Date	2015/07/ 16	**SR#**	1-2120328816
Category	■FAQ □SOP	**Related OS**	N/A
Abstract	How Much Voltage or Current Can ADAM DO Outputting		
Keyword	ADAM, DO, Open Collector		
Related Product	DO(Open Collector) support among ADAM-4XXX & ADAM-6XXX		

■ Problem Description:

This document explains a common question regarding how much voltage/current can DO channel of ADAM-Module outputting.

■ Brief Solution - Step by Step:

Unlike from PLC design, users sometimes misunderstanding that DO channel of ADAM-Module is capable of outputting different level of voltage or current based on pre-defined logic(i.e. “0” or “1”) at a given DO channel.

If you check DO SPEC from Advantech technical documentation, you often see the following statement in the SPEC:

DO, Open Collector to 30 V, 30mA Max.Load

That means, the DO channel of ADAM-Module utilizes an “Open Collector” for which acting like an “Switching Circuit”, that is:

“Open Circuit (no connection to anything)”

OR

“Short Circuit (connection to ground)”.

So, instead of outputting a signal of a specific voltage or current, a control signal is applied to the base of an internal NPN transistor whose collector is externalized (open) on a pin of the IC. The emitter of the transistor is connected internally to the ground pin.

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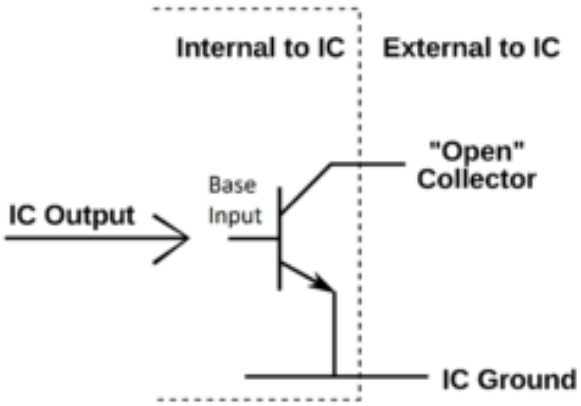
Internal to IC
External to IC
"Open"
Collector
Base
Input
IC Output
IC Ground

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Date	2016/02/04	**SR#**	1-2381207318
Category	■FAQ □SOP	**Related OS**	N/A
Abstract	ADAM-6000 & ADAM-6200, How to send the data to the external network?		
Keyword	Ethernet, Port Forwarding, IP, Port, NAT		
Related Product	ADAM-6000 series, ADAM-6100 series, ADAM-6200 series		

■ Problem Description:

This document explains what is needed to be noticed if the ADAM needs to send the data to the external network?

■ Answer:

If GCL sends the remote message to the outside network, that means your application requirement is about data communication for device locating between intranet (private/internal network) and internet (public/external network) via NAT.
There are two scenarios for the external machine (pc). One is in the private domain. Another is in the public domain.

If the external machine is in private domain, then you need manually configure “port forwarding” on your Gateway Router (such as Cisco/D-Link/Linksys etc…) to enable bi-directional request communication. This is because NAT only allows requests coming from the internal network to the external network, which means that it is impossible as such for an external machine to send a packet to a machine on the internal network. In other words, the internal network machines cannot operate as a server with regards the external network. For this reason, the Gateway Router normally provide one function called "port forwarding" or port mapping consisting of configuring the gateway to send all packets received on a particular port to a specific machine on the internal network. So, if the internal network device(let’s say an ADAM module => Internal Network) needs to access the port 1052 (user-defined) operating on machine 172.18.3.4 (Let’s say pc => External Network), it will be necessary to define a port forwarding rule on the gateway, redirecting all TCP packets received on port 1052 (user-defined) to machine 192.168.1.2. The following picture demonstrates the discussion above:

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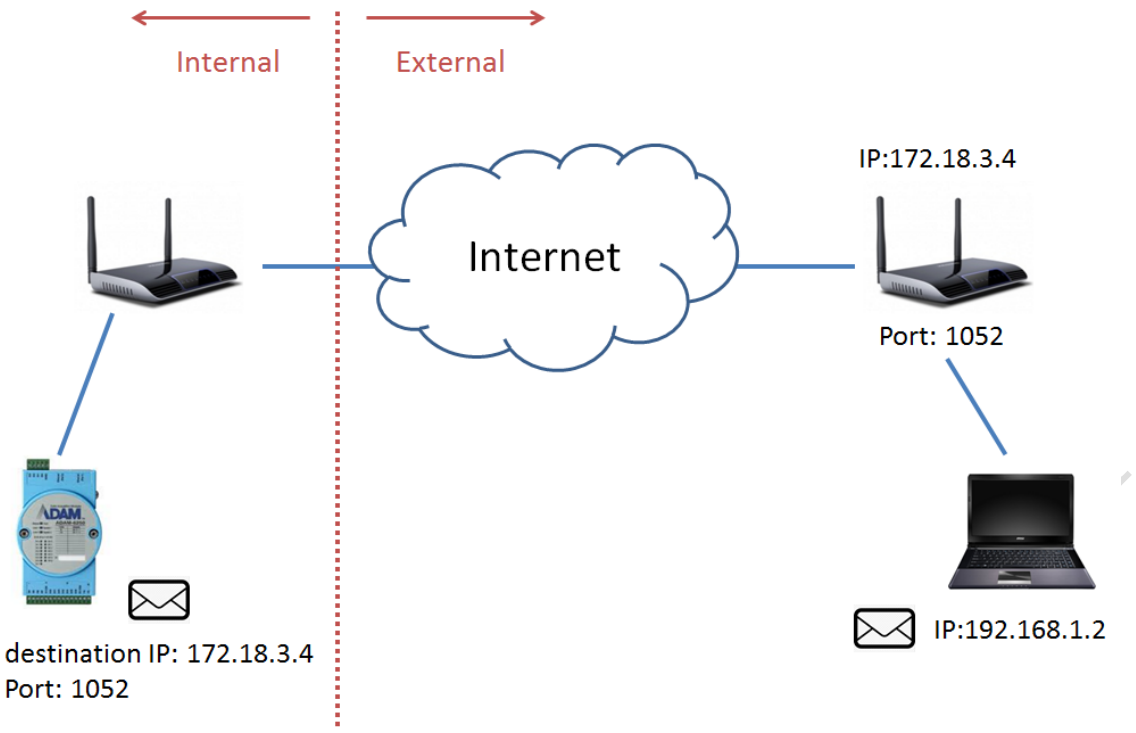
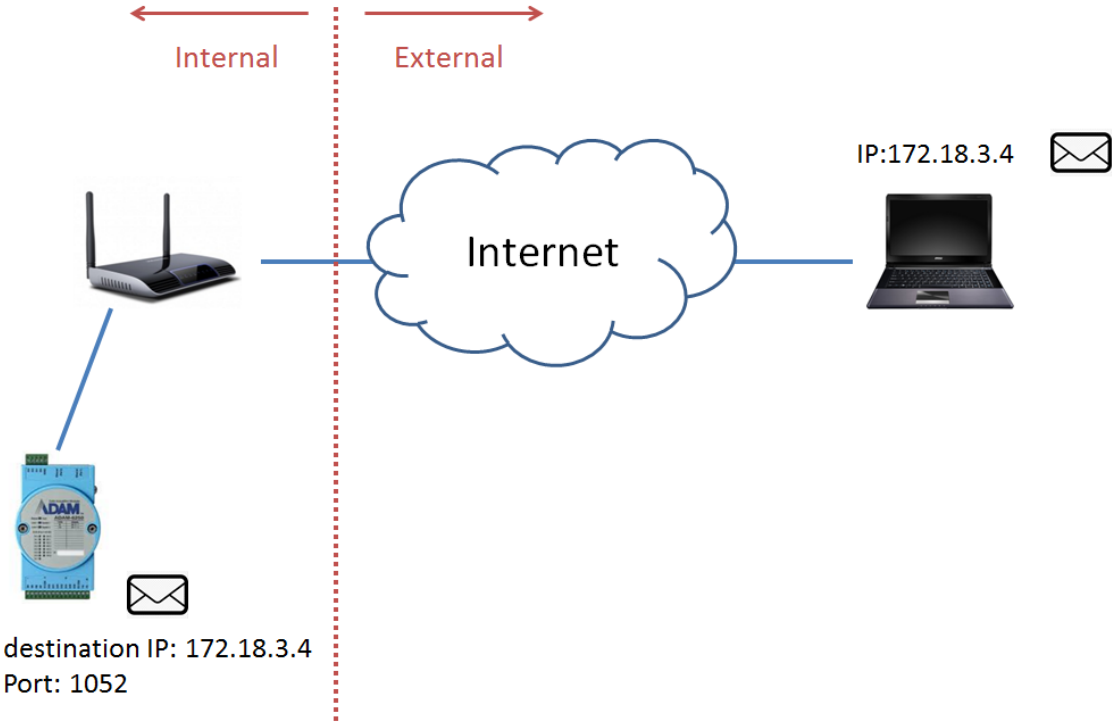


If external machine is in public domain (it means that the pc has a public address). The internal network machine (let's say an ADAM module => Internal Network) to sends udp packet to a machine 172.18.3.4 directly and need to set "port forwarding".



Moreover, the customer can also establish the VPN environment to make the external device in the internal network. Then, the ADAM can send the udp packet to the machine in the internal network.

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Date	2016/06/27	SR#	1-2495023181
Category	■FAQ □SOP	Related OS	N/A
Abstract	ADAM-60XX & ADAM-62XX, How does Utility to list ADAM modules?		
Keyword	IP, MAC Address, Utility		
Related Product	ADAM-6000, ADAM-6200		

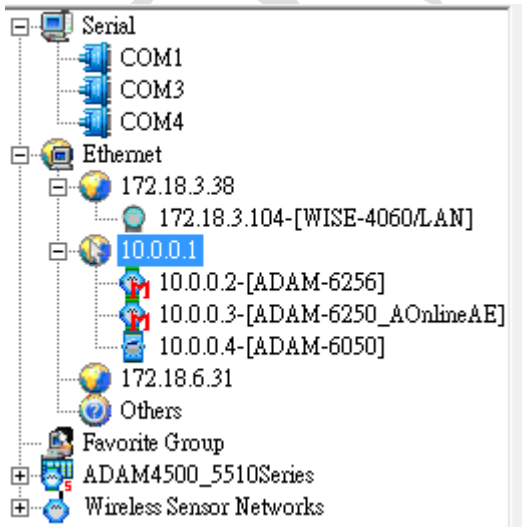
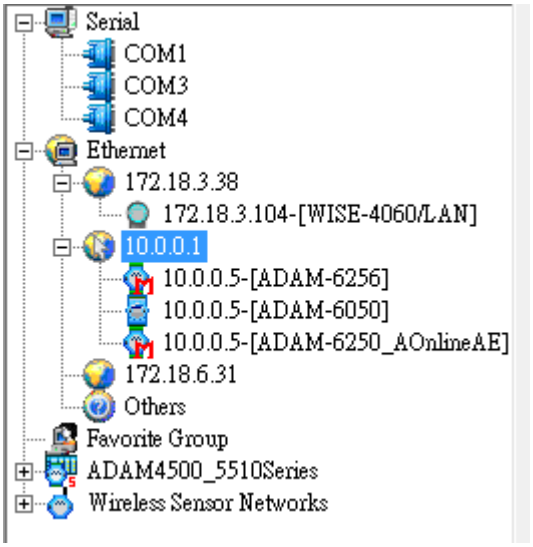
■ Problem Description:

This document shows how does Utility to list ADAM modules?

■ Answer:

When Utility search the Ethernet module (ADAM-6000, ADAM-6200 series), it lists the module in the left side. What's the order of them? If IPs of each module is different, Utility can list them by the descending order. If the IP is the same, Utility lists them refer to Mac Addressing by descending order. The following test shows that:

Module: ADAM-6256, Mac Address: 00-D0-C9-F3-DA-6D
Module: ADAM-6250, Mac Address: 00-D0-C9-F5-B3-17
Module: ADAM-6050, Mac Address: 00-D0-C9-F4-B1-9F

IP is different.	IP is the same.
	

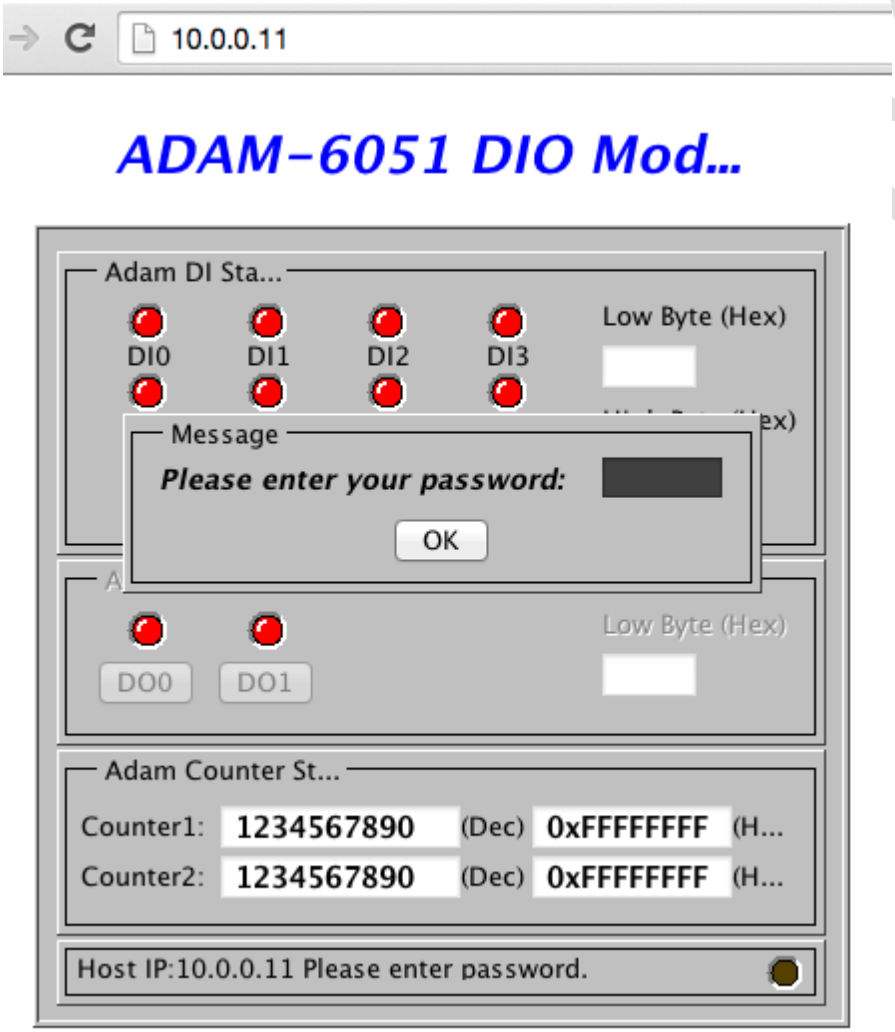
ADVANTECH

Advantech AE Technical Share Document

Date	2015 / 04/08	**SR#**	1-2042419571
Category	□FAQ ■ SOP	**Related OS**	N/A
Abstract	ADAM-60XX_Can not enter the password when using the HTTP server function		
Keyword	ADAM-60XX, Java, Web Service, HTTP, Password		
Related Product	ADAM-60XX		

■ **Problem Description**:

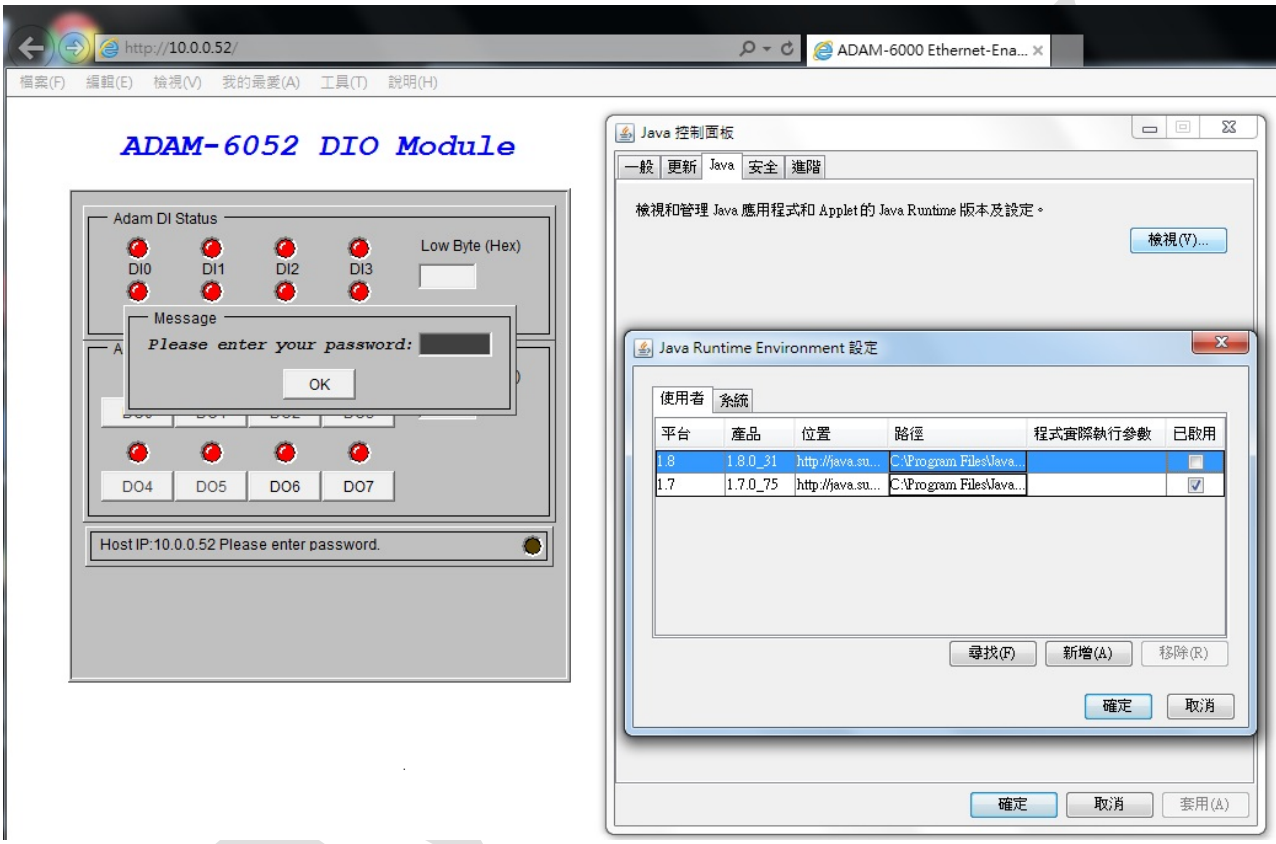
The user can't enter the HTTP server when trying to key in the password.



■ **Brief Solution - Step by Step**:

This is the compatibility issue between Java Applet and ADAM module.

It's confirmed with 1.7 version of Java Applet, the function can work properly.
Please downgrade the version of Java Applet to 1.7, or upgrade the HTML file of ADAM-60XX-CE to the newest version which support HTML5 to prevent this issue.



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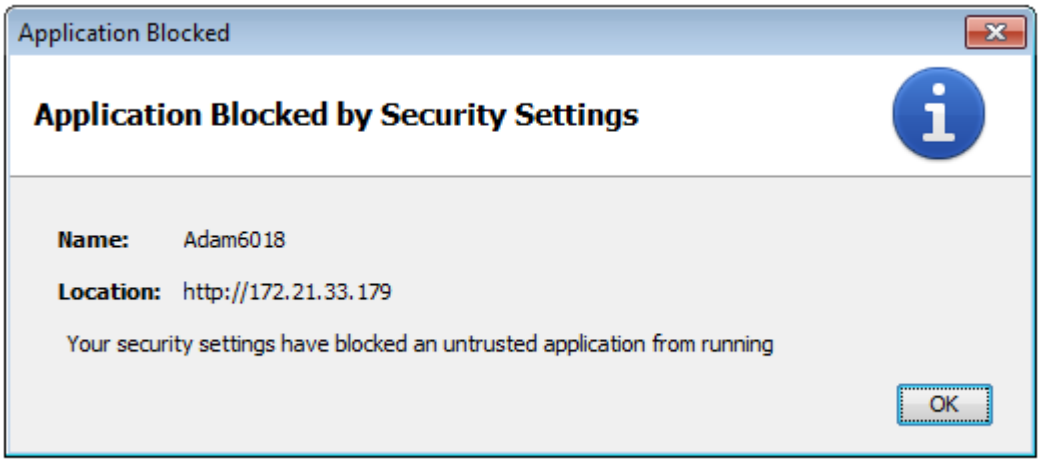
Date	2015/04/08	**SR#**	1-2042547323
Category	■FAQ □SOP	**Related OS**	N/A
Abstract	ADAM-60XX_Application Blocked by Security Settings		
Keyword	ADAM-60XX, Security setting, Java, Web service		
Related Product	ADAM-60XX		

■ **Problem Description:**

The browser have block message as the follow picture when using the HTTP server function



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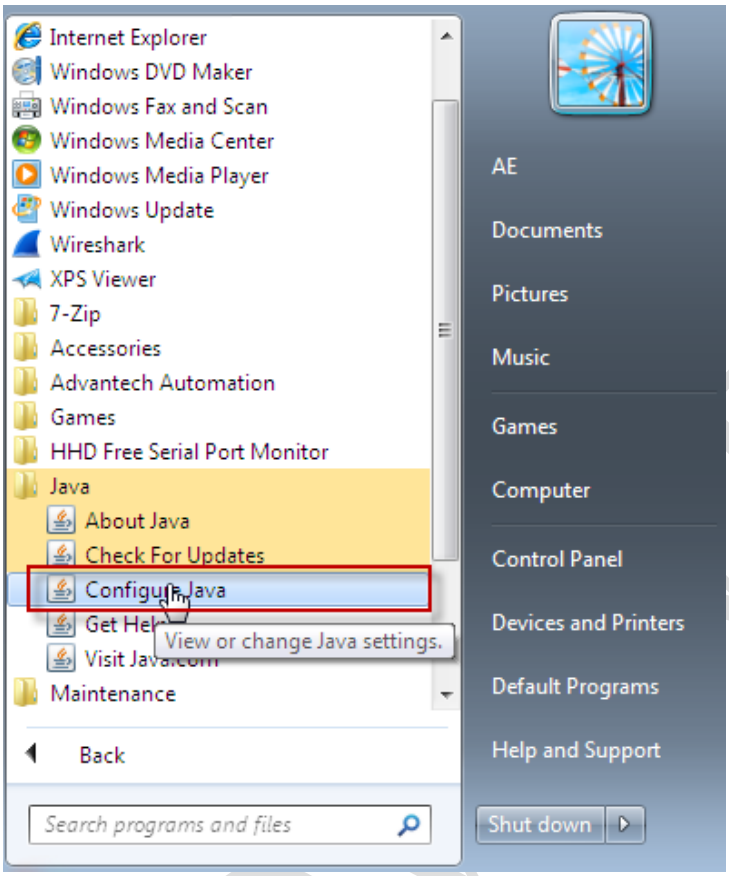
■ **Brief Solution - Step by Step:**

The problem is related to the security setting of JAVA, please refer to the following picture and do the setting accordingly to solve the issue.



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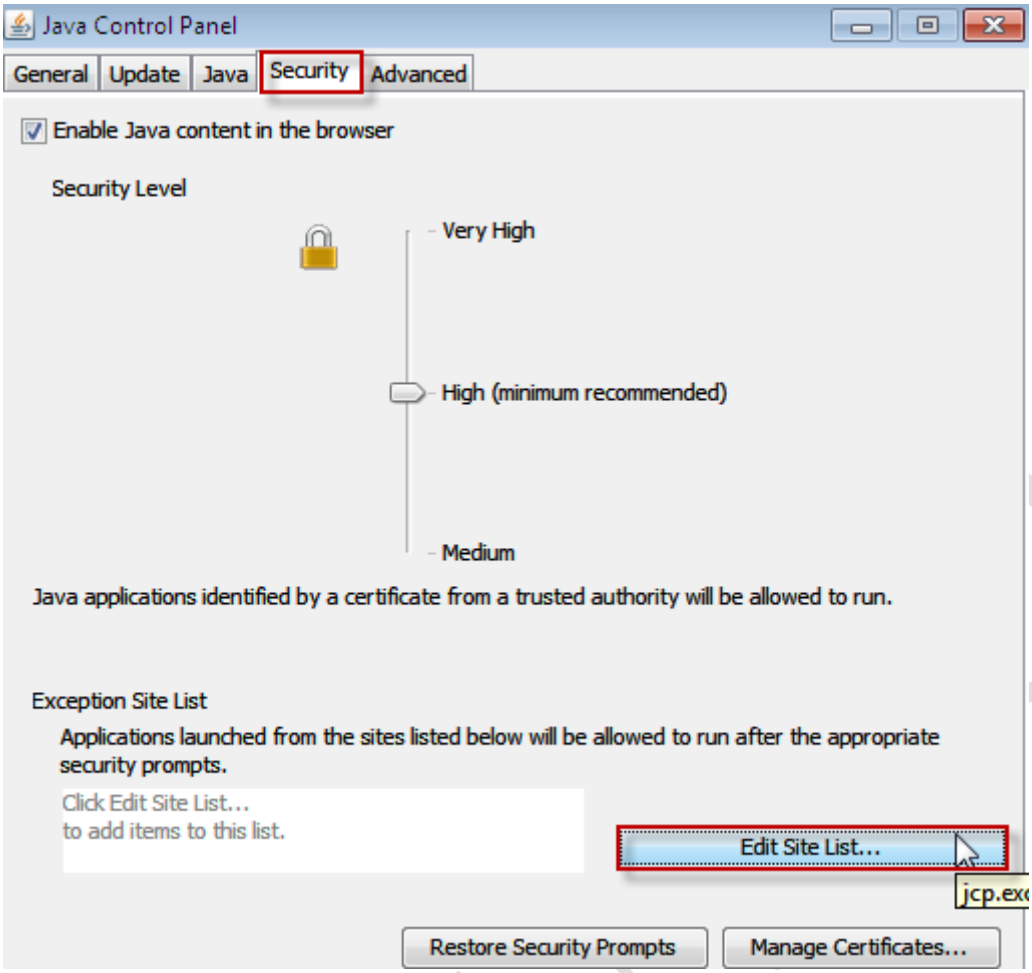
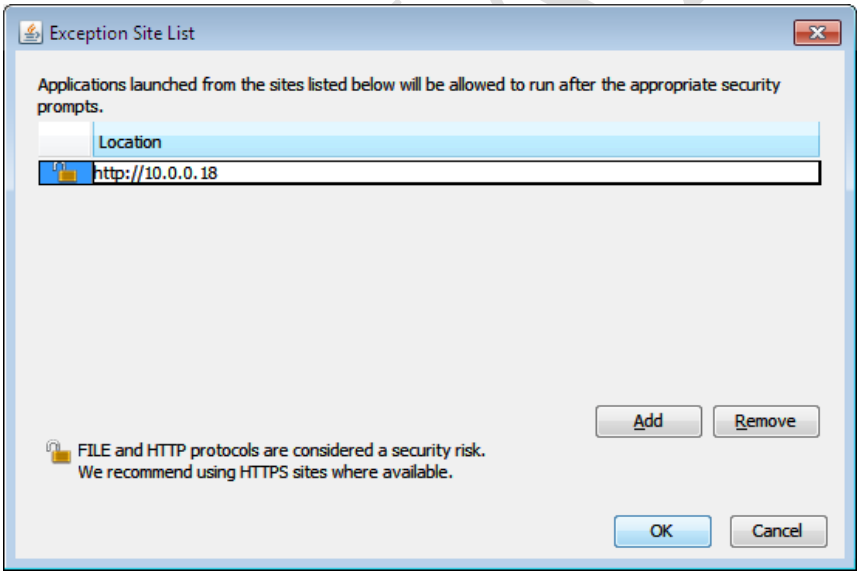
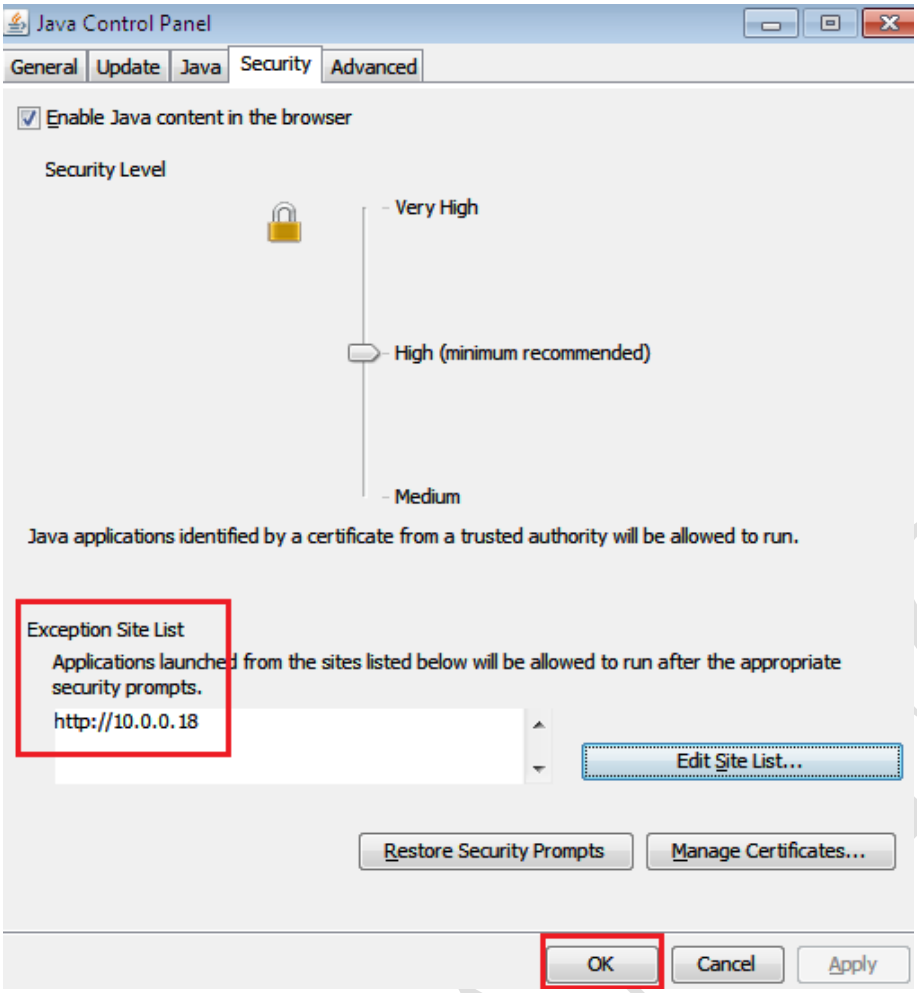
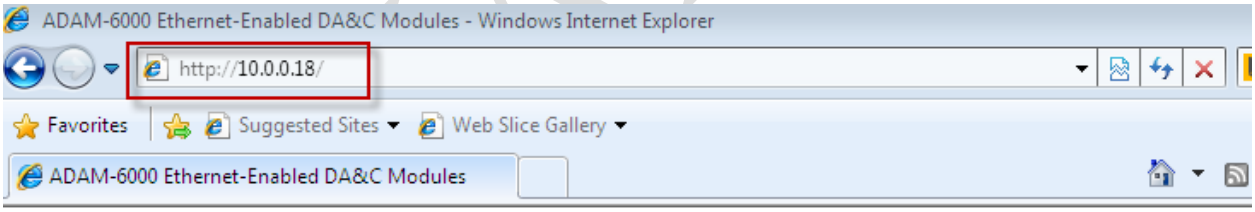
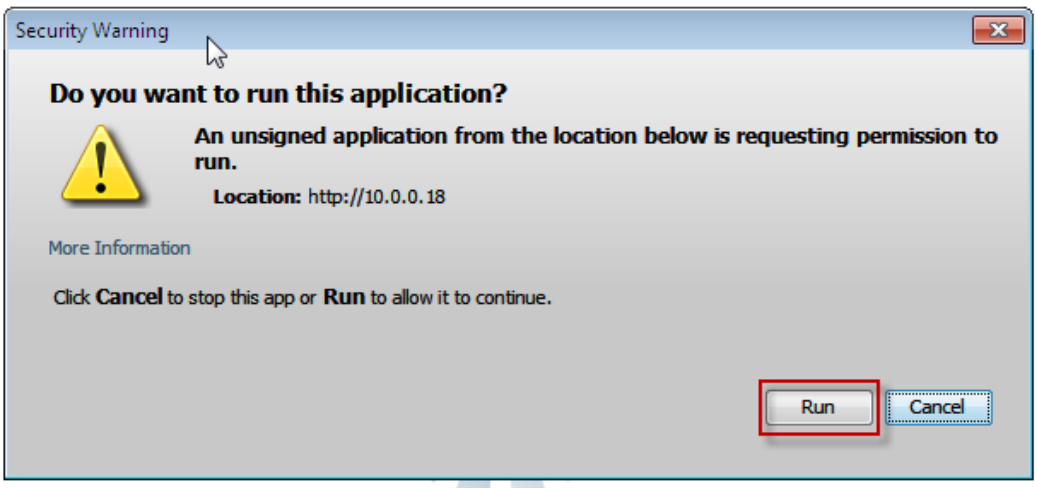


Input IP address of your ADAM-Module

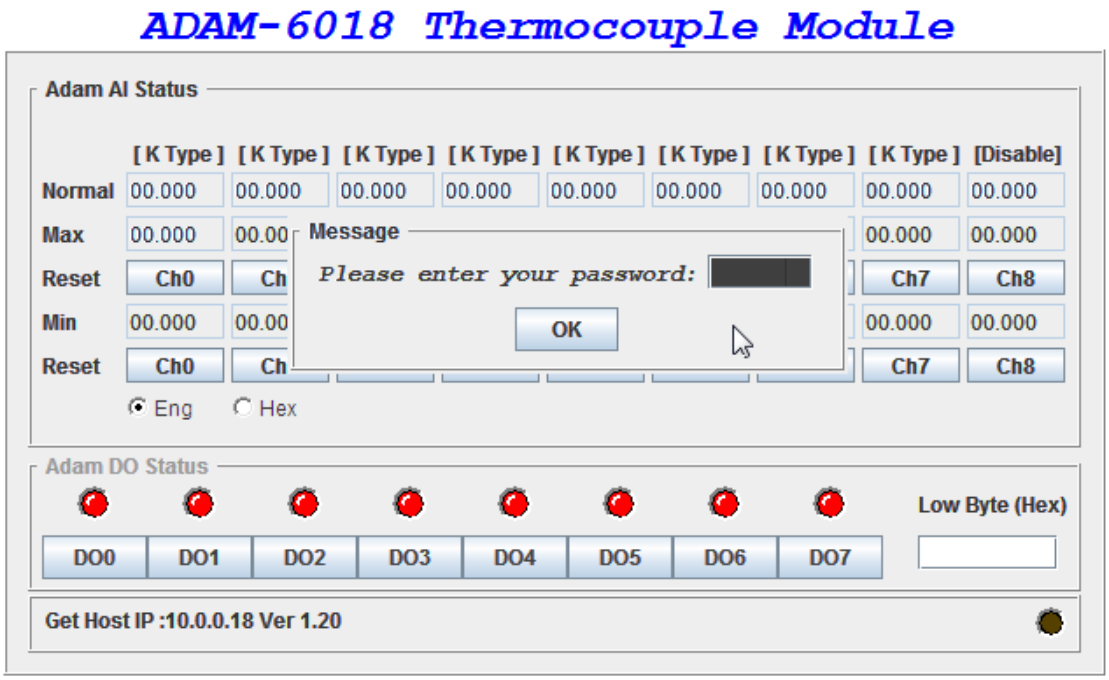



Java Control Panel
General
Update
Java
Security
Advanced
Enable Java content in the browser
Security Level
Very High
High (minimum recommended)
Medium
Java applications identified by a certificate from a trusted authority will be allowed to run.
Exception Site List
Applications launched from the sites listed below will be allowed to run after the appropriate security prompts.
http://10.0.0.18
Edit Site List...
Restore Security Prompts
Manage Certificates...
OK
Cancel
Apply


ADAM-6000 Ethernet-Enabled DA&C Modules - Windows Internet Explorer
http://10.0.0.18/
Favorites
Suggested Sites
Web Slice Gallery
ADAM-6000 Ethernet-Enabled DA&C Modules


Security Warning
Do you want to run this application?
An unsigned application from the location below is requesting permission to run.
Location: http://10.0.0.18
More Information
Click Cancel to stop this app or Run to allow it to continue.
Run
Cancel

Warning - Unavailable Version of Java Requested
This application would like to use a version of Java (1.4.1) that is not installed on your system. We recommend running the application with the latest version of Java on your computer.
More Information
Name: Adam6018
Location: http://10.0.0.18
Run with the latest version
Cancel


ADAM-6018 Thermocouple Module
Adam AI Status
[K Type] [K Type] [K Type] [K Type] [K Type] [K Type] [K Type] [K Type] [Disable]
Normal 00.000 00.000 00.000 00.000 00.000 00.000 00.000 00.000 00.000
Max 00.000 00.00 00.000 00.000
Reset Ch0 Ch Ch7 Ch8
Min 00.000 00.00 00.000 00.000
Reset Ch0 Ch Ch7 Ch8
Eng Hex
Message
Please enter your password:
OK
Adam DO Status
Low Byte (Hex)
DO0 DO1 DO2 DO3 DO4 DO5 DO6 DO7
Get Host IP :10.0.0.18 Ver 1.20

Advantech AE Technical Share Document

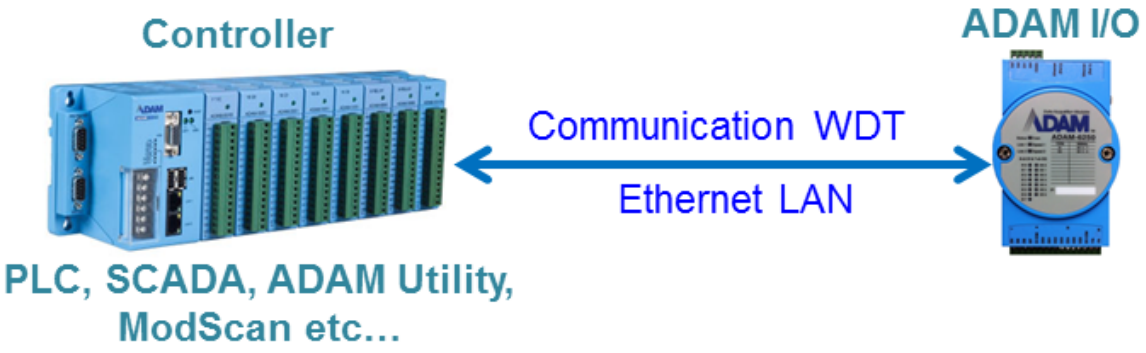
Date	2015/04/13	**SR#**	1-2042604952
Category	■FAQ □SOP	**Related OS**	N/A
Abstract	ADAM-60XX and ADAM-62XX_What's the function of communication watch dog timer		
Keyword	ADAM-60XX, ADAM-62XX, WDT, Host Idle Timeout		
Related Product	ADAM-60XX and ADAM-62XX		

■ **Problem Description**:

This documentation explains the communication WDT function

■ **Brief Solution - Step by Step**:

As the described in the following picture, when the communication between controller and ADAM is fine, there will be the packet transmitted and received periodically.



When the communication is down, with the help of communication WDT, user can turn on or turn off the output within a particular period to prevent unstable or dangerous output status.

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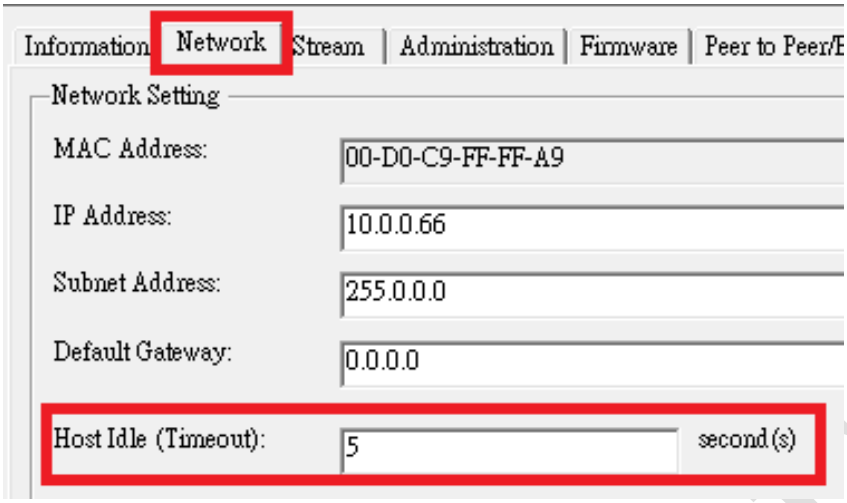
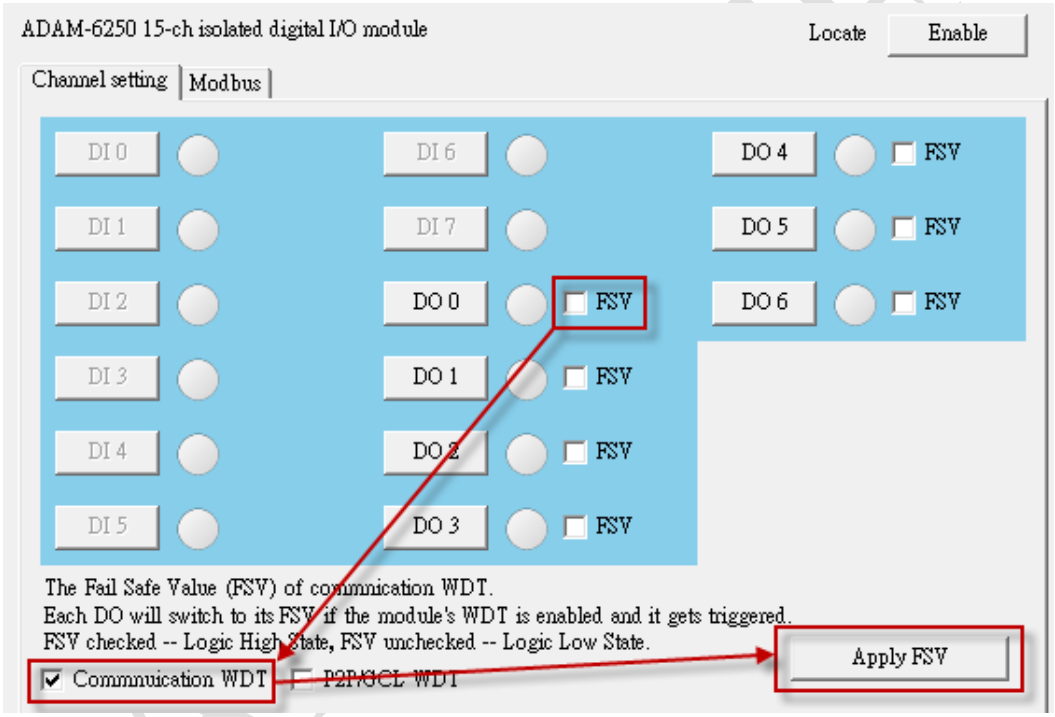
User just need to set the host idle and enable the communication WDT in the utility.
The output will be turned on or off according to the setting in the utility.





Advantech AE Technical Share Document

Date	2015/04/13	**SR#**	1-2048753834
Category	■FAQ □SOP	**Related OS**	N/A
Abstract	ADAM-60XX and ADAM-62XX_Can't find the module with the utility		
Keyword	ADAM-60XX, Search module, Utility		
Related Product	ADAM-60XX		

■ Problem Description:

The user may forget the IP address of a particular ADAM module and can’t find it with the search function in the utility.

This documentation explains how to find the module when you forget the IP address of the module.

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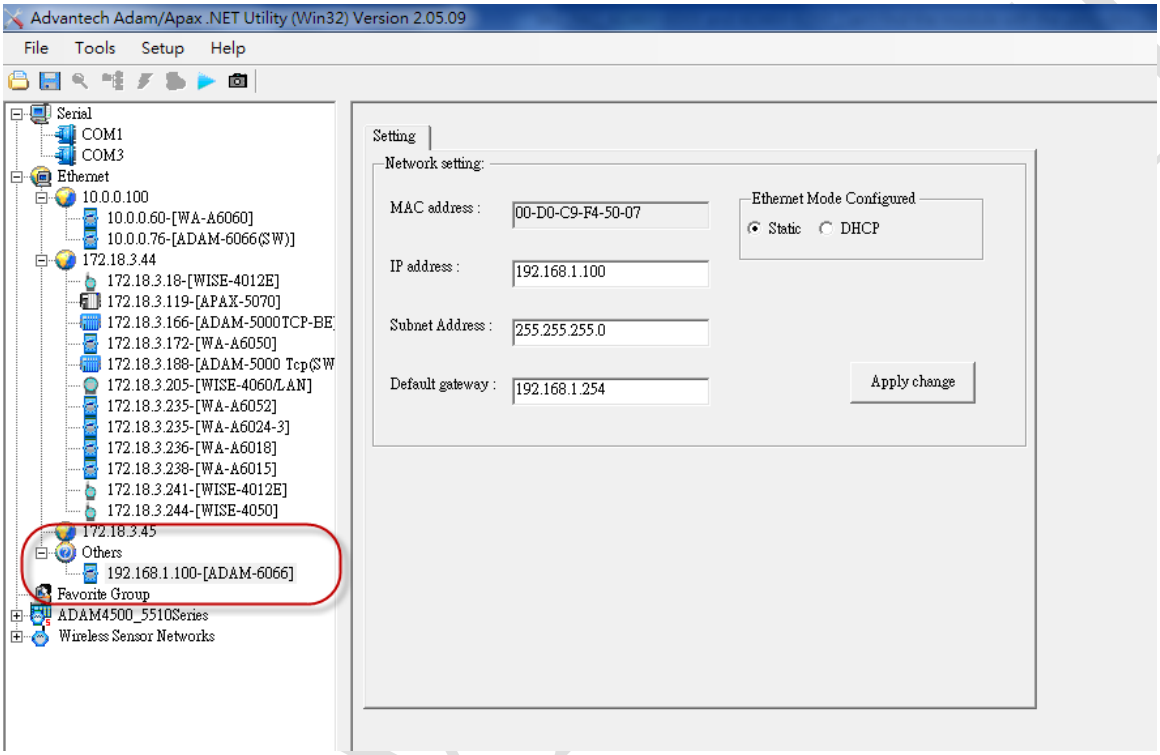
■ **Brief Solution - Step by Step:**

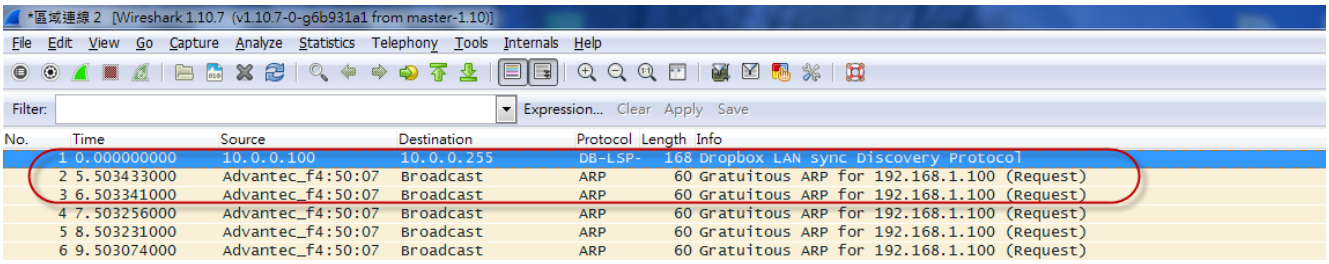
The problem may be related to the improper network setting parameter like IP with different network domain within the PC, invalid default gateway.
We would suggest the customer download the newest version of the utility and try again, the module should appear in the “other” tabs of the utility and you could set it to the same network domain as your PC then do the search again,



If the problem still exist and can’t get the IP of ADAM module, you may need to use Wireshark to capture to packet when the module is power-up.

For the information about how to use Wireshark, please refer to FAQ *“IAG_SOP_ADAM-60XX and ADAM-62XX_How to use Wireshark to collect the packet”*.

As the following picture, user can find the IP address of ADAM with the ARP packet.
The packet in the picture indicateds that the IP of ADAM is 192.168.1.100, user can modify the IP of PC’s network card to the same network domain as ADAM then use utility to do the seahch again.


*區域連線 2 [Wireshark 1.10.7 (v1.10.7-0-g6b931a1 from master-1.10)]
File Edit View Go Capture Analyze Statistics Telephony Tools Internals Help
Filter: Expression... Clear Apply Save
No. Time Source Destination Protocol Length Info
1 0.000000000 10.0.0.100 10.0.0.255 DB-LSP- 168 Dropbox LAN sync Discovery Protocol
2 5.503433000 Advantec_f4:50:07 Broadcast ARP 60 Gratuitous ARP for 192.168.1.100 (Request)
3 6.503341000 Advantec_f4:50:07 Broadcast ARP 60 Gratuitous ARP for 192.168.1.100 (Request)
4 7.503256000 Advantec_f4:50:07 Broadcast ARP 60 Gratuitous ARP for 192.168.1.100 (Request)
5 8.503231000 Advantec_f4:50:07 Broadcast ARP 60 Gratuitous ARP for 192.168.1.100 (Request)
6 9.503074000 Advantec_f4:50:07 Broadcast ARP 60 Gratuitous ARP for 192.168.1.100 (Request)

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Date	2015 / 09 / 04	SR#	1-2215179503
Category	■FAQ □SOP	Related OS	N/A
Abstract	ADAM-6000 & 6200 How to detect the change of DI status		
Keyword	.NET class library, DI, P2P, change of status		
Related Product	ADAM-60XX, ADAM-62XX		

■ Problem Description:

A customer build their own application to acquire the data status from the I/O ports on ADAM-6050, every change of status is recorded by computer with SQL database. According to the customer's description, the device mounted on machine records 15-17 cycles but database only shows 13-14 cycles.

What's the possible reason for the missing cycle? Is there any way to improve the system structure so that SQL database may record the situation of change of status correctly?

■ Brief Solution- Step by Step:

For the customer's application structure, the computer acts as a Modbus/TCP master to poll the I/O status from ADAM periodically. (The picture on the right-hand side.)

The problem of customer's structure is that when the DI status change between two polling intervals, the host will not know.
For example, if the polling interval is set at 500ms, and the DI initially at logic0, change between 0 and 1 for five times during the 500ms interval and finally stay at 1. The controller may only get ONE change of status.

To solve the question, we will suggest the customer take the advantage of the P2P function of ADAM-6000 and ADAM-6200 series.

With "change of state" function, besides the periodical updated I/O status, the module will automatically send out the UDP packet to the host when detecting the DI status changing from 0 to 1 or 1 to 0.

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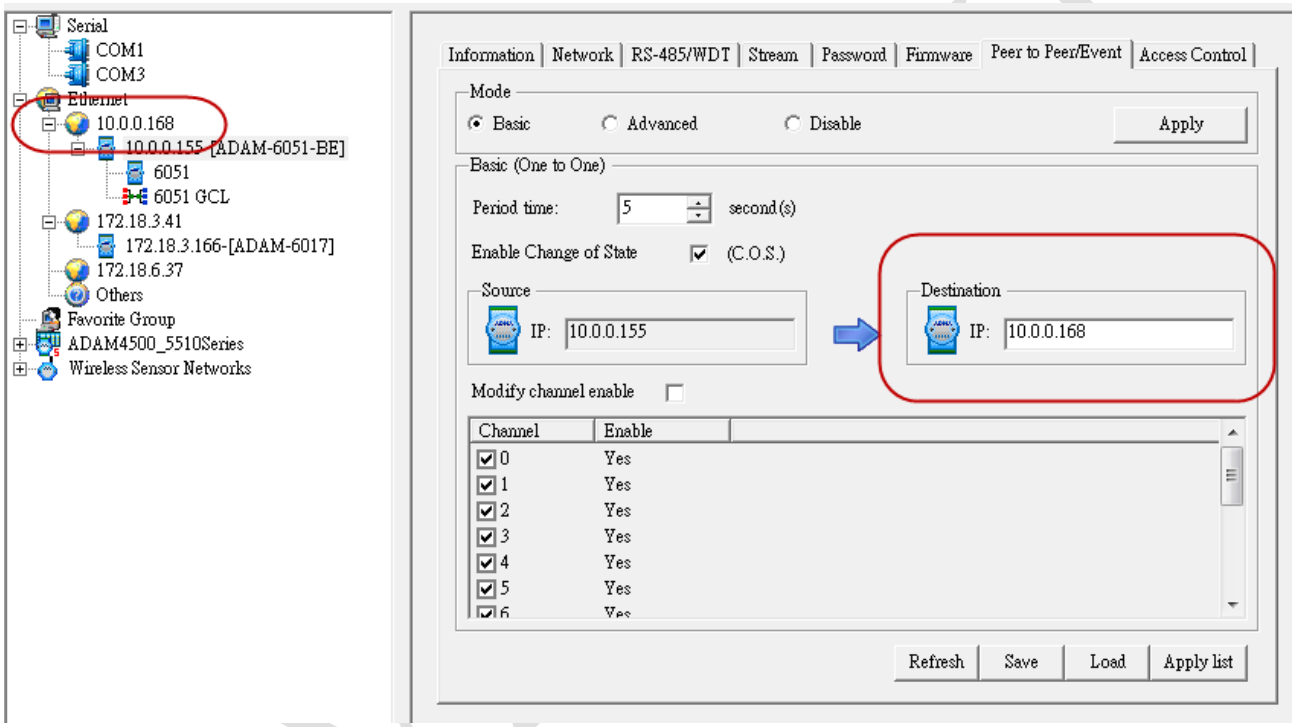
Here's the detail setting procedure:

1. Enable the P2P function in the utility.

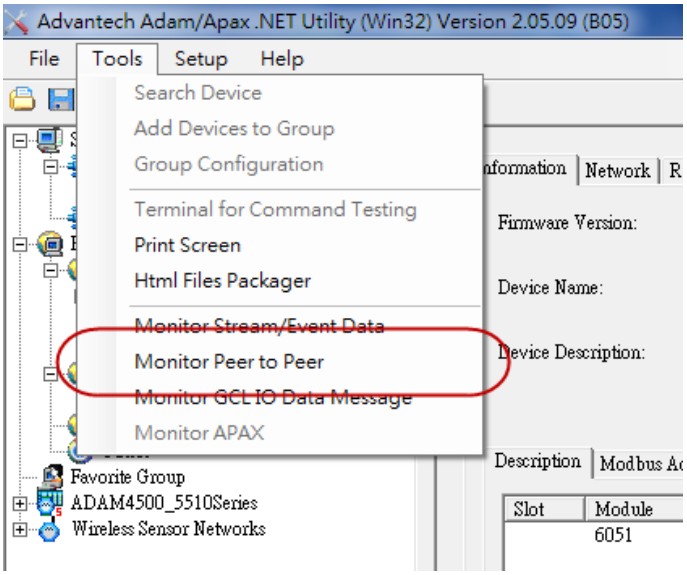
Please note that the ADAM module can't use BOTH GCL and P2P function at the same time, must disable the GCL function first to enable the P2P.

2. Select the channels and enter the IP of PC as the destination IP.

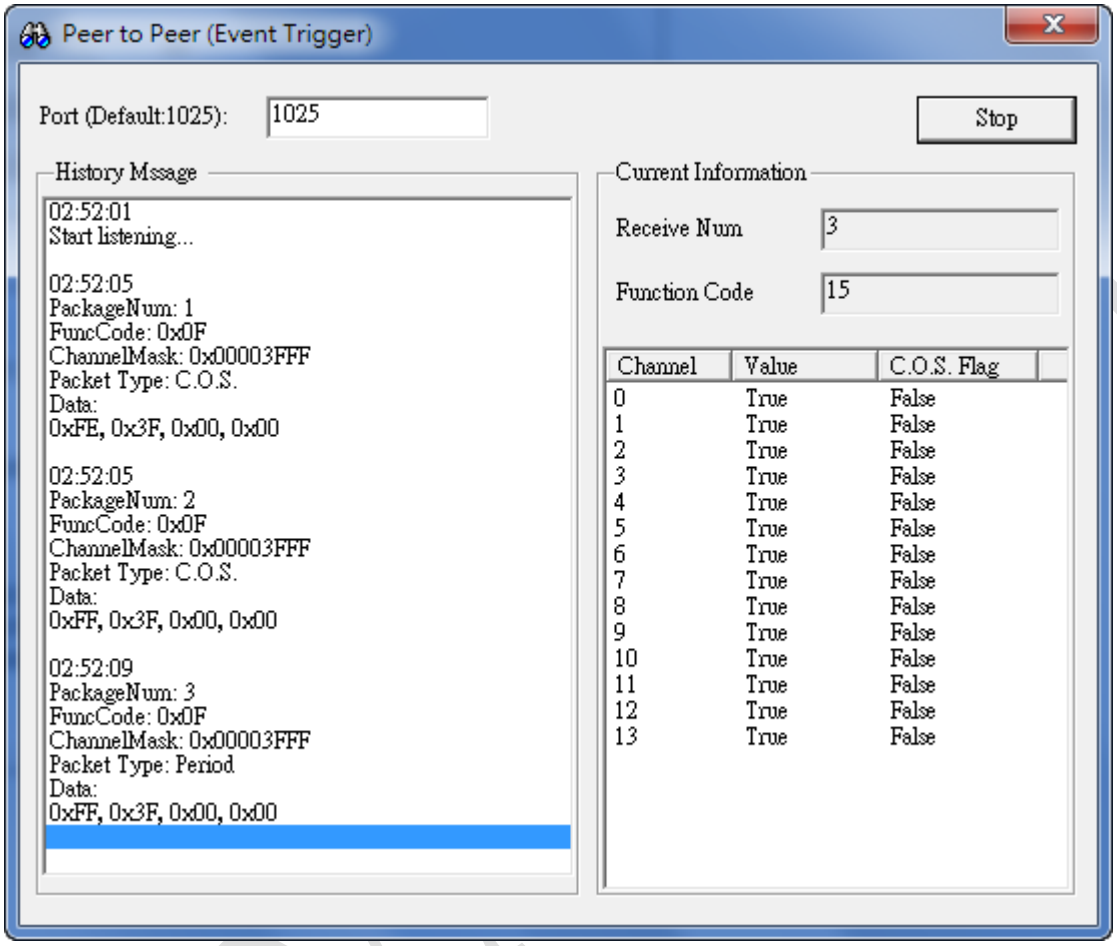


3. Test with utility.

User can use the "Monitor Peer to Peer" tool in the utility to test the result.



Like the following picture, user should be able to see two kinds of different packet; one is the period data that updated to the host while the other packet is updated during the DI change status.



User can also develop their API based on the library and sample code we provide.

The example program for P2P can be found in the following location once .NET class library is installed properly.

C:\Program Files (x86)\Advantech\AdamApax.NET Class Library\Sample Code\ADAM\Win32\CSharp\Others\P2P_UdpEvent

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Date	2015/04/13	**SR#**	1-2042266876
Category	■FAQ □SOP	**Related OS**	N/A
Abstract	ADAM-60XX_What's the difference between ADAM-60XX BE and CE version		
Keyword	ADAM-60XX, BE, CE, Change notice, Comparison table		
Related Product	ADAM-60XX		

■ **Problem Description:**

This documentation explains the difference between ADAM-60XX BE and CE version.

■ **Brief Solution - Step by Step:**

Reason of Product Change

Key component phase-out: The part, Samsung ARM 7, is no longer supplied by our vendor since 2012 and the production of ADAM-60XX-BE is thus influenced.

New Function/Feature Highlight

Many function/features enhancement are implemented to the revision of ADAM-60XX-CE, including DHCP, Group Configuration, User-defined Modbus Address, Rest to Default, and HTML 5-based Web Server.

User-defined Modbus Address

In order to provide a more flexible and scalable way in deploying ADAM modules, in the revision of ADAM-6000 module the Modbus address setting can be configurable by users. There're two kinds of Modbus address section (0X and 4X). For both address sections, users can configure the Modbus address of specified I/O functions to fit their applications. For example, the below screenshot is Modbus address setting page of a DI/O module.

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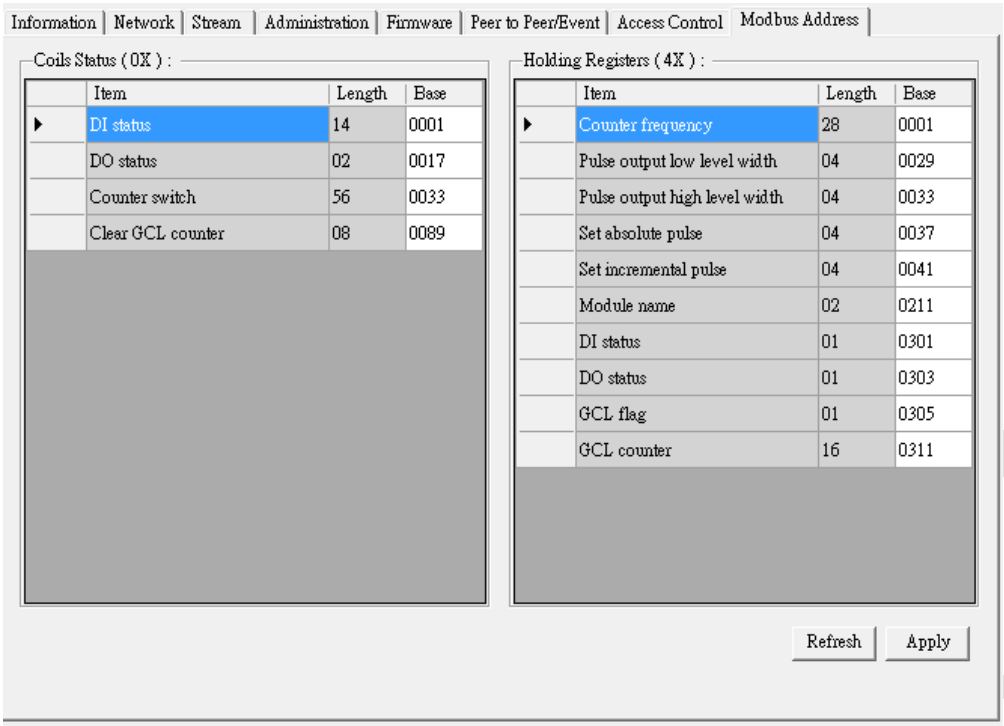
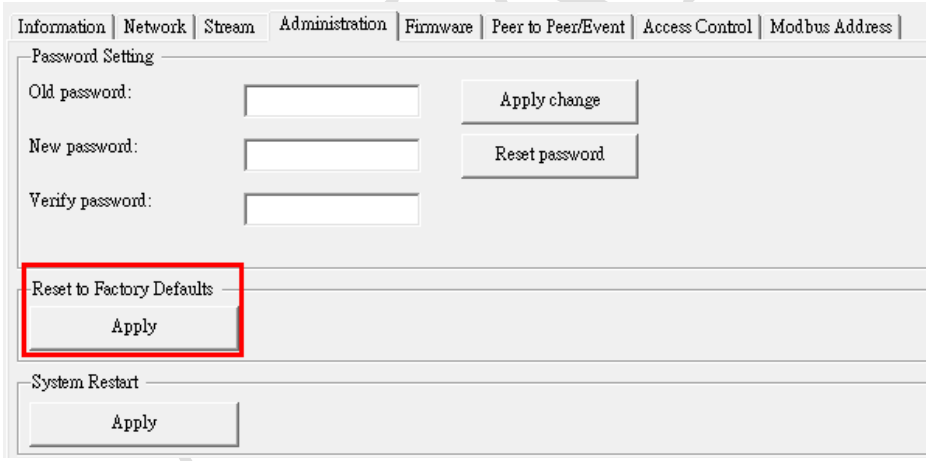


Reset to Factory Default

Users can clear all the configuration and settings of the ADAM-6000 module to its factory default in the ADAM.Net Utility. It helps when an ADAM module is re-used for a new project after being configured in the past.



HTML 5 Web Server*

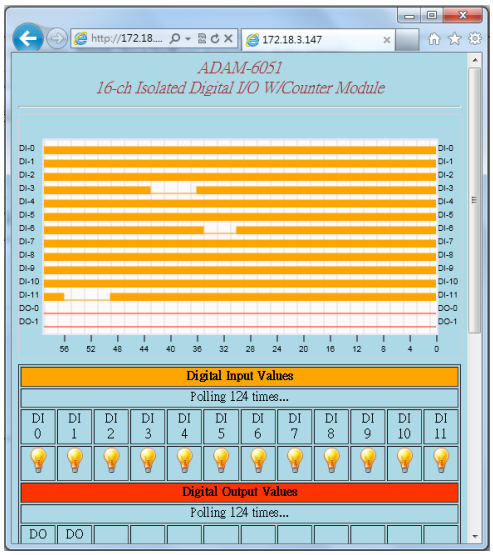
The revisions of ADAM-6000 integrates the latest Web language (HTML 5) and Web-based software style (REST) with basic authentication for users to remotely acquire I/O data in any Web service of smart device without routing from SCADA system, for example, user can use Web browser of smart phone/pad to remotely access I/O module via HTTP. The steps to do that are

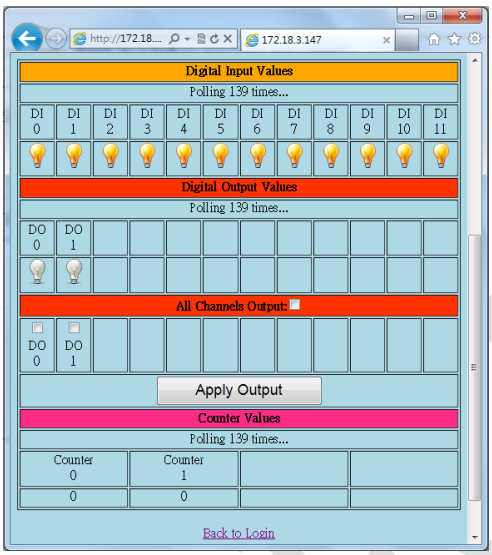
1) Connect PC/smart phone/pad to the network where the ADAM-6000 is.

2) Open a web browser and key-in ADAM-6000's IP as direction

3) Log in and get access to the I/O on ADAM-6000 module (default user name: root, password: 00000000)

And the web server run on a smart phone is shown below:





Furthermore, the default web server can be exported in the ADAM.Net Utility and further modified by editing REST access instructions.

*Note: To be consistent with its previous version, the default web server on ADAM-60XX-CE is not HTML 5 based one. Users can download the latest web server (.html file) on its product page and import it to ADAM-60XX module.

Group Configuration

In certain application scenarios, it's necessary to set multiple modules with the same settings for doing the same tasks on different sites. Users have to set configurations of module one after another before on-site deployment. During maintenance, it also requires repetitive effort to carry out firmware updates for multiple modules. The revision of ADAM-6000 is equipped with Group Configuration function which allows users to configure multiple modules at the same time. The configuration file can be exported and download in the ADAM.Net utility and it includes settings of *Device Information*, *General Information*, *P2P & Streaming*, *GCL Setting* and *Modbus Address XML file*. The installation time for a system with many ADAM modules can be greatly. Also, the module firmware file and HTML web server file can deploy to multiple modules at the same time.

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Comparison Table

Besides covering ADAM-60XX-BE's functions, ADAM-60XX-CE is designed to provide more intelligence and features for users. The main function differences are listed in the following comparison table:

	ADAM-60XX-BE	**ADAM-60XX-CE**
DHCP*	Not supported	Supported
Peer-to-peer	Supported	Supported
GCL (Graphic Condition Logic)	Supported	Supported
User-defined Modbus Address*	Not supported	Supported
Reset to Factory Default*	Not supported	Supported
HTML 5 Web Server*	Not Supported	Supported
Group Configuration*	Not supported	Supported

* These functions can only be operated in the updated ADAM.Net Utility which will be explained in the *Operation Notice* session.

Operation Notice

In the hardware point of view, the operations of ADAM-60XX-BE and ADAM-60XX-CE are the same, as they share the same I/O connector with identical pin assignments.

In the software point of view, the firmware of ADAM-60XX-BE and ADAM-60XX-CE are different and they are not exchangeable as they run in different hardware structure. By checking the firmware versions in the ADAM.Net Utility, you can tell the module versions.

Model Name	**Firmware Version**
ADAM-60XX-BE	Lower than V5.00
ADAM-60XX-CE	V5.00 or higher

An updated ADAM.Net Utility is also provided to facilitate new functions ADAM-60XX-CE provides. To be able to use all the functions of ADAM-60XX-CE, please install ADAM.Net Utility with version higher than V2.05.05. If an old version ADAM.Net Utility is installed in the platform, please remove it first and then install the newer version to make sure a complete installation. The newer version Utility (V2.05.05 or higher) can support both ADAM-60XX-BE and ADAM-60XX-CE.

The latest version of firmware and ADAM.Net Utility for ADAM-60XX can always be downloaded in its product page.

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Date	2016/06/27	SR#	1-2495023181
Category	■FAQ □SOP	Related OS	N/A
Abstract	ADAM-60XX & ADAM-62XX, How does Utility to list ADAM modules?		
Keyword	IP, MAC Address, Utility		
Related Product	ADAM-6000, ADAM-6200		

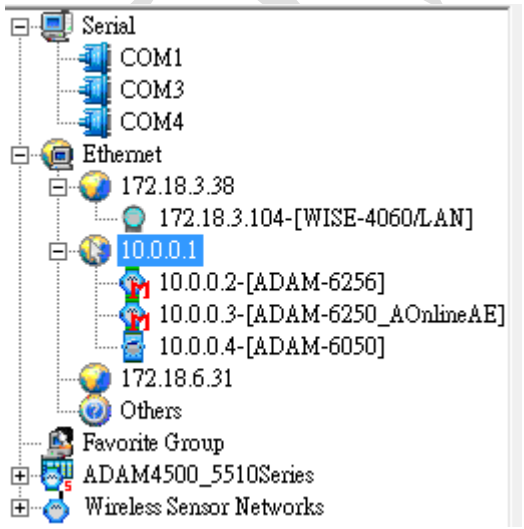
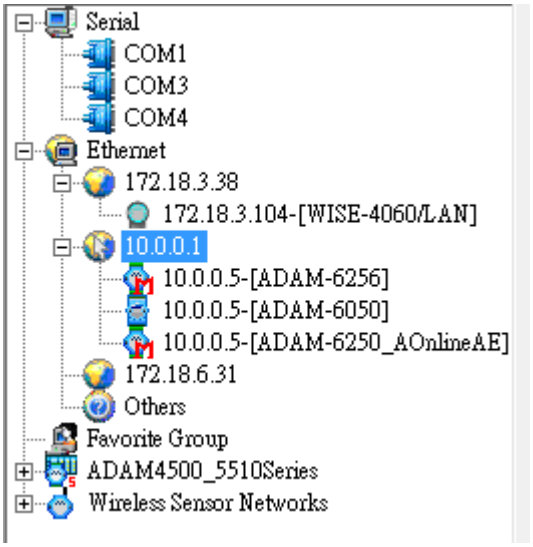
■ Problem Description:

This document shows how does Utility to list ADAM modules?

■ Answer:

When Utility search the Ethernet module (ADAM-6000, ADAM-6200 series), it lists the module in the left side. What's the order of them? If IPs of each module is different, Utility can list them by the descending order. If the IP is the same, Utility lists them refer to Mac Addressing by descending order. The following test shows that:

Module: ADAM-6256, Mac Address: 00-D0-C9-F3-DA-6D
Module: ADAM-6250, Mac Address: 00-D0-C9-F5-B3-17
Module: ADAM-6050, Mac Address: 00-D0-C9-F4-B1-9F

IP is different.	IP is the same.
	

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