# AD\ANTECH Enabling an Intelligent Planet

# Advantech AE Technical Share Document

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Category	□FAQ ■SOP	Related OS	N/A
Abstract	CODESYS, How to connec	t Advantech PAC	platform to ADAM-6K series
Keyword	Modbus/TCP, ADAM-6K s	eries, CODESYS	
Related			
Product	APAX-3380, ADAIN-5560		

# Problem Description:

Modbus is a protocol widely used in automation control, which is supported by various kinds of product such as sensor, remote I/O, RTU...

In this document, we will explain detail procedures of CODESYS IDE setting and we will use ADAM-6066 which supports Modbus/TCP for the demonstration.

User could follow these steps to create a COEDESYS project and make their platform communicate with Modbus/TCP end-device successfully.



#### Steps by steps:

#### **1. Add Ethernet Adapter**

Right click on device, and select "Add Device" (Figure 1)



Figure 1

Select Fieldbusses  $\rightarrow$  Ethernet Adapter  $\rightarrow$  Ethernet (*Figure 2*)

Name: Ethernet			
Action			
Acuon:	innart davisa 🔿 Diva davisa 🔿 I	Llo data davisa	
Append device 01	insert device O Piug device O		
Device:			
Vendor: <all th="" vendors:<=""><th>&gt;</th><th></th><th></th></all>	>		
Name	Vendor	Version	
🗉 🕤 Miscellaneous			
🖻 🕤 Fieldbusses			
E CAN CANbus			
Ethercat			
Ethernet Ad	lapter		
Cill Cale and	et 3S - Smart Software Solut	tions GmbH 3.5.8.20	
	)		
EtherNet/IP			
EtherNet/IP			

Figure 2



Click on Ethernet icon, and assign its interface (Figure 3)

Devices 🗸 🕂 🗙	f Ethernet 🗙		6
ADAM6K  ADAVice (Advantech Control x86 RTE V3)	General	Interface:	
Plc Logic	Status	Operating Sy	vstem Settings
- Ibrary Manager - II PLC_PRG (PRG)	Information	Change Operatin	g System Settings
Task Configuration		IP Address	192 . 168 . 0 . 1
■-ॐ MainTask ∰ PLC_PRG 1		Subnetmask	255 . 255 . 255 . 0
Ethernet (Ethernet)		Default Gateway	0.0.0.0
	Figure 3		

Select on LAN card that you want to connect you Modbus/TCP device with.(*Figure 4*)

Interfaces:					
Nome Door	ription	IP	Address		
區域連線 CoDe	Sys EtherExpress GBit PCI	Ethernet Adapter 193	2.168.0.80		
画或連線 2 Intelu	k) Ethernet Connection 12.	18-LM 0.0	.0.0		
IP Address	192 . 168 . 0 . 80	1	_		
IP Address Subnetmask	192 . 168 . 0 . 80 255 . 255 . 255 . 0	)	-	-	-
IP Address Subnetmask Default Gateway	192       .168       .0       .80         255       .255       .255       .0         192       .168       .0       .25	1			
IP Address Subnetmask Default Gateway MAC Address	192 . 168 . 0 . 80 255 . 255 . 255 . 0 192 . 168 . 0 . 25 74:FE:48:0C:AE:FF	4			2
IP Address Subnetmask Default Gateway MAC Address	192 . 168 . 0 . 80 255 . 255 . 255 . 0 192 . 168 . 0 . 25 74:FE:48:0C:AE:FF	4			2

Figure 4

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## 2. Add Modbus TCP Master

-,--...... 👔 Ethernet ( X Cut Ē. Copy Ê Paste × Delete Refactoring ۲ **₽** Χ Properties... АМБК Add Object Project Setting Add Folder... Add Device... Insert Device Disable Device Update Device... Edit Object ß - Totally 0 error Edit Object With... 🖸 0 er Edit IO mapping ion Import mappings from CSV... f global data: 14 Export mappings to CSV... allocated memo Simulation ry area 0 contai e: size: ry area 1 contai hest us **Device Configuration** ۲ ry area 2 contains Persistent Data: size: 2097108 bytes , highest

Right click on Etherent icon  $\rightarrow$  Add Device (*Figure 5*)

Figure 5

Select Fieldbusses  $\rightarrow$  Modbus  $\rightarrow$  Modbus TCP Master (*Figure 6*)

Name: Modbus_TCP_Master Action: Append device	device 🔘 Plug device 🌀 Update device	
Device: Vendor: <a>All vendors&gt;</a>		•
Name	Vendor	Version
Fieldbusses     Fieldbusses     EtherNet/IP		
Modbus TC	Master	
Modbus	TCP Master 3S - Smart Software Solutions 0	GmbH 3.5.8.10
HINK ModbusTCP	Slave Device	
+ Profinet IO		

Figure 6



#### 3. Add ADAM Device

Right click on Modbus TCP Master  $\rightarrow$  Add Device(*Figure 7*)



Figure 7

Select Fieldbusses  $\rightarrow$  Modbus  $\rightarrow$  Modbus TCP Slave (*Figure 8*)

Note: You need to install Advantech add-on package first so that you could select ADAM series.

Action:			
Append device	device 🔘 Plug device 🔘 Updated	evice	
Device:			
Vendor: <a>All vendors&gt;</a>			
Name	Vendor	Version	
Fieldbusses			
🖶 📖 Modbus	I		
🗄 🗰 Modbus TCP	Slave		
ADAM 50	00/TEP Advantech Co., Ltd.	3.5.4.0	
🔚 ADAM-50	00L/TCP Advantech Co., Ltd.	3.5.4.0	
- ADAM-60	15/6217 Advantech Co., Ltd.	3.5.4.0	
_	17 Adversterin Co. 1 til	3540	
- ADAM-60	Advantech Co., Ltd.	5.5.4.0	

Figure 8

Select ADAM module that you connected with PAC, we select ADAM-6066 for demonstration here. (*Figure 9*)



Figure 9

Double click on ADAM device and enter the IP address of ADAM accordingly. (Figure 10)



Figure 10

## 4. Test Result

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Compile the project, log in to PAC and run the program to see whether it work or not. First, you could see there is an indicator on your end-device, it should be green. You could also double-click on the device and check ModbusTCP slave I/O mapping, you should be able to see the current value from your end-device as shown in *Figure 11*.

