ADIANTECH Enabling an Intelligent Planet

Advantech SE Technical Share Document

Date	2020 / 02 / 19		ESRP-PCS-WISE	E710 / ESRP-CSS-UNO2271			
Catagoriu	🗆 FAQ 🗆 SOP	Related Product	/ ESRP-CSS-UNO2484 /				
Category	Driver Tech Note		ESRP-CSS-UNO1372/ESRP-CSS-UNO237				
Abstract	How to connect EdgeLink and Siemens S7 series device						
Keyword	WISE-PaaS EdgeLink / S	iemens S7					
Related OS	Linux image						
	F	Revision History					
Date	Version	Author	Reviewer	Description			
2020/02/19	V1.0 B	lack Chang	Nick Liu	EdgeLink Studio V2.5			

Problem Description & Architecture:

How to connect EdgeLink and Siemens S7 series device

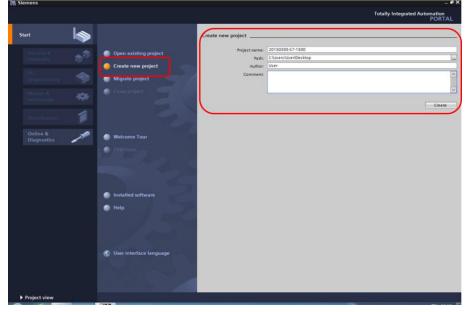
Brief Solution - Step by Step:

S7-1x00 PLC

This tech note introduces how to connect to Siemens S7 series PLC with WISE-Paas/EdgeLink. User can set the communication setup in TCP/IP and it can connect to Siemens S7 with WISE-Paas/EdgeLink.

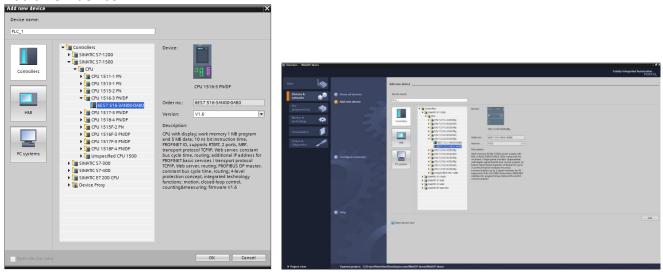
1. S7-1x00 controller setting

Create a new project:





Add a new device



In PLC_1, and choose properties

Project tree I		PU 1516-3 PN/DP] >		▶ IB IB ★ Main [0B1] _ ■ ■ ■ ×	Instruc 🗊 🗉 🕨
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PLC_1 [CPU 151	6-3 PN/I	OP]				_			×
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PLC_1 [CPU 1516-3 PN/DP]	×
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Power segment o Configuration control Connection resources Overview of addre	
	OK

Create a new data block

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Choose \rightarrow Attributes \rightarrow click optimized block access cancel

General	A 10 10 - 0 - 0	
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Time stamps		
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Extended download to device \rightarrow Load

		ess nodes of "PLC_1"						
	Device	Device type	Slot	Туре	Address		Subnet	
	PLC_1		1 X3	PROFIBUS	2			
			1 X1	PN/IE	192.168.0.1			
		CPU 1516-3 PN/DP	1 X2	PN/IE	192.168.1.1			
		Type of the PG/PC inte	rface:	PN/IE			-	
		PG/PC inte	rface:	Intel(R) PR	O/1000 MT Network	k Connection	-	
		Connection to interface/su	bnet:	Direct at slot	'1 X2'			1
		1st gat	eway:				v	0
	Compatible day	ices in target subnet:			Sł.	now all comp	atible de	evices
	compatible dev	ices in target subnet:			and the second			
	Device	Device type	Туре		Address	Target de	vice	
-			PN/IE		192.168.1.1		vice	
	Device	Device type				Target de	vice	
	Device	Device type	PN/IE		192.168.1.1	Target de	vice	
	Device	Device type	PN/IE		192.168.1.1	Target de	vice	
Flash LED	Device	Device type	PN/IE		192.168.1.1	Target de	vice	
Flash LED	Device	Device type	PN/IE		192.168.1.1	Target de	vice	
Riesh LED	Device	Device type	PN/IE		192.168.1.1	Target de		
Flash LED	Device	Device type	PN/IE		192.168.1.1	Target de	vice Start s	earch
Flash LED	Device PLC_2 -	Device type	PN/IE		192.168.1.1	Target de		earch
Online status informa	PLC_2 -	Device type CPU 1516-3 PN/DP -	PN/IE		192.168.1.1	Target de		_
Online status informa ① Scan completed	Device PLC_2 - ation: I. 1 compatible device	Device type	PN/IE		192.168.1.1	Target de		
Online status informa Scan completed Petrieving device	Device PLC_2 - ation: I. 1 compatible device	Device type CPU 1516-3 PN/DP - s of 1 accessible devices fou	PN/IE		192.168.1.1	Target de		
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Online status informa Online status informa Can completed () Scan completed () Scan and inform	ation: 1. 1 compatible device information ation retrieval comple	Device type CPU 1516-3 PN/DP - s of 1 accessible devices fou	PN/IE		192.168.1.1	Target de		



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Continue without synchronization

tware synchronization before l	oading to a device		
The CPU contains changes that	cannot be automatically synch	nronized.	
Software synchronization	Status	Action	
✓ PLC_1			
 'Program blocks' 			
Main [OB1]	0	Manual synchronization required	
Data_block_1 [DB1]	0	Manual synchronization required	
Data_block_2 [DB2]	0	Upload to project	
✓ 'PLC tags'			
Tags	0	Manual synchronization required	
		111	
Offline/online comparison	Synchro	nize Continue without synchronization	Cancel
companyour	Synemic		Carreet

"No action" change to "Re-initialize", and Load

tus	1	Target				Message		Action		
↓ <mark>↓</mark>		- PLC					ed because preconditions are no			
	4	•	Data bloci	k re-initi	alization	The data blocks will be re-in	itialized with their start values.	No action		
	0	•	Software			Download software to device	ie -	Consistent do vnload		
	0		Text librari	es		Download all alarm texts an	nd text list texts	Consistent download		
			Load							
			2040			e loading				
			Statu				Message		Action	
			+0	<	• •	²LC_1	Ready for loading.			_
				•		 Data block re-initialization 	n The data blocks will be re	initialized with their start values.	Re-initialize	
				٩		Software	Download software to dev	vice	Consistent downlo	ad
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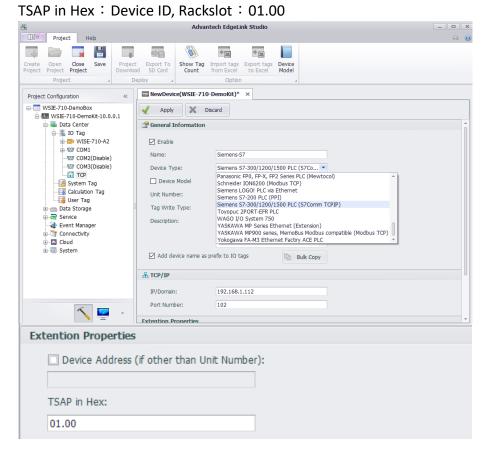
2. EdgeLink Studio Setting

- 2-1. Create one Project of EdgeLink Studio.
- 2-2. Select WISE-710 device on the EdgeLink Studio, and enter IP Address.

8		Advantech EdgeLink Studio	_ — X
Project Help			○ (0)
📮 🗁 📑 💾		👀 🔹 🕨	
Create Open Close Save Project Project Project	Project Export To Download SD Card	Show Tag Import tags Export tags Count from Excel to Excel	Device Model
Project 4	Deploy 4	Option	A
Project Configuration	*		
WSE-710-Demokr-10.0 WSE-710-Demokr-10.0 Data Storage Data Storage Event Manager Connectivity Connectivity System	.0.1		
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2-3. Add Siemens S7 driver on the TCP and setting the communication parameter. IP address: 192.168.1.112

Port Number: 102





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2-4. add tag

Basic		Advanced	
Name:	DBW0	ScalingType:	No Scale 🗸
Data Type:	Analog		
Conversion	Unsigned Integer	•	
Address:	DB1,DBW0	Scale:	0
Start Bit:	0	Offset:	0
Length(bit):	16	Clamp:	Clamp to span low
Span High:	1000		 Clamp to span high Clamp to zero
Span Low:	0		
Initial Value:	0.0		
Scan Rate:	1		
Read Write:	Read/Write	•	
Description:		÷	
vescription:		•	

2-5. Network setting:

5	Advantech EdgeLink Studio		
Project Help			
📮 🗁 🗖 💾 📮		**	
Create Open Close Save Project Project Project Downlo		Export tags Device to Excel Model	
	Deploy a Option	1 4	
Project Configuration «	Siemens-S7(WSIE-710-DemoKit)	IO Tag(WSIE-710-DemoKit-Siemens-S7)	() Network Setting(WSIE-710-DemoKit)* ×
Data Center	Apply X Discard		
. 10 WISE-710-A2	LAN1 LAN2 Wi-Fi Cellular Open	VPN	
COM1	IPv4	IРvб	
	DHCP	DHCP	
System Tag	IP Address: 192.168.1.230	IPv6 Address:	
Calculation Tag	Submask: 255.255.255.0	Subnet Prefix Length:	
🗈 👝 Data Storage	Gateway:	Gateway:	
🖶 🔁 Service 📲 Event Manager	Obtain DNS server address automa		ess automatically
🗄 🧊 Connectivity	Use the following DNS server addr	ress O Use the following DNS s	erver address
ia-Ioud ia-Ioo System	Preferred DNS Server:	Preferred DNS Server:	
E 🔒 Network & Internet	Alternate DNS Server:	Alternate DNS Server:	
		Advanced	Advanced
Port Forwarding Set	Check Connect		

2-6. please press "Project Download" and download project to WISE-710

2-7. Please change to Monitor screen and connect to WISE-710, change to IO Tag and will show the value of PLC address.

Pin Definition (in case of serial connection):

Reference: