Installation guide ctrlX & Factory I/O

Installation of ctrIX

- 1. Install ctrlX WORKS 1.18.1 or higher version
- 2. Use Virtual Control with the following settings:

Devices > VirtualControl-1					EN - ③ rexroth
VirtualControl-1					
ctrlX WO	RKS				Basics Extended
Device overview Find the ctrlX CORE hardware hardware. Go to documentation	are in the network or add a ctrlX CORE	irtual and develop your applications - even without	Device-centered Navigate to the ctrlX CORE engineering.	engineering or ctrIX COREvirtual homepage and start	Network adapter O Port forwarding: Morenet adapter VirtualControl-DE-AD-BE-00-00-01 TVM cares
1 item Name	State	Туре	IP addresses	C Actions	Hardware acceleration
VirtualControl-1	Online	ctrlX CORE ^{virtual}	192.168.1.1		User image 3go114ge.user.qcow2
					Save Cancel * Required information

3. Start Virtual Control and log in by clicking "Virtual Control-1"

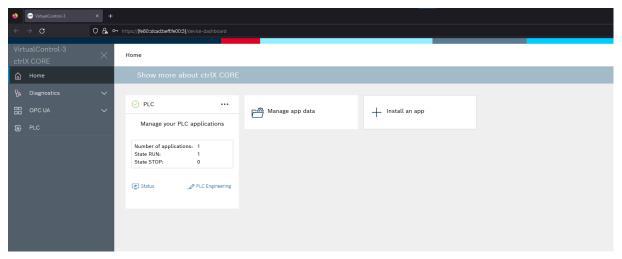
ctrlX WORKS \times	Devices				EN * (?	rexroth
Devices	Devices					
Engineering Tools						^
窟 App Build Environments	ctrlX WORKS		ואוווונר/ נ			-
	Device overview Find the ctrX CORE handware in the network or a Gio to documentation	dd a ctrlX COREvirtual and develop your app	ications - even without hardware,	Device-centered engineer		
	1 item					+ C
	Name	State	Туре	IP addresses	Actions	
	VirtualControl-1	Online	ctrlX CORE ^{virtual}	192.168.1.1		
Open VirtualCor	ntrol 1 page: https://[fe80-dcad-beff:fe00-1]/					

4. Credentials:

user: boschrexroth

We	elcome to ctrIX AUTOMATION	
	The usage of the ctrlX CORE ^{virtual} is limited to development, evaluation and simulation. Operative usage is not intended.	
	Login	
	Username * boschrexroth	
	Password * ©	
	Log in	
-		

5. Click field "Install an app"



password: boschrexroth

6. Install PLC and OPC-UA app from local directory → files in downloaded demo folder

I	Installed apps									
	OPC UA Server	1.12.5 OPC UA Server	Uninstall	PLC	1.18.2 PLC	Uninstall				
		Provide data to an OPC UA Client			Develop and run PLC applications					

7. Go to Server Settings \rightarrow activate "NONE Mode" and save changes

Na	me	Endpoint url	Active sessions	Status	Actions		Setup	Serve	er		
, Se	rver	opc.tcp://VirtualControl-3:4840	0	RUNNING	ı	~	Certificate			ision Sub	scription
							Port number 4840				
							Allow usage of Yes	ieprecated se	curity polic	les	\sim
							Security Co	nfigurati	ons		
							Policy	Mode None	Sign	Sign and Encrypt	Action
							NONE	~			ø
							BASIC256 SHA256				ø
							AES128_S HA256_R5 AOAEP				ø
							AES256_S HA256_R5 APSS				ø
							User Token	Configu	rations		
							Туре	Policy		Action	
							ANONYMO US	NONE		9	
							USERNAM E	NONE		Ð	
							USERNAM E	AES256 HA256 APSS	s_s RS	ø	
									RS	ø	

8. Change PLC from "Operating" to "Service"

VirtualControl 3 ctrIX CORE	Home		Д 🖻 A EN ×	② rexroth
A Home		▷ Operating		~
V _R Diagnostics ✓	PLC Manage your FLC applications	Setup		
6 ruc	Manage your FIC applications Swelther of applications 1 table 800 1 2 table 1 2 table 2 2 tabl			
 Settings Altout 				

- 9. Click button "Install an app"
- 10. Choose OPC UA Server

11. Activate button "Disable"

VirtualControl-3 ctrIX CORE	Settings > Apps	Service - 🗘 🖻 R EN - 🛈 rexroth
🔝 Home	Apps	
ila Diagnostics ∨ BB onclui ∨ BB PLC	Constite Consti	×
The app will be disabled, b reenabled and updated any	ut not deloted from the system. If can be time. Generated data is net lost	
	The OPC UA Server app provides a standardized communication according to the OPC Unified Architecture (OPC UA) standard. As OPC UA server, the circlx CORE provides all device data such as PEC, Molion Control Together with the OPC UA Client app, a standardized machine to machine (M2M) communication is possible.	and system information to all connected OPC UA clients.
Settings		
About		

12. Click button "Enable" to save changes

VirtualControl-3 ×	Settings > Apps	App "rewroth-opcua-server" disabled successfully X	Service 🗸 🛱 A EN + 💿 rexroth
Home	Apps		
U_{0k} Diagnostics \checkmark			
§ Δ Degrottica ∨ β FLC	OPC UA Server 1125 Provide data to an OPC UA Client Instatu Orinistatu Dominatu Dominatu Dominatu	silled Architecture (OPC UA) standard, As OPC UA server; the ctoX CORC provides all device data such as PLC, Moden Control exclusion is possible.	and system information to all connected OPC UA clients.
Settings			
About About			

You will find the settings for the ctrIX PLC project on the next page.

Settings ctrlX PLC project:

1. "Scan Network" \rightarrow Search for active devices and log in with your IP address

Device X		
Communication Settings Application	tions Backup and Restore Files Log PLC Se	Settings PLC Shell Users and Groups Access Rights Symbol Rights 🚏 Licensed Software Metrics Task Deployment Status 🕕 Information
Scan Network Gateway - De	evice •	
	ctriX PLC-Gateway v Gateway v IP-Address: localhost Port: 1217	VrtualControl-1 (active) Device Name: VirtualControl-1 Device Address: 0332.5001 Target ID: 1001 0081 Target Type: 4096 Target Version: 0.0.3.0

2. Active "Allow anonymous login":

TUSerd AlexanderSchlager/Selmo Technology GmbH/SELMO On	rganisation - Dokumentel/Selmo PMF/Demos/strill/Conveyor/strill/Conveyor project - stri	trik PLC Engineering			- B X
Fin Edit View Project Build Online Dology Teal 約成日本の公共国家文書代書代目	h Wester Holp '위에게 Ba Tar Y (2) 47 47 47 5 47 17 5 10 17	■ [5:6			
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Desices v 🕫 🗙	🖉 Conveyor_InputMepting 👔 Ukrary Nacagar 👔 H.C., M.G. 👔				•
H 😨 Conveyor 🔍 💌	Communication Settings Applications Tackup and Rentory Plan. Log PLC Settings 1 Sman Network Calescopy + Denne +	R C Shell Users and Groupe Access Rights Symbol Rights	🕴 Licensed Software Netrice - Task Deployment - Status - 🚺 Information		
IP- PA PLC Look	ScanNetwork Galeway * Desce *				
P O Application					
- 🗃 OX_Factor/3D	• =				
H 😂 Pous H 😂 Plant	0000	**			
* C Gobel	Gateway	•			
HW2_Conveyor		alControl-3 (active)			
🖮 🛄 Conveyor 🎯 Git_Conveyor		ce Name: alControl 3			
-Si Cit_Conveyor_CM2					
Sit_Conveyor_HMI	Part Device 12:7 03015	ce Address			
Conveyor (PRG)	Target	et ID: Change Bantime Security Polic	y ×		
Conveyor DisputMapping (HIG) Conveyor DisputMapping (HIG)	1001 0	Connunication			
* 😂 TOHZ	Targati 0226	di Typet Current policy	Optional encryption		
- S CAL HW2_Conveyor S CAL HW2_Conveyor HM1	leget	New policy at Vendors th Renoth AG	Optional encryption V		
GN_HW7_Conveyor_HH1			The device supports both encrypted and unencrypted communication. This can be decided by the user.		
Htt2_Conveyor (RC)	6.03.0	atVasion: Lo			
- 1 HILL, Conveyor, Cantrol (HKG)		Code Segring			
Syndol Configuration		Carrent policy	AL .		
Symbol Configuration Teck Configuration		Nen policy	A ~		
R db MainTask (200 Tasks)			All types of application code accepted.		
- El RC NG					
- Di Deservier seerine		Device User Management			
		Current policy	Optional user management		
		New policy	Optional user management		
			The user nanagement is optional on the device. It is up to the user to activate the user management or leave the device unprotected.		
			Rilewanonymous login		
			If anonymous login is activated, contain registered components (c.o. OPC UK) can		
			establish a connection without providing credentials even if user management is enabled.		
C Server Server	Your device can be secured. Learn more		OK Centel		
Messages - Total Diemor(s), 0 warming(s), 0 message(s)					- 9 ×
	maris) 💿 Owening(s) 🕒 Omessage(s) 🗙 💥				
Description					Project Object Fostion
				Device user : boschepeoth I wet held: O C 😕 E - Preservede 🗸	The 🍓 Project water (nobiody) 💿 ett 🧃
2 Inetal	ll otrl¥ library				
J. IIIStai	ll ctrlX library				
	,				
					-
= Rexroth Lice	ense Service, 0.1.0.0 (Bosch R	lexroth AG)		Rexroth_License_Service	0.1.0.0 🚺
-					

4. Install Selmo library

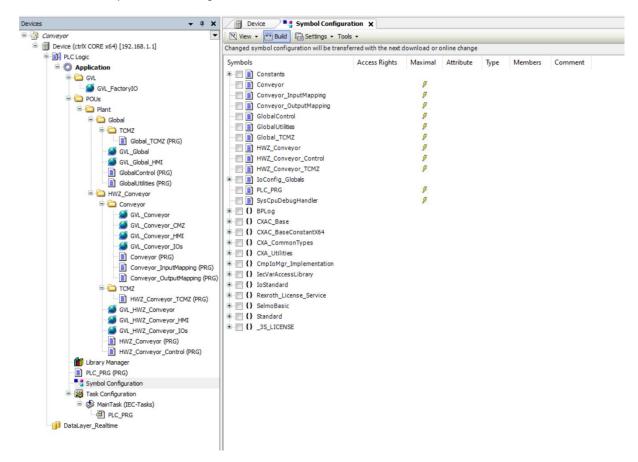
Selmo Basic = Selmo Basic, 3.0.3.13 (Selmo Technology GmbH)

SelmoBasic 3.0.3.13

(The library files can be found in the downloaded demo folder.)

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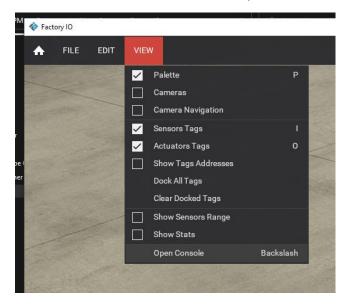
5. Tab "Symbol Configuration" \rightarrow click "Build":



Continue to Factory I/O settings on the next page.

Settings Factory I/O:

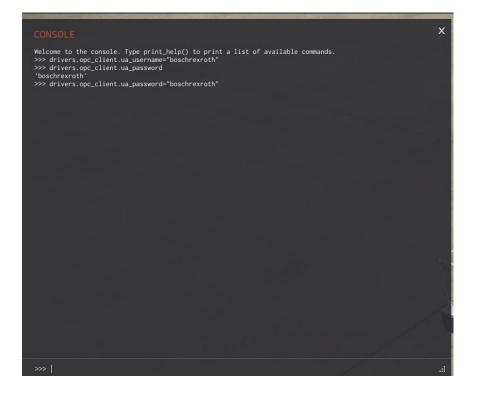
1. Tab "VIEW" → choose "Open Console"



2. Change user name for OPC-UA login to: drivers.opc_client.ua_username="boschrexroth"



3. Change password for OPC-UA login to: drivers.opc_client.ua_password="boschrexroth"



4. Search in the field "Host name" for the server: opc.tcp://virtualcontrol Make sure that the following settings are configured:

Server	
Host Name	
opc.tcp://virtualcontrol-3	
BROWSE SERVERS	
OPC Server	
ctrlX OPC UA Server @ Control (UA)	~
Items/Nodes	
BROWSE	
Limit	
32	
Filter names that start with:	
No filter	
Filter names that contain:	
GVL_FactoryIO	
GVL_FactoryIU	
DEFAULT	

Continue in Virtualcontrol

 Enabling the respective UPC-UA clients by clicking "Settings" & "Certificates & Keys" after the first login attempt (Selmo Studio & FactoryIO)

VirtualControl.3 ctrIX CORE	Settings				Service - A 🖻 A EN - 🕐 rexroth
습 Home 및 Diagnostics ~ 昍 OPC LIA ~	Harvey apple	Licenses Manage becraes			
E PLC	Backup & Restore Back up and realized the strict CORE	Ces Data Layer	Date & time Set date and time	(i) Information System informations and eletrence type plate	Scheduler Manage tasks and trong
	Setup Save and transfer sectorys and resources	Shutdown Shutdows and reboot	J Storage Harage ato age and removable modu		
	Certificates & Keys Manage certificates and large	R Users & Permissions			
	Hosts Marage host table	Network Diagnostics	Network Discovery	P Network Interfaces E Set up network interfaces	Proxy Manage procy settings
	Set up Servinal access				
 Settings About 					

2. Choose "OPC UA Server" under Service

$_{\rm ctrlXCORE}^{\rm VirtualControl\cdot3} \times$	Settings > Certificates & Keys		Service - A 🖻 A EN - O rexroth
A Home	Certificates & Keys		
Q_2 Diagnostics \sim			
🖽 OPCUA 🗸 🗸	6 items		
1 PLC	Service	Description	
	Data Layer	Stores keys that are used for secure Data Layer communication (curveMQ)	
	Web Server	Manage webserver and token validation credentials	
	Network security	Keys and certificates required for client and server-side authentication	
	SSH	Manage the SSH host keys	
	OPC UA Server	Stores keys and certilicates for the OPC UA Server	
	Setup	Authentication keys required for autorun	

3. Mark them as "Trusted"

VirtualControl-3 ×	Settings > Certificates & Keys > OPC UA Server				Service 🗸 🗍	1 🖻 A EN + 🛞	rexroth
A Home	OPC UA Server						
Va Diagnostics 🗸 🗸							
	Certificates Keys						
B PLC	3 items						<u>+</u>
	Name	Category	Issued for	Valid fro	m (UTC) Valid until (UTC)	Renewal	Actions
	resroth-opcua-server2048.der	Own	Common name: ctrUX OPC UA Server @ Control Organization: Bosch Rexroth AG	2023-03-	13 08:50:04 2122-02-17 08:50:0	4 not configured	
	76783D41D1FE44E69A797C9E1D1D224958692E8	13.de Trusted	Common name: Selmo.Core	2022-11-	27 23:00:00 2042-11-27 23:00:0	D n.a.	
	8FEA6ADB7315DF4977F62EE653C045609EF7EB7	9.de Trusted	Common name: UaExpert@SO-NB-SCHLAGER Organization: Selmo	2022-11-	28 14:26:26 2027-11-27 14:26:2	6 п.а.	
 Collings About 							

Selmo Sutdio OPC-UA settings:

Target System ———		
Select Target System:		
Bosch ctrlX COREvirtual	~)
Target OPC UA Settings	;	
OPC Server Address:		
opc.tcp://virtualcontrol-3		
OPC Server Security Policy:		
None	~	
OPC Server Security Mode:		
None	~	
OPC Username:		
boschrexroth]
OPC Password:		
•••••	0	
Test OPC connection		

Credentials:

Password: boschrexroth

OPC Server Address: specify the Virtual Control used