How to send/receive a message from ISaGRAF PAC to remote PCs or PACs via Ethernet UDP communication?

Download FAQ-029 Demo.

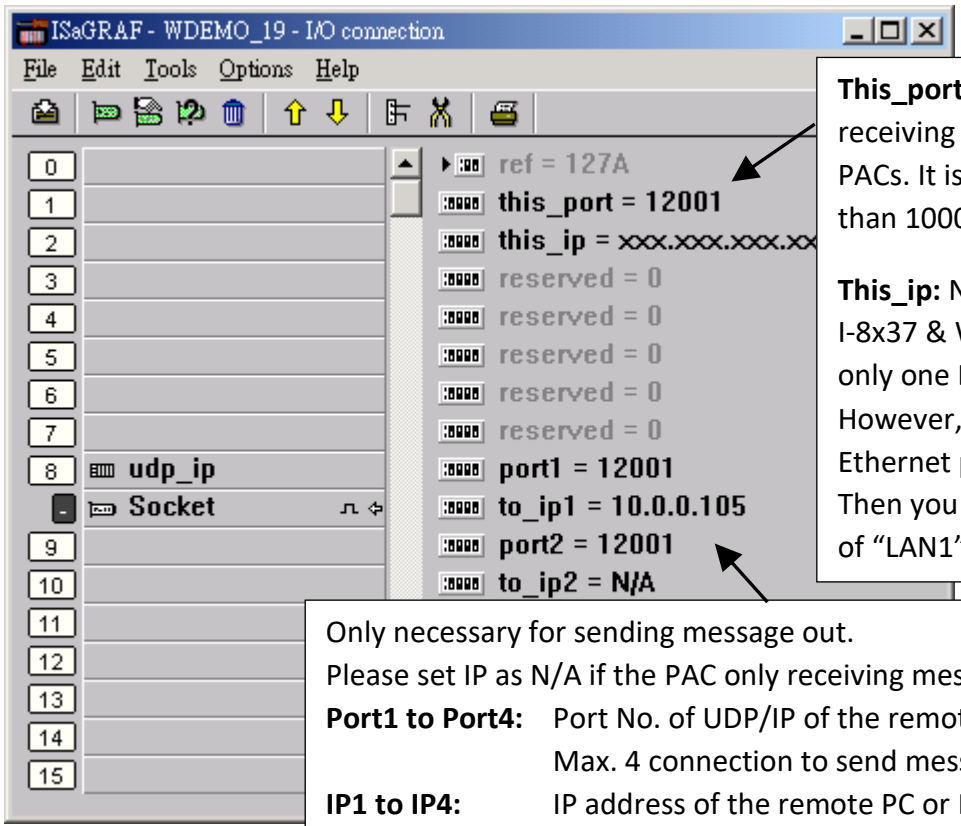
Note: When using this function in W-8x47/8x46, you may choose connecting Ethernet cable at "LAN1" or "LAN2" port. Please use "NS-205" or "NS-208" Ethernet switch for W-8x47/8x46. (Refer to Appendix F to Enable LAN2)

Wincon supports receiving and sending message via UDP protocol by Ethernet communication. While I-8x37 and I-7188EG supports only receiving message via UDP protocol. Please make sure your PAC driver version.

I-7188EG: driver 2.08 or later I-8437/8337: driver 3.10 or later
W-8xx7/8xx6 :driver ver. 3.24 or later

Note:
1. I-7188EG & I-8437/8837 support only "udp_ip" & "udp_recv".
2. Wincon-8xx6 and Wincon-8xx7 support all of "udp_ip", "udp_recv" & "udp_send".

UDP_IP:
Please connect "udp_ip" in the ISaGRAF I/O connection window first before using "udp_recv" and "udp_send" functions.



This_port: Port No. of UDP/IP used for receiving message from remote PC or PACs. It is better to use value larger than 1000. Default is 12001.

This_ip: Not necessary for I-7188EG, I-8x37 & W-8x37 since these PACs have only one Ethernet port (one IP). However, for Wincon-8x47, there is two Ethernet port (two IP) in the PAC. Then you need to specify the correct IP of "LAN1" or "LAN2" port.

Only necessary for sending message out.
Please set IP as N/A if the PAC only receiving message (no sending).

Port1 to Port4: Port No. of UDP/IP of the remote PCs and PACs.
Max. 4 connection to send message to remote PCs or PACs.

IP1 to IP4: IP address of the remote PC or PAC.
If the sending connection is not used, please set as N/A.

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UDP_Recv:
To receive message from remote PCs or PACs, please use “udp_recv” function.

For example:

```
(* test if message is coming from UDP *)
(* Msg1 is declared as Message variable *)
(* if return = '' (empty message), that means no message coming *)
Msg1 := udp_recv( ) ;
```

Note:
The receiving buffer size for Wincon is 8192 bytes - include one extra message end: 1 byte in each message. While for I-7188EG & I-8437/8837 is 2048 bytes.
If the receiving buffer is full, the oldest received message will be overwritten.

UDP_Send:
To send message to remote PCs or PACs, please use “udp_send” function.

For example:

```
(* TMP is declared as Internal / Boolean *)
(* 1st parameter: To which connection - defined in IO connection "udp_ip", can be 1 to 4 *)
(* 2nd parameter: the message to send out *)
(* Return True:Ok,    False: sending buffer is full or connection not defined well in “udp_ip” *)
TMP := udp_send(1, ‘Alarm1’ );
```

Note:
1. The sending buffer size for Wincon is 2048 bytes - include extra message end: 1 byte. That means max. 2048 bytes in one PLC scan can be send to remote IP.
2. Please do not send lots of bytes in one PLC scan cycle too frequent. The PAC driver will actually send only one message out each PLC scan when there is message in the sending buffer. For example, if there is 100 messages in the sending buffer, the PAC will send over these 100 message in 100 PLC scan cycles.
3. I-7188EG & I-8437/8837 support only “udp_ip” & “udp_recv”

Example:
If you can not find “udp_ip” , “udp_recv” and “udp_send” in ISaGRAF, please visit https://www.icpdas.com/en/download/show.php?num=368&nation=US&kind1=&model=&kw=isagraf to download “io_lib.zip”.

Test Utility: there is a useful utility “udp.exe” can be used on PC to receive message coming from UDP IP. Please run it in command shell.

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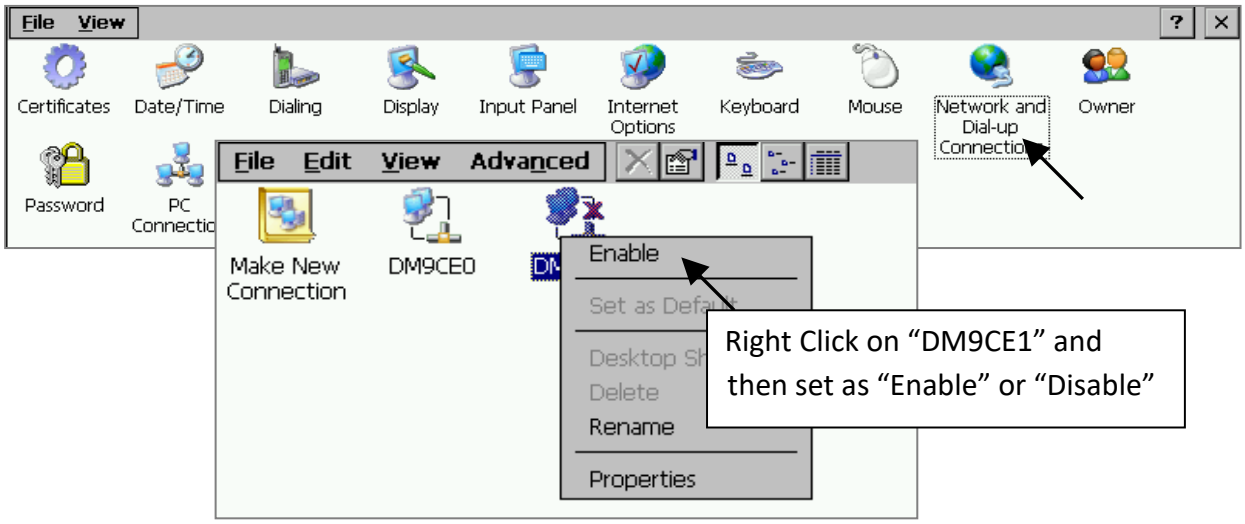
● Appendix F: How to Enable/Disable W-8x47's LAN2

Important:

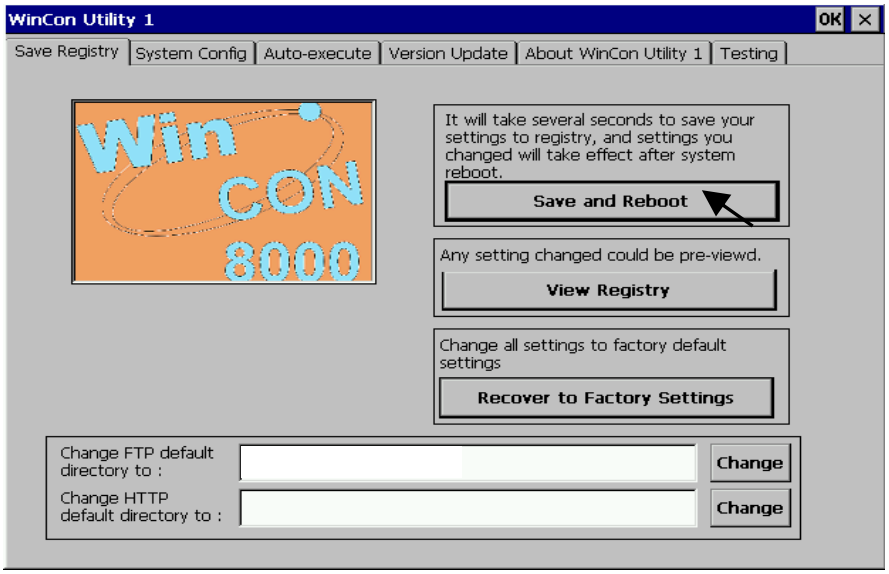
1. Please always set LAN2 as disabled if not using it.
2. Please always set a fixed IP to LAN1 (or LAN2 if it is enabled).

The default setting of LAN2 port of W-8047/8347/8747 & W-8046/8346/8746 is disabled. User must enable it before using LAN2 port.

Please open "Start" – "Setting" - "Control Panel" and then click on "Network and Dual-up Connections" to set as LAN2: DM9CE1 Enable or Disable



Then run "Start" – "Programs" – "Wincon Utility", click "Save and Reboot" to save the setting.



Click the link for more ISaGRAF FAQ:
http://www.icpdas.com/en/faq/index.php?kind=280#751

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