissions	RolePermissionType Array[5]	
⊿ [0]	RolePermissionType	
Roleld	i=15644 [WellKnownRole_Anonymous]	
Permissions	Browse, ReadRolePermissions, Read	
⊿ [1]	RolePermissionType	
Roleld	i=15656 [WellKnownRole_AuthenticatedUser]	
Permissions	Browse, ReadRolePermissions, Read, ReadHistory	
⊿ [2]	RolePermissionType	
Roleld	i=15680 [WellKnownRole_Operator]	
Permissions	Browse, ReadRolePermissions, Read, Write, ReadHistory	
⊿ [3]	RolePermissionType	
Roleid	i=15716 [WellKnownRole_ConfigureAdmin]	
Permissions	Browse, ReadRolePermissions, WriteAttribute, WriteRolePermissions, WriteHistorizing, Read, Write, ReadHistory, InsertHistory, ModifyHistory, DeleteHist	tory, Re
⊿ [4]	RolePermissionType	
Roleld	i=15704 [WellKnownRole_SecurityAdmin]	
Permissions	Browse, ReadRolePermissions, WriteAttribute, WriteRolePermissions, WriteHistorizing, Read, Write, ReadHistory, InsertHistory, ModifyHistory, DeleteHist	tory, Re
	RolePermissionType Array[1]	
⊿ [0]	RolePermissionType	
Roleid	i=15644 [WellKnownRole_Anonymous]	
Permissions	Browse, ReadRolePermissions, Read	
AccessRestrictions	BadAttributeIdInvalid (0x80350000)	
⊿ Value		
SourceTimestamp	2022-03-31T06:06:52.407Z	
SourcePicoseconds	9400	
ServerTimestamp	2022-03-31T06:06:53.323Z	
ServerPicoseconds	6500	~



Testing: Communication error case - sub-server shutdown

1-2 seconds to update Statuscode, sub-server starts some seconds to reconnect & update values

Unified Automation UaExpert - The OPC Un	ified Arr	chitect	ure Client - Aggregate-server									
File View Server Document Settings	<u>H</u> elp											
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roject	ð×	Data	a Access View Event View Serv	er Diagnostics View	Server Diagnostics	View-1						(
🗸 🇊 Project			Server		Node Id	Display Name	Value	Datatype	Source Timestamp	Server Timestamp	St	tatuscode
✓		1	SimulationServer@H708013	NS3INumerie	11001	Counter	14	Double	18.59.31	18.59.31	Good	
SimulationServer@H708013		2	SimulationServer@H7Q8Q13	NS3 Numerio	1002	Random	0.8263217	Double	18.59.31	18.59.31	Good	
Value at DNIA Cinculation Conver		3	SimulationServer@H7Q8Q13	NS5 String Fl	oatDataltem	FloatDataltem	0	Float	18.46.25	18.56.16	Good	
Valmet DIVA Simulation Server	_	4	SimulationServer@H7Q8Q13	NS3 Numeric	1001	Counter	14	Double	18.59.31	18.59.31	Good	
Valmet DNA Aggregate Server		2	SimulationServer@H/Q8Q13	NS3[Numeric	1002	Random	0.8263217	Double	18.59.31	18.59.31	Good	
Image: Second		7	SimulationServer@H7Q8Q15	NC2IN/umeni	1005	Sawtooth	0.4159324	Double	10.39.31	10.39.31	Good	
Data Access View		0	SimulationServer@H7Q8Q13	MS2INumeric	1004	Sauare	2	Double	19 50 29	19 50 29	Good	
Event View		ğ	SimulationServer@H708013	NS3INumeria	1006	Triangle	0.2666667	Double	18.59.31	18,59,31	Good	
		10	Valmet DNA Simulation Server	NS1IString TE	ST-AM/av	TEST-AM/av	33	Float	18,59,21	18.59.21	BadCommur	nicationEr
Server Diagnostics View		11	Valmet DNA Aggregate Server	NS2 Numeric	0	Counter	13	Double	18.59.30	18.59.30	Good	
📁 Server Diagnostics View-1		12	Valmet DNA Aggregate Server	NS2 Numerio	1	Random	1.935697	Double	18.59.30	18.59.30	Good	
		13	Valmet DNA Aggregate Server	NS2 Numerio	12	Sawtooth	0	Double	18.59.30	18.59.30	Good	
		14	Valmet DNA Aggregate Server	NS2 Numerio	3	Sinusoid	0	Double	18.59.30	18.59.30	Good	
		15	Valmet DNA Aggregate Server	NS2[Numeric	4	Square	2	Double	18.59.28	18.59.28	Good	
		17	Valmet DNA Aggregate Server	NS2[Numeric NS2]Numeric	5	Inangle Bra 2 re Counter	0	Double	18.59.50	18.59.30	Good	
		19	Valmet DNA Aggregate Server	MS2INumeric	7	14L016AC001/me		Noll	19 59 24	19 50 24	BadCommur	aication Fr.
idress Space	∂×	19	Valmet DNA Aggregate Server	NS3INumeria	8	ECB10DS202/av		Null	18.59.24	18.59.24	BadCommur	nicationEr
in the second seco		20	Valmet DNA Aggregate Server	NS3INumeric	9	ECB30DS001/av		Null	18.59.24	18.59.24	BadCommur	nicationEr
No Highlight	•	21	Valmet DNA Aggregate Server	NS3[Numeric	10	ECB30DS002/av		Null	18.59.24	18.59.24	BadCommur	nicationEr
Root	^	22	Valmet DNA Aggregate Server	NS3[Numeric	11	FCV-1103/av		Null	18.59.24	18.59.24	BadCommun	nicationEr
(Diacte		23	Valmet DNA Aggregate Server	NS3 Numeric	12	FI-1203K/av		Null	18.59.24	18.59.24	BadCommur	nicationEr
Objects		24	Valmet DNA Aggregate Server	NS3 Numerio	13	FI-1206K/av		Null	18.59.24	18.59.24	BadCommur	nicationEr
> 🛄 Aliases		25	Valmet DNA Aggregate Server	NS3[Numeric	14	HFD10AC001/av		Null	18.59.24	18.59.24	BadCommur	nicationEr
AllCollectedEvents		20	Valmet DNA Aggregate Server	NS2INumeric	16	DDI-1226/au		Null	10.39.24	19 50 34	BadCommun	nicationEr
H708013.mshome.net		28	Valmet DNA Aggregate Server	NS2INumeric	17	Di-1220/av		Noll	19 59 24	19 50 24	BadCommun	nicationEr
🔪 🧰 ambhilanni		29	Valmet DNA Aggregate Server	NS3INumeria	18	OI-3103/av		Null	18 59 24	18 59 24	BadCommur	nicationEr
		30	Valmet DNA Aggregate Server	NS3INumerio	19	OTI-1271/av		Null	18.59.24	18.59.24	BadCommur	nicationEr
> 🚒 ev:MyLevel		31	Valmet DNA Aggregate Server	NS3 Numeric	20	SIR-1268K/av		Null	18.59.24	18.59.24	BadCommun	nicationEr
> 螨 Server		32	Valmet DNA Aggregate Server	NS3[Numeric	21	SIR-1269/av		Null	18.59.24	18.59.24	BadCommun	nicationEr
Server0lSimulation		33	Valmet DNA Aggregate Server	NS3 Numerio	22	TDI-1215KA/av		Null	18.59.24	18.59.24	BadCommur	nicationEr
> 🦪 Counter		34	Valmet DNA Aggregate Server	NS3 Numeric	23	TDI-1515MN/av		Null	18.59.24	18.59.24	BadCommur	nicationEr
		32	Valmet DNA Aggregate Server	NSSINUMER	124	TEST-AIW/av		Null	18.39.24	18.09.24	BadCommur	nicationEr
> 🥌 Kandom		27	Valmet DNA Aggregate Server	NS2INumeric	25	TI-1200/av		Null	10.39.24	19 50 24	BadCommun	nicationEr
> 💷 Sawtooth		38	Valmet DNA Aggregate Server	NS3INumerio	27	TI-1330/av		Null	18.59.24	18.59.24	BadCommur	nicationEr
> 💷 Sinusoid		39	Valmet DNA Aggregate Server	N\$3INumeric	28	TI-1366/av		Null	18.59.24	18.59.24	BadCommun	nicationEr
> 🧐 Square		40	Valmet DNA Aggregate Server	NS3 Numerio	29	TI-1659/av		Null	18.59.24	18.59.24	BadCommur	nicationEr
Transfer		41	Valmet DNA Aggregate Server	NS3 Numeric	30	TIC-1302.2/me		Null	18.59.24	18.59.24	BadCommur	nicationEr
/ 🔤 inangle		42	Valmet DNA Aggregate Server	NS4 Numeric	31	BooleanDataltem	true	Boolean	18.56.14	18.56.14	Good	
> 💷 ns=3;s=Counter		43	Valmet DNA Aggregate Server	NS4[Numeric	32	ByteDataltem	0	Byte	18.56.15	18.56.15	Good	
Server1 Objects		44	Valmet DNA Aggregate Server	NS4 Numeric	33	ByteStringDatal	00	ByteString	18.56.15	18.56.15	Good	
> 414L016AC001/me		45	Valmet DNA Aggregate Server	NS4[Numeric	54	Definition	Zuz 1-00-01115:	String	18.30.13	18.00.10	Good	
ECB10DE303/mi		47	Valmet DNA Aggregate Server	NS4INumeric	53	Definition	Test definition o	String	18 56 15	18 56 15	Good	
> CB10D3202/av		48	Valmet DNA Aggregate Server	NS4INumeria	51	Definition	Test definition o	String	18.56.15	18.56.15	Good	
> In ECB30D2001/av		49	Valmet DNA Aggregate Server	NS4 Numeric	55	Definition	Test definition o	String	18.56.15	18.56.15	Good	
> ECB30DS002/av		50	Valmet DNA Aggregate Server	NS4 Numerio	50	Definition	Test definition o	String	18.56.15	18.56.15	Good	
>		51	Valmet DNA Aggregate Server	NS4 Numeric	52	Definition	Test definition o	String	18.56.15	18.56.15	Good	
EI-1203K/av		52	Valmet DNA Aggregate Server	NS4 Numeric	57	Definition	Test definition o	String	18.56.15	18.56.15	Good	
		23	vaimet DNA Aggregate Server	NS4[Numeric	01	Definition	lest definition o	string	18.56.15	18.56.15	Good	
> 📹 FI-1200K/av		24	Valmet DNA Aggregate Server	NS4Numeric	150	Definition	Test definition o	String	10.30.13	10.30.13	Good	
>		56	Valmet DNA Aggregate Server	NS4INumeric	58	Definition	Test definition o	String	18 56 15	18 56 15	Good	
>		57	Valmet DNA Aggregate Server	NS4INumeric	49	Definition	Test definition o	String	18,56,15	18.56.15	Good	
> Image: PDI-1226/av		58	Valmet DNA Aggregate Server	NS4 Numeric	59	Definition	Test definition o	String	18.56.15	18.56.15	Good	
 Di 1220/ 	~	<										>

Unified Automation UaExpert - The OPC Unified J	Archit	tecture Client - Ag	gregate-server									
ile View <u>S</u> erver <u>D</u> ocument <u>S</u> ettings <u>H</u> elp												
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oject 🗗	×	Data Access View	Event View	Server Diagnostics Vie	w Server Diagnostic	s View-1						(
/ 📁 Project		#	Server		Node Id	Display Name	Value	Datatype	Source Timestam	Server Timestamp		Statuscode
✓	1	SimulationS	erver@H7Q8Q13	NS3 Nu	meric 1001	Counter	17	Double	19.00.05	19.00.05	Good	
SimulationServer@H7Q8Q13	2	SimulationS	erver@H7Q8Q13	NS3 Nu	meric 1002	Random	0.837387	Double	19.00.05	19.00.05	Good	
Valmet DNA Simulation Server	3	SimulationS	erver@H/Q8Q13	NS5 Str	ng FloatDataltem	FloatDataitem	0	Float	18.46.25	18.56.16	Good	
Valmet DNA Aggregate Server	6	SimulationS	erver@H7Q8Q13	NS3/NU NS2/No	meric/1001	Random	0.927297	Double	19.00.05	19.00.05	Good	
Valifiet DIVA Aggregate Server	6	SimulationS	erver@H708013	NS3INu	merici1002	Sawtooth	-2	Double	19.00.05	19.00.05	Good	
V Documents	ĬĬŽ	SimulationS	erver@H708013	NS3INu	merici1004	Sinusoid	1,732051	Double	19.00.05	19.00.05	Good	
📁 Data Access View	8	SimulationS	erver@H7Q8Q13	NS3 Nu	meric 1005	Square	-2	Double	19.00.05	19.00.05	Good	
Event View	9	SimulationS	erver@H7Q8Q13	NS3 Nu	meric 1006	Triangle	1.333333	Double	19.00.05	19.00.05	Good	
Server Disgnostics View	1	0 Valmet DNA	Simulation Serve	r NS1 Stri	ng TEST-AM/av	TEST-AM/av	55	Float	19.00.03	19.00.03	Good	
	111	1 Valmet DNA	Aggregate Server	r NS2 Nu	meric 0	Counter	16	Double	19.00.04	19.00.04	Good	
Server Diagnostics View-1		2 Valmet DNA	Aggregate Server	r NS2 Nu	meric 1	Random	0.4/9061/	Double	19.00.04	19.00.04	Good	
		3 Valmet DNA Valmet DNA	Aggregate Server	r NS2 Nu	meric 2	Sawtooth	1.0	Double	19.00.04	19.00.04	Good	
		 valmet DNA Valmet DNA 	Aggregate Server	NS2[NU	mencis merici4	Sauara	2	Double	19.00.04	19.00.04	Good	
		6 Valmet DNA	Aggregate Server	NS2 NU	mericl5	Triangle	1 066667	Double	19.00.00	19.00.00	Good	
	111	7 Valmet DNA	Aggregate Server	r NS2INu	mericl6	ns=3:s=Counter	1.000001	Null	18 56 16	18 56 16	Good	
	=l i	8 Valmet DNA	Aggregate Server	r NS3INu	mericl7	14L016AC001/me	5.04	Float	19.00.01	19.00.01	Good	
ress Space 🗗 🕉	X 1	9 Valmet DNA	Aggregate Server	r NS3INu	mericl8	ECB10DS202/av	515	Float	19.00.03	19.00.03	Good	
an reddeter	2	0 Valmet DNA	Aggregate Server	r NS3 Nu	meric 9	ECB30DS001/av	525	Float	19.00.03	19.00.03	Good	
No highlight	2	1 Valmet DNA	Aggregate Server	r NS3 Nu	meric 10	ECB30DS002/av	545	Float	19.00.03	19.00.03	Good	
Root	^ 2	2 Valmet DNA	Aggregate Server	r NS3 Nu	meric 11	FCV-1103/av	55.5	Float	19.00.03	19.00.03	Good	
Chierte	2	3 Valmet DNA	Aggregate Server	r NS3 Nu	meric 12	FI-1203K/av	556	Float	19.00.03	19.00.03	Good	
	2	4 Valmet DNA	Aggregate Server	r NS3[Nu	meric[13	FI-1206K/av	556.5	Float	19.00.03	19.00.03	Good	
> 🛄 Aliases	4	5 Valmet DNA	Aggregate Server	r NS3 Nu	meric 14	HFD10AC001/av	2255	Float	19.00.03	19.00.03	Good	
AllCollectedEvents	4	b Valmet DNA 7 Valmet DNA	Aggregate Server	r NSSINU	meric 15	PDI-1226/av	55.3	Float	19.00.03	19.00.03	Good	
H708013.mshome.net	2	8 Valmet DNA	Aggregate Server	NS3INu	merici17	PDI-1220/8V	55	Float	19.00.03	10.00.03	Good	
> 💭 activit and	5	9 Valmet DNA	Aggregate Server	r NS3INu	merici18	OI-3103/av	55	Float	19.00.03	19.00.03	Good	
activityLevel	3	0 Valmet DNA	Aggregate Server	r NS3INu	merici19	OTI-1271/av	155	Float	19.00.03	19.00.03	Good	
> 💑 ev:MyLevel	3	1 Valmet DNA	Aggregate Server	r NS3INu	mericl20	SIR-1268K/av	55	Float	19.00.03	19.00.03	Good	
> 💑 Server	3	2 Valmet DNA	Aggregate Server	r NS3INu	mericl21	SIR-1269/av	55	Float	19.00.03	19.00.03	Good	
Server/USimulation	3	3 Valmet DNA	Aggregate Server	r NS3 Nu	meric 22	TDI-1215KA/av	55	Float	19.00.03	19.00.03	Good	
	3	4 Valmet DNA	Aggregate Server	r NS3 Nu	meric 23	TDI-1515MN/av	55	Float	19.00.03	19.00.03	Good	
> 🔤 Counter	3	5 Valmet DNA	Aggregate Server	r NS3 Nu	meric 24	TEST-AM/av	55	Float	19.00.03	19.00.03	Good	
> 🔜 Random	3	6 Valmet DNA	Aggregate Server	r NS3 Nu	meric 25	TI-1233/av	555.7	Float	19.00.03	19.00.03	Good	
> 🔘 Sawtooth	3	/ Valmet DNA	Aggregate Server	r NS3[Nu	meric 26	II-1290/av	55	Float	19.00.03	19.00.03	Good	
Sinuroid	5	8 Valmet DNA	Aggregate Server	r NS3[Nu	meric 27	TI-1330/av	344	Float	19.00.02	19.00.02	Good	
	5	9 Valmet DNA Valmet DNA	Addredate Server	NICZINU	merici20	TI-1650/av	244	Float	19.00.02	10.00.02	Good	
> 🖾 Square	1	1 Valmet DNA	Aggregate Server	NS3INu	merici30	TIC-1302.2/me	4	Float	19.00.02	10.00.02	Good	
> 💷 Triangle	4	2 Valmet DNA	Aggregate Server	r NS4INu	mericl31	BooleanDataitem	true	Boolean	18,56,14	18.56.14	Good	
> G ns=3:s=Counter	4	3 Valmet DNA	Aggregate Server	NS4INu	meric 32	ByteDataltem	0	Byte	18.56.15	18.56.15	Good	
M Canvard Objects	4	4 Valmet DNA	Aggregate Server	r NS4INu	meric 33	ByteStringDatal	00	ByteString	18.56.15	18.56.15	Good	
• Server i jobjects	4	5 Valmet DNA	Aggregate Server	r NS4 Nu	meric 34	DateTimeDatalt	2021-06-01T15:	DateTime	18.56.15	18.56.15	Good	
> 💷 14L016AC001/me	4	6 Valmet DNA	Aggregate Server	r NS4 Nu	meric 54	Definition	Test definition o	String	18.56.15	18.56.15	Good	
> G ECB10DS202/av	4	7 Valmet DNA	Aggregate Server	r NS4 Nu	meric 53	Definition	Test definition o	String	18.56.15	18.56.15	Good	
ECB30DS001/av	4	8 Valmet DNA	Aggregate Server	r NS4 Nu	meric 51	Definition	Test definition o	String	18.56.15	18.56.15	Good	
ECP20DS002/au	4	9 Valmet DNA	Aggregate Server	NS4Nu	meric 55	Definition	lest definition o	String	18.56.15	18.56.15	Good	
/ W ECDSUDSUU2/aV	2	v vaimet DNA 1 Valmet DNA	Aggregate Server	r NS4 Nu	mericipu	Definition	lest definition o	String	18.30.15	18.30.13	Good	
> 👹 FCV-1103/av	2	vaimet DNA Valmet DNA	Aggregate Server	r NS4[Nu	mencjoz moriel57	Definition	Test definition o	String	10.30.13	10.30.13	Good	
>	5	2 vaimet DNA 3 Valmet DNA	Aggregate Server	NS4INu	mericl61	Definition	Test definition o	String	18 56 15	18 56 15	Good	
EI-1206K/av/	1	4 Valmet DNA	Aggregate Server	r NS4INu	mericl56	Definition	Test definition o	String	18.56.15	18.56.15	Good	
	5	5 Valmet DNA	Aggregate Server	r NS4INu	mericl60	Definition	Test definition o	String	18,56,15	18.56.15	Good	
> C HFD10AC001/av	5	6 Valmet DNA	Aggregate Server	r NS4INu	mericl58	Definition	Test definition o	String	18,56,15	18.56.15	Good	
>	5	7 Valmet DNA	Aggregate Server	r NS4[Nu	meric 49	Definition	Test definition o	String	18.56.15	18.56.15	Good	
> DI-1226/av	5	8 Valmet DNA	Aggregate Server	r NS4 Nu	meric 59	Definition	Test definition o	String	18.56.15	18.56.15	Good	
	1											>

Testing: Communication – after server re-started Sub-server DNA-OPCUA-Server stopped, Statuscode = BadCommunicationError

Data	Access View							
#	Server	Node Id	Display Name	Value	Datatype	Source Timestamp	Server Timestamp	Statuscode
1	Valmet DNA Aggregate S	NS2 String ns=1;s=TEST_ANA	TEST_ANA		Null	2022-03-31T06:08:13.578Z	2022-03-31T06:08:13.591Z	BadCommunicationError
2	Valmet DNA Aggregate S	NS2 String ns=1;s=TEST_ANAEV	TEST_ANAEV		Null	2022-03-31T06:08:13.579Z	2022-03-31T06:08:13.591Z	BadCommunicationError
3	Valmet DNA Aggregate S	NS2 String ns=1;s=TEST_INT16	TEST_INT16		Null	2022-03-31T06:08:13.579Z	2022-03-31T06:08:13.591Z	BadCommunicationError
4	Valmet DNA Aggregate S	NS2 String ns=1;s=TEST_INT32	TEST_INT32		Null	2022-03-31T06:08:13.579Z	2022-03-31T06:08:13.591Z	BadCommunicationError
5	Valmet DNA Aggregate S	NS2 String ns=1;s=TEST_INT8	TEST_INT8		Null	2022-03-31T06:08:13.579Z	2022-03-31T06:08:13.591Z	BadCommunicationError
6	Valmet DNA Aggregate S	NS2 String ns=1;s=TEST_UNS16	TEST_UNS16		Null	2022-03-31T06:08:13.579Z	2022-03-31T06:08:13.591Z	BadCommunicationError
7	Valmet DNA Aggregate S	NS2 String ns=1;s=TEST_UNS32	TEST_UNS32		Null	2022-03-31T06:08:13.579Z	2022-03-31T06:08:13.591Z	BadCommunicationError
В	Valmet DNA Aggregate S	NS2 String ns=1;s=TEST_UNS8	TEST_UNS8		Null	2022-03-31T06:08:13.579Z	2022-03-31T06:08:13.591Z	BadCommunicationError
9	Valmet DNA Aggregate S	NS2 String ns=1;s=TOSI-LCS-0084-con	TOSI-LCS-0084/		Null	2022-03-31T06:08:13.588Z	2022-03-31T06:08:13.591Z	BadCommunicationError
10	Valmet DNA Aggregate S	NS2 String ns=1;s=TOSI-LCS-0084-ma	TOSI-LCS-0084/		Null	2022-03-31T06:08:13.589Z	2022-03-31T06:08:13.591Z	BadCommunicationError
11	Valmet DNA Aggregate S	NS2 String ns=1;s=TOSI-LCS-0084-me	TOSI-LCS-0084/		Null	2022-03-31T06:08:13.589Z	2022-03-31T06:08:13.591Z	BadCommunicationError
12	Valmet DNA Aggregate S	NS2 String ns=1;s=TOSI-LCS-0084-wdd	TOSI-LCS-0084/		Null	2022-03-31T06:08:13.589Z	2022-03-31T06:08:13.591Z	BadCommunicationError
13	Valmet DNA Aggregate S	NS2 String ns=1;s=TOSI-LCS-0084/actc	actconb		Null	2022-03-31T06:08:13.589Z	2022-03-31T06:08:13.591Z	BadCommunicationError
4	Valmet DNA Aggregate S	NS2 String ns=1;s=TOSI-LCS-0084/aftfc	aftfc		Null	2022-03-31T06:08:13.589Z	2022-03-31T06:08:13.591Z	BadCommunicationError
15	Valmet DNA Aggregate S	NS2 String ns=1;s=TOSI-LCS-0084/aftfm	aftfm		Null	2022-03-31T06:08:13.589Z	2022-03-31T06:08:13.591Z	BadCommunicationError
16	Valmet DNA Aggregate S	NS2 String ns=1;s=TOSI-LCS-0084/ahys	ahys		Null	2022-03-31T06:08:13.589Z	2022-03-31T06:08:13.591Z	BadCommunicationError
7	Valmet DNA Aggregate S	NS2 String ns=1;s=TOSI-LCS-0084/amc	amc		Null	2022-03-31T06:08:13.589Z	2022-03-31T06:08:13.591Z	BadCommunicationError
18	Valmet DNA Aggregate S	NS2 String ns=1;s=TOSI-LCS-0084/bias	bias		Null	2022-03-31T06:08:13.589Z	2022-03-31T06:08:13.591Z	BadCommunicationError
19	Valmet DNA Aggregate S	NS2lStringIns=1:s=TOSI-LCS-0084/cha1	cha1		Null	2022-03-31T06:08:13.589Z	2022-03-31T06:08:13.591Z	BadCommunicationError

After server running again, StatusCode = Good

Data	a Access View							
#	Server	Node Id	Display Name	Value	Datatype	Source Timestamp	Server Timestamp	Statuscode
1	Valmet DNA Aggregate S	NS2 String ns=1;s=TEST_ANA	TEST_ANA	2.64569	Float	2022-03-31T06:09:46.943Z	2022-03-31T06:09:47.066Z	Good
2	Valmet DNA Aggregate S	NS2 String ns=1;s=TEST_ANAEV	TEST_ANAEV	0	Float	2022-03-31T06:09:36.312Z	2022-03-31T06:09:36.541Z	Good
3	Valmet DNA Aggregate S	NS2 String ns=1;s=TEST_INT16	TEST_INT16	0	Int16	2022-03-31T06:09:36.312Z	2022-03-31T06:09:36.541Z	Good
4	Valmet DNA Aggregate S	NS2 String ns=1;s=TEST_INT32	TEST_INT32	0	Int32	2022-03-31T06:09:36.312Z	2022-03-31T06:09:36.541Z	Good
5	Valmet DNA Aggregate S	NS2 String ns=1;s=TEST_INT8	TEST_INT8	0	SByte	2022-03-31T06:09:36.312Z	2022-03-31T06:09:36.541Z	Good
6	Valmet DNA Aggregate S	NS2 String ns=1;s=TEST_UNS16	TEST_UNS16	0	UInt16	2022-03-31T06:09:36.312Z	2022-03-31T06:09:36.541Z	Good
7	Valmet DNA Aggregate S	NS2 String ns=1;s=TEST_UNS32	TEST_UNS32	0	UInt32	2022-03-31T06:09:36.312Z	2022-03-31T06:09:36.541Z	Good
8	Valmet DNA Aggregate S	NS2 String ns=1;s=TEST_UNS8	TEST_UNS8	0	Byte	2022-03-31T06:09:36.312Z	2022-03-31T06:09:36.541Z	Good
9	Valmet DNA Aggregate S	NS2 String ns=1;s=TOSI-LCS-0084-con	TOSI-LCS-0084/	47.3747	Float	2022-03-31T06:09:49.937Z	2022-03-31T06:09:50.076Z	Good
10	Valmet DNA Aggregate S	NS2 String ns=1;s=TOSI-LCS-0084-ma	TOSI-LCS-0084/	true	Boolean	2022-03-31T06:09:47.397Z	2022-03-31T06:09:47.568Z	Good
11	Valmet DNA Aggregate S	NS2 String ns=1;s=TOSI-LCS-0084-me	TOSI-LCS-0084/	52.0342	Float	2022-03-31T06:09:49.937Z	2022-03-31T06:09:50.076Z	Good
12	Valmet DNA Aggregate S	NS2 String ns=1;s=TOSI-LCS-0084-wdd	TOSI-LCS-0084/	0	UInt32	2022-03-31T06:09:36.313Z	2022-03-31T06:09:36.542Z	Good
13	Valmet DNA Aggregate S	NS2 String ns=1;s=TOSI-LCS-0084/actc	actconb	32	UInt16	2022-03-31T06:09:47.397Z	2022-03-31T06:09:47.569Z	Good
14	Valmet DNA Aggregate S	NS2 String ns=1;s=TOSI-LCS-0084/aftfc	aftfc	1	Byte	2022-03-31T06:09:47.397Z	2022-03-31T06:09:47.569Z	Good
15	Valmet DNA Aggregate S	NS2 String ns=1;s=TOSI-LCS-0084/aftfm	aftfm	false	Boolean	2022-03-31T06:09:36.313Z	2022-03-31T06:09:36.542Z	Good
16	Valmet DNA Aggregate S	NS2IStringIng-1:c-TOSI-LCS-0084/abur	ahur	1	Float	2022-02-21706-00-77 2077	2022-02-21T06-00-/7 5607	Good



Testing: Long term functionality

- Memory
- Load
- Stability
- Performance
- Licensing:
 - Sub-server address space is browsed, all variables licensed
 - Start license / other licenses for the aggregator
- 1 day testing with 1000 variables, 2 servers:
 - Memory usage 135Mb
 - Load 2%
 - Sub-servers re-started once (re-connect test)
 - Performance ~1000 variables: max 19ms – average 8ms – min 6ms

P	Task Manager									
File Optio	ons View									
Processes Performance Users Details Services										
			13%	* 39%						
Name		Status	CPU	Memory						
TIF	2.2%	343.4 MB								
Þ 🛃 pro	osys-opc-ua-simulation-server.exe (32 bit)		3.1%	219.6 MB						
🌒 No	ide.js: Server-side JavaScript		2.0%	191.9 MB						
Þ 🔳 EA	Log Server		0%	191.7 MB						
Þ 🔳 SQ	0%	168.3 MB								
🌒 No	de.js: Server-side JavaScript		1.8%	134.9 MB						



Scalability & performance



Scalability:

Needs more hardware & sub-servers for the testing

No visible load with 2 sub-servers: DNA-OPCUA-Server and Prosys UA Simulation Server

Node.js: Server-side JavaScript			0%	113.0 MB	
······					·
DNA-OPCUA-Aggregator.exe	2068	Running	dna	00	116152 K Node.js: Server-side JavaScript



UaExpert: Performance tests

2500 variables: min 19ms, avg 132ms, max 500ms, 5000 variables: min 40ms, avg 220ms, max 505ms

Data Access View Event View History Trend View Server Diagnostics View Performance View	Configuration			
Data Access View Event View History Trend View Server Diagnostics View Performance View M Read Create / Delete Monitored Items Node Counts: 100,250,500,1000,2000,2500 Write © Cycles 100 Read Registered © Duration 00:00:10 Write Registered 00:00:10 00:00:10 Nodes Display Name Node Id Value Display Name Node Id Value Data Type USQ02:570P NS2[String]ns=1 0 OpcUaType,Uln Readable, Write Scalar Node:	Configuration Co	Create / Delete Monitored Items Node Counts: Cycles Duration de Id Value Data Type [String]ns=1 90 OpcUaType_Float [String]ns=1 0 OpcUaType_Uin [String]ns=1 2 OncUaType_Nte	1000,2500,5000 100 00:00:10 User Access Level Array Type Array Dimensions Readable, Write Scalar Readable, Write Scalar Readable, Write Scalar	Start Test Stop Test
Results	Reset View		2 500 3 000 3 500 4 000 Niode Count Read	Refresh Values
Ready				Reset View v
Source Server Message Performance Plugin Valmet DNA Aggregate Server Reading current node values Performance Plugin Valmet DNA Aggregate Server Start performance test Performance Plugin Valmet DNA Aggregate Server End performance test Performance Plugin Valmet DNA Aggregate Server Read (NodeCount=100, Cycles=100): Avg=30.9844 Min=2.28044 Max=442.777 Performance Plugin Valmet DNA Aggregate Server Read (NodeCount=200, Cycles=100): Avg=30.6873 Min=3.30489 Max=442.801 Performance Plugin Valmet DNA Aggregate Server Read (NodeCount=500, Cycles=100): Avg=41.5339 Min=4.70533 Max=402.801 Performance Plugin Valmet DNA Aggregate Server Read (NodeCount=500, Cycles=100): Avg=62.2663 Min=8.09422 Max=425.184 Performance Plugin Valmet DNA Aggregate Server Read (NodeCount=200, Cycles=100): Avg=62.2663 Min=8.09422 Max=425.194 Performance Plugin Valmet DNA Aggregate Server Read (NodeCount=200, Cycles=100): Avg=62.2663 Min=8.09422 Max=425.194 Performance Plugin Valmet DNA Aggregate Server Read (NodeCount=200, Cycles=100): Avg=62.2663 Min=8.09422 Max=425.194	Source Performance Plug Performance Plug Performance Plug Performance Plug Performance Plug Performance Plug	Server n Valmet DNA Aggregate Serve n Valmet DNA Aggregate Serve	Message r Reading current node values r Start performance test r End performance test r Read (NodeCount=1000; Cycles=100); Avg=76.3513 Min=8.24177 Max=336.071 r Read (NodeCount=1000; Cycles=100); Avg=145.332 Min=20.328 Max=573.725 r Read (NodeCount=5000, Cycles=100); Avg=219.692 Min=39.724 Max=504.49	
renormance rugin valmet brick Aggregate server nead undoecount: 1000, cycles= 1007, kyg=62,2605 MinEs.0542 Max=447,550 Performance Plugin Valmet DNA Aggregate Server Read (NodeCount=2000, cycles=100); Avg=15315 Min=15.89242 Max=447,550 Performance Plugin Valmet DNA Aggregate Server Read (NodeCount=2500, Cycles=100); Avg=151.919 Min=19.3911 Max=4499.132	errormance Plug	vainet Diva Aggregate Serve	need (Nobecount=3000, Cycles=100); Avg=213.052 (Min=39.724 M8x=304.49	



UaExpert: Performance tests

10000 variables: min 115ms, avg 162ms, max 473ms

Data Access View	Performance View									
Configuration										<u>A</u>
	_		[
 Read 	Create / Dele	ete Monitored Items	Node Counts:	1000,5000,10000						
Write			Cycles	100						^ *
Read Register	ed									
Write Register	red		Uuration	00:00:10						V
										Start Test Stop Test
Nodes			I							4
Display Name	Node Id	Value	Data Type	User Access Level	Array Type	Array D	imensions			
EstimatedRetur	NS0 Numeric 1	0001-01-01T00:	OpcUaType_Dat	Readable	Scalar					
LocalTime	NS0 Numeric 1	Type cannot be	OpcUaType_Ext	Readable	Scalar					_
NamespaceArray	NS0INumericl2	{'http://opcfou	OncUaType Stri	Readable	Array	[6]				
Nodes in List: 10000)									Refresh Value
Results										
Cumulative R	lead									
600 -										
<u></u>										
5 -										+
0 400						+				
100										
ă										
Ĕ										
a 200 -										
8									 	
ja –	+								 	
A						°				
	· · ·	1				· ·	-		 · · ·	
0		2 0	00		4 000			6 000	8 000	10 000
						Node Co	unt			
						Re 🗖	ad			
										Reset View
Ready										
((cdd))										
	Server		Messag	e						
Plugin	Valmet DN	VA Aggregate Serv	er Reading	current node value	s					
Plugin	Valmet DN	VA Aggregate Serv	er Start pe	rformance test						
Plugin	Valmet DN	VA Aggregate Serv	er End per	formance test						
Plugin	Valmet DN	VA Aggregate Serv	er Read (N	odeCount=1000, Cy	cles=100): Av	/g=36.3501 Mi	in=21.3209 N	fax=103.628		
Plugin	Valmet DN	VA Aggregate Serv	er Read (N	odeCount=5000, Cy	/cles=100): Av	/g=100.314 Mi	in=65.1418 N	1ax=418.973		
Plugin	Valmet DN	VA Aggregate Serv	er Read (N	odeCount=10000, C	ycles=100): A	vg=161.703 N	1in=114.934 I	Max=473.611		



UaExpert: Performance tests

100000 variables: min 675ms, avg 712ms, max 935ms





Tips for testing and debugging & advanced features



Tips for testing

UaExpert settings MUST be changed

- UaExpert: Drag & Drop from hierarchy, Settings General.MaxRecursiveChildNodes default 1000 => 10000
- UaExpert, in case of not enough nodelds on server: PerformancePlugin.AllowDuplicates default false => true
- UaExpert: NumValuesPerNode => default 10000 => 100000

- Console output logLevel debug:
 - Yellow color static text
 - Green color successful information
 - Cyan color variable value
 - Red color error









Start time: Crawling is fast, building address space will take time

2022-04-28	15:30:07	debug	Using securityMode: 1 securityPolicy: None
Connected!	Exact en	debug:	usernane: valmet url: op.t.cp://C2017DEM0:62544/
2022-04-28 SESSION (15:30:07	de bug :	Now crawling: ns=1;s=DNAplease wait
client	applicat	ion URI	un:C2017DEMO:UnifiedAutomation:UaExpert
client a	upplication	uct URI on name	urn:UnifiedHutomation:Uabxpert Iocale=nulltext=UaExpert@C2017DEMO
client a	pplicati	on type	
	session 1	timeout	I 120000
2022-04-28	15-30-25	sion id	: ns=1;g=85Ch6CEC-4F1A-8h4F-5566-9851F5h54h2B Crawling: does from worthWork: ns=1:s=DN0
2022-04-28	15:30:25	debug	Graving time: 0 to 17.974s
2022-04-28 2022-04-28	15:30:25	debug: debug:	Find node: ns=2;s=DNA Added node: ss=2;s=DNA
2022-04-28	15:30:25	debug	Find node: ns=2;s=DP01
2022-04-28	15:30:25	debug:	Haute nous ns-2, s-proi
2022-04-28	15:30:25	debug:	Added node: ne=2:s=DP01/sn
2022-04-28	15:30:25	debug	falded node: n=2;==DP01/pr
2022-04-28 2022-04-28	15:35:04	debug: debug:	Find node: ns=2;s=DP01/di Added node: ns=2;s=DP01/di
2022-04-28	15:35:06	debug:	Build server #0 address space, took: 0h 4m 41,1898
2022-04-28	15:35:06	debug:	Tendpoint opc.tcp://C2017DEH0:53530/OPCUA/SimulationServer poor and a sister of the si
2022-04-28	15:35:06	debug:	Fetching #server: server: configuration from cpu json: {"username":"valmet","password":"dna","securityMode":"None","securityPolicy":"None")
2022-04-28	15:35:06	debug:	Username: valmet
2022-04-28	Exact end 15:35:06	debug:	url: opc.tcp://cz017/DENU/5.53/0/UPCDH/SimulationServer Now crawing: nesis:e5/0/ESimulationplace wait
2022-04-28	15:35:07	debug	Crawling dome from rootNode: ns=3;s=85/0:Simulation
2022-04-28	15:35:07	debug:	Grading the set of the States
2022-04-28 2022-04-28	15:35:07 15:35:07	debug:	Added node: ns=3;z=95/01:Simulation Build server #1 address space took: 00 00 0.80s
2022-04-28	15:35:07	debug	New namespace index: 4 for un:server2:C2017DEMO:53530/OPCUA/SimulationServer
2022-04-28 2022-04-28	15:35:07	debug: debug:	Endpoint: opc.tcp://2017/DEMO:5353W/OFCUM/SimulationServer root node: na=5;s=TyOD.jectsFolder Fetching Mserver: server2 configuration from cou json: ("username":valmet", "password":"dna", "securituMode":"None"."securituPolicu":"None")
2022-04-28	15:35:07	debug:	Using securityMode: 1 securityPolicy: None
Connected!	Exact en	dpoint (username: value: url: op.t.cgl/7DEM0:53530/OPCUA/SimulationServer
2022-04-28 2022-04-28	15:35:08 15:35:08	debug:	Now crawling: ns=6;s=HyObjectspstelderplease wait Crawling done from routbudg: ns=6:e=Relder
2022-04-28	15:35:08	debug	Crawling time: 0h 0m 0.703s
2022-04-28	15:35:08	debug:	Added note: ns=4;s=MyObjectsFolder
2022-04-28 2022-04-28	15:35:08 15:35:08	debug:	Build server #2 address space, took: 0h 0m 0.25s New pagemane index: 5 for upriserversing 2020 DEMO:53530/OPCH0/SimulationServer
2022-04-28	15:35:08	debug	Endpoints opc.tcp://C2017DEM0:53530/OPCUA/SimulationServer root node: ns=5;s=StaticData
2022-04-28 2022-04-28	15:35:08	debug: debug:	Fetching Hserver: servers configuration from cpu json: C'username':'valmet', "password':''dna", "securityMode':'None', "securityMoley':'None') Using securityMode: 1 securityMoley None
2022-04-28	15:35:08	debug:	Usernane: valmet
2022-04-28	15:35:08	debug:	Now crawling: ns 5: statile a conflate with the second statile of
2022-04-28 2022-04-28	15:35:09	debug: debug:	Gravling done from rootNode: ns=5;s=StaticData Gravling time: 0h vm 0.756s
2022-04-28	15:35:09	debug:	Find node: n=5;s=StaticData
2022-04-28	15:35:09	debug:	Haude: ns=5;s=5cactsLevels
2022-04-28 2022-04-28	15:35:09 15:35:09	debug: debug:	Addad node: ns=5;s=AccessLevels Find node: ns=5;s=AnalogteeApraus
2022-04-28	15:35:09	debug	Added node: ns=5;s=AnalogItenArrays
2022-04-28	15:35:07	debug:	Find node: ns-5;s=Mhalogitems Added node: ns-5;s=Mhalogitems
2022-04-28	15:35:10	debug:	Find node: n=5;s=Dataltems
2022-04-28	15:35:10	debug	Find node: ns=5is=DeepFolder
2022-04-28	15:35:10	debug:	Haude in s-5;s=MultiStateFtens
2022-04-28	15:35:10	de bug	fdded node: nes5;s=MultiStateltens' Find node: nes5;s=KatieQensulaviable:
2022-04-28	15:35:10	de bug:	Added node: ns=5;s=StaticArrayUariables
2022-04-28 2022-04-28	15:35:10	warn: debug:	Variable DataCyps: ns=951124 is incl supported. BrowseName: VariantArray Find node: n==51:=95 taticUariables
2022-04-28	15:35:10	de bug:	Added node: no=5;s=StaticVariables
2022-04-28	15:35:10	debug	Find note in style is update the set apportant in destant. Carlant
2022-04-28 2022-04-28	15:35:10 15:35:10	debug: debug:	Hddet node: n=%is/tuessapae.took: 0h 0m 0.761s
Aggregator	ready! T	otal st	art time: Oh 5m 3.8s



Aggregator: Server commands

Only user with Administrator role can use ServerCommands methods





Adding new sub-server: Aggregator is running, cannot be restarted Administrator can use ServerCommands method: AddSubServer





After sub-server started: Aggregator can rebrowse (add new variables) NOTE: Aggregator will not delete variables from the address space (no cleanup at the moment)

Call Rel	prowseServer on ServerCommands		?	×
Input Argu	ments			
Name	Value	DataType	Descriptio	n
ServerIndex	Load file	String	Sub server	index
Output Arg	uments			
Name	Value	DataType	Descriptio	n
Status	Save as	String	Rebrowse server resu	sub- ilt
Result				
		C -1	cl	
		Call	Close	•



Save Aggregator address space into the XML file

NOTE: Command will export each namespace to own individual file Next slide show usage of XML files.





Aggregator starting: preload nodeset from file

Administrator can use ServerCommands method: SaveAddressSpace NOTE: Can be used to simulate. Prosys UA Simulation server with license needed!





