

Below is an example of logic to initiate a “software” reset of the 2572 module from the PLC. A reset of the 2572 is initiated when the Reset Bit (WY3.1) and all four Abort Trigger Bits (WY4.4, WY4.8, WY4.12, and WY4.16) are turned ON simultaneously. An ON and OFF transition of C2 will initiate a reset of the 2572 module.



Troubleshooting Tips

Before the Network Server is started, the red ACTIVE LED will blink at a rate of about once per second. After the Network Server is successfully started, the red ACTIVE LED will remain ON steady. If the ACTIVE LED continues to blink you can use the following troubleshooting steps to determine the cause. Also, refer to [Chapter 5](#) of the *2572 Ethernet TCP/IP Communication Processor User Manual* for general troubleshooting techniques.

1. Monitor WX1 to ensure that the low byte is incrementing.

The low byte of this input word is a counter that increments from 0 to 255 when the 2572 module is operating properly. If WX1 is zero, recheck the PLC I/O configuration to ensure that the 2572 module is logged in correctly. If not, correct the I/O configuration and proceed to Step 4.

If WX1 has a value in the low byte but is not incrementing, this could indicate a module fault. If this is the case, also go to Step 4. If none of these conditions apply, proceed to Step 2.

2. Monitor the module status bits in WX2. You should display this word in either binary or hexadecimal format to observe the status of individual bits.

If the Command Error Bit (WX2.1) and the Command Busy Bit (WX2.3) are **ON** and the PLC Error Bit (WX2.2) is **OFF**, then look at the Command Error Word of the Start Network Server Command Block (V100) for an error code. If V100 contains an error code, refer to the *2572 Ethernet TCP/IP User Manual, Appendix B* and find the error code in the error code list. This list provides a description of the error and a probable cause. Correct the problem and go to Step 4.

If the Command Error Bit (WX2.1), PLC Error Bit (WX2.2), and Command Busy Bit (WX2.3) are all **ON**, this indicates that the Start Network Server Command Block may contain invalid data or the data pointer in WY5 is pointing to the wrong V memory address for the Start Network Server Command Block. Check the command block for incorrect or erroneous data and ensure that WY5 contains the correct V memory address. Make corrections, if necessary, and go to Step 4.

If no bits in WX2 are **ON**, i.e., WX2 is 0, check your ladder logic for errors or omissions. Ensure that the Status Bits, Control Bits, and Control Words used in your logic are consistent with the 2572 module login address in the I/O configuration. Correct your logic, if necessary, and go to Step 4.

If none of the above conditions apply, proceed to Step 3.

3. Ensure that the 2572 Switch Block SW2 is correctly set for PLC Start mode.

Remove power from the PLC base and remove the 2572 module. Ensure that Switch #4 of Switch Block 2 is in the **OFF** position. Reinstall the 2572 and apply power to the rack. If the ACTIVE LED continues to blink, go back to Step 1.

4. Reset the 2572 module. If the ACTIVE LED still does not stay ON steady, begin at Step 1 again to try to determine the cause.

Starting the 2572 Network Server from PLC Logic

Before the 2572 can communicate on a TCP/IP network, you must establish the network parameters. These include an **IP Address** and **Subnet Mask** for the module, a **TCP/UDP port number** for the PLC Network Server function, and, if your network contains a router, the IP Address of the **Default Router**. See [Appendix E of the 2572 Ethernet TCP/IP Communication Processor User Manual](#) for a complete description of TCP/IP address nomenclature. You may also wish to refer to the CTI application note *IP Addressing and the 2572*.

There are two methods for establishing the network parameters. One method allows you to load the information directly from data stored in the EEPROM on the 2572. The second method, which is described in this application note, allows you to use the PLC program to set the IP address and other network parameters. When you use PLC logic to set the network parameters, you can ensure that the IP address is directly associated with the PLC and not the module.

The 2572 uses the PLC V memory to store command information and the module **WX/WY** words to control execution of the commands. If you are not familiar with this interface, please refer to [Appendix D of the 2572 Ethernet TCP/IP Communication Processor User Manual](#).

2572 Dip Switch Settings for PLC Start

To start the network server from PLC logic, the 2572 module Network Startup dipswitch must be set for PLC Start mode (OFF position). The Network Startup Option is selected by switch #4 on Switch Block 2.

	ON	OFF
8		
7		
6		
5		
4		
3		
2		
1		

SW2

Switch 4	
Startup Mode	Position
PLC Start	OFF
Auto Start	ON

Physical Installation of the 2572 Module

Inserting the Module into the I/O Base

Turn off the base power supply. Hold the top and bottom of the bezel and slide the module carefully into the slot, pushing it all the way into the base. If you have inserted the module correctly, you will feel a slight increase in resistance as the module mates with the base backplane connector. Once the module is fully seated in the slot, tighten the captive screws at the top and bottom to hold the module in place. To remove the module from the I/O base, loosen the captive screws, then remove the module. Take care not to damage the connector at the back of the module when inserting or removing the module.



Power Up

Turn on the base power supply. Once the 2572 diagnostics have completed, the **ACTIVE** indicator should blink at a rate of approximately once per second to indicate that the network server has not been started.

Checking PLC Login

The 2572 module must be logged into the PLC I/O configuration and given a starting address. The 2572 logs in as a Special Function module with 2 **WX** and 6 **WY** words. To configure the PLC I/O, refer to your 505 programming application software manual. In the example below, the 2572 module is installed into Slot #1 on I/O Base #0 and will be logged in starting at address 1. Your configuration may be different.

I/O MODULE DEFINITION FOR CHANNEL ... 1 BASE 00

SLOT	I/O ADDRESS	NUMBER OF BIT AND WORD I/O				SPECIAL FUNCTION
		X	Y	WX	WY	
01	0001	00	00	02	06	YES
02	0000	00	00	00	00	NO
..
15	0000	00	00	00	00	NO
16	0000	00	00	00	00	NO

After you read the I/O base, if the numbers of the **WX** and **WY** words are the same as those shown in the example above and Special Function = YES, then the PLC can recognize the module. Change the address as required by your application and save the result. If the line is blank or erroneous, re-check the module to ensure that it is firmly seated in the I/O base slot. Generate the PLC I/O configuration chart again by reading the I/O base.

NOTE:
If you do not log the module in correctly, it will not function properly.

Start Network Server Command Block

The **Start Network Server** command is used when you want to establish the network parameters using PLC logic. The **command block** is any unused block of 16 contiguous V memory locations within the PLC memory in which the user enters information needed for command execution and network parameters to be loaded to the module. You must use a 505 Programming Application, i.e., TISOFT or SoftShop, to enter the data into the command block in V memory.

Following is an example of a Start Network Server command block. A **bold** entry is a required value. A non-bold entry is a *recommended* value, which you should use unless you have reason to do otherwise. Values for the command block entries are shown in both hexadecimal and decimal (integer) format. Values can be entered into V memory in either format. In this example, the IP address being assigned to the 2572 module is 199.184.177.207. This is determined by the values entered into V106 and V107.

Example: V106 = C7B8 (hex) where C7 (hex) = 199 (decimal)
B8 (hex) = 184 (decimal)
V107 = B1CF (hex) where B1 (hex) = 177 (decimal)
CF (hex) = 207 (decimal)

If the network had a router, the router IP address would be entered into V109 and V110 in the same way. A Subnet Mask may also be entered into V112 and V113 if your application requires a specific subnet mask. If you enter zeros in V112 and V113, the subnet mask will default to the standard for the IP address class.

Refer to the *CTI 2572 Ethernet TCP/IP User Manual, Section 2.4 Using PLC Logic to Start the Network Server* for a complete description of the command block entries.

V Memory Location	Description	Hex Value	Decimal Value
V100	Command Error Word	0000	0
V101	Command (Start Network Server)	0004	4
V102	Connection Number (19291-19298)	4B62	19298
V103	Protocol Manager Number	0023	35
V104	Startup Option Bits	0	0
V015	TCP Stale Socket Timeout in seconds (0 = default)	0000	0
V106	IP Address of this Module (High 16 bits) 199.184	C7B8	51128
V107	IP Address of this Module (Low 16 Bits) 177.207	B1CF	45519
V108	TCP/UDP Port Number	05E1	1505
V109	IP Address of Default Router (High 16 bits) (0 if no router)	0	0
V110	IP Address of Default Router (Low 16 bits) (0 if no router)	0	0
V111	Max Number of TCP Connections (0 = default = 8)	0	0
V112	Subnet Mask (High 16 bits) 255.255	FFFF	65535
V113	Subnet Mask (Low 16 bits) 255.0	FF00	65280
V114	Unused - Set to 0	0	0
V115	Unused - Set to 0	0	0

NOTE:
If parameter changes are made to the Start Network Server Command Block, the 2572 module must be reset before the changes will take effect.

Ladder Logic Example

Starting the network server from the PLC requires some ladder logic to control command processing in the 2572 module. Below is an example of ladder logic that can be used to start the network server.

In this example, the 2572 is in Slot #1 of Base #0 and has a starting address of WX1. Command Status and Control bits for Command Slot 1 (WY5) will be used for command processing. WX1.3 (Network Configure Bit) is a status bit that the 2572 turns ON to indicate that the network server has not been started. If the 2572 module in your application has a different starting WX address, you will have to adjust the WX and WY offsets in the logic accordingly. For example, if the beginning login address was WX97 then WX1 becomes WX97; WX2 becomes WX98; WY3 becomes WY99; WY4 becomes WY100, etc.

When WX1.3 turns ON, LDC1 loads WY5 with a value of 100, which is a pointer to the Start Network Server Command Block beginning at V100. The "One Shot" prevents this rung from executing more than once and producing erroneous errors. LDC2 loads a value of 0 into V100, which is the Command Error word of the Start Network Server Command Block. The Command Mode Bit (WY4.2) and the Command Trigger Bit (WY4.3) are turned ON by the ladder logic and held ON until the 2572 module turns ON the Command Busy Bit (WX2.3). When the Start Network Server command is finished, WX1.3 and WX2.3 are turned OFF if the command executed successfully. If an error is encountered during command execution, the Command Error Bit (WX2.1) will be turned ON and a command error code will be written to the command error word of the Start Network Server Command Block (V100). The Network Config Bit (WX1.3) and the Command Busy Bit (WX2.3) will remain ON in this event. The error must be corrected and the 2572 module must be reset, either by software or a power cycle, to initiate another command cycle.

