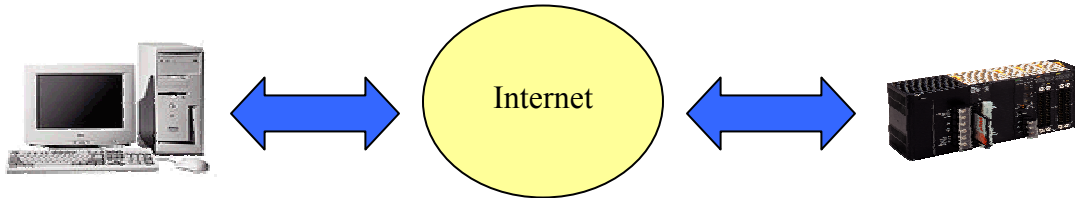

[Accessing Omron PLC via the Internet]

Summary:



In many applications it is useful to access a PLC via Ethernet over the Internet. This topology may be used for programming or monitoring the PLC using software such as CX Programmer or CX Supervisor. The Internet connection requires a very specific setup in the PLC, the router to which the PLC is connected, and the PC that is going to communicate to the PLC. In addition, a fixed IP address for the PC or the router to which the PC is attached is required. A fixed IP address for the router to which the PLC is attached is helpful, but not required. This document is intended to describe and give an example of how to establish a connection from a PC to a PLC over the Internet.

In most applications, this topology will require support from the Information Technology (IT) department in the facility where the PLC is located. Be certain to obtain the necessary support from the IT department (if applicable) prior to attempting to implement the topology described in this document.

The Products Used:

This document is applicable to Omron PLCs with the following Ethernet Modules:

CS1: CS1W-ETN01, CS1W-ENT11, CS1W-ETN21

CJ1: CJ1W-ETN11, CJ1W-ETN21, CJ1M-CPU11,12,13 ETN

CV: CV500-ETN01

Step-by-Step Procedure:

Configuration Example

'PC Side' Router:

LAN Side 192.168.0.1

WAN Side 68.82.48.33

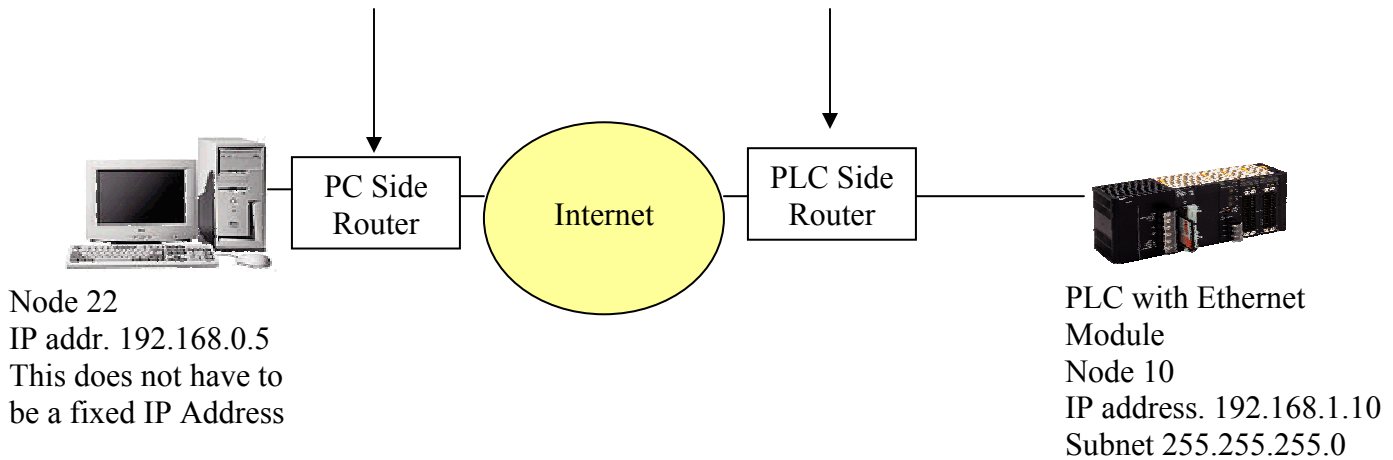
The WAN Side needs to be a fixed IP address.

'PLC Side' Router:

LAN Side 192.168.1.1

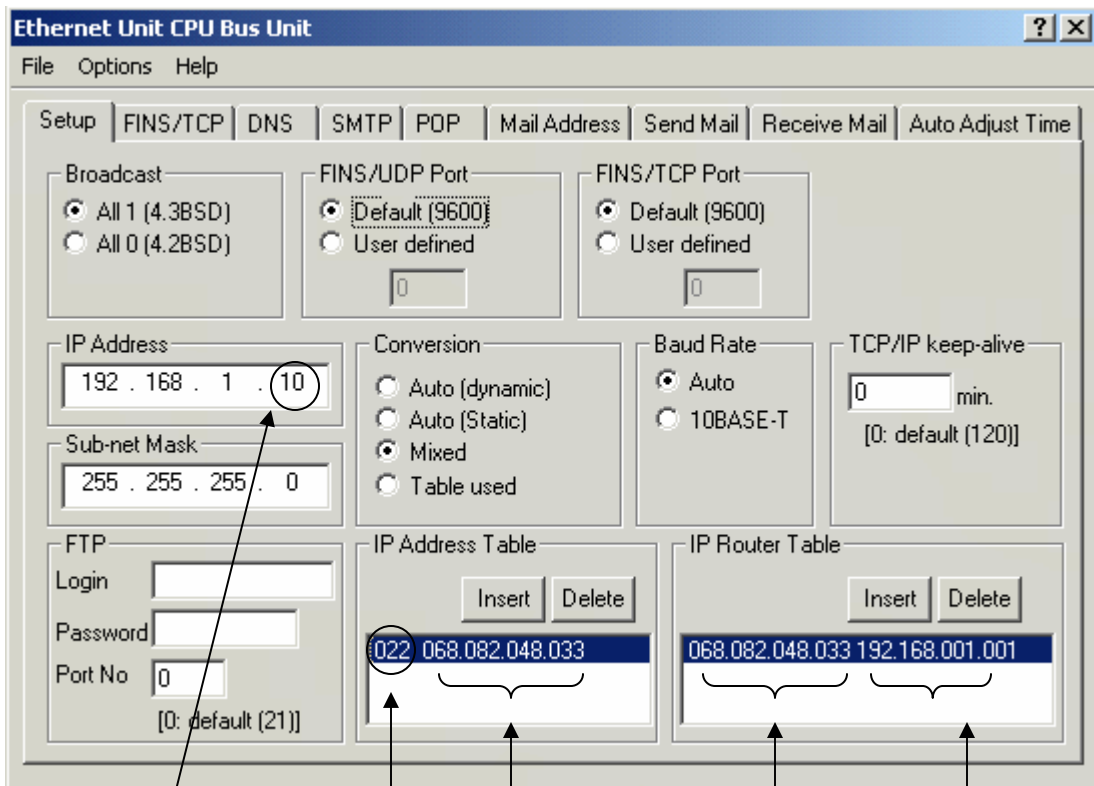
WAN Side 66.252.98.15

The WAN side does not have to be a fixed IP address, but the computer does need to know the address.



PLC Ethernet module setup

The following example is shown for a CS1W/CJ1W ETN21. A CS1W/CJ1W ETN11 or CS1W-ETN01 is similar, without many of the tabs shown here



PLC IP Address and Subnet Mask

Set the 2 rotary dials marked 'Node Number' on the front of the PLC Ethernet card to match the last octet of the IP Address. The 2-digit node number on the PLC Ethernet card is the Hexadecimal equivalent of the last octet of the IP Address. For example to match the setting of 10 shown above set the 2-digit node number on the PLC to 0A.

WAN IP Address of the 'PC Side' Router

Node Number that CX Programmer will use to connect to the PLC. This must match the 'Workstation Node Number' in CX Programmer.

LAN Side IP Address of the 'PLC Side Router'

PLC Side Router Setup

Note: The following example is shown for a Linksys Router. Not all router setup procedures are alike, but they should be functionally similar. Please consult your routers documentation for details on the setup of the IP address and the port forwarding functions.

'LAN side' of PLC router.
Set by you.

LAN IP Address:

192	.	168	.	1	.	1	(Device IP Address)
255.255.255.0							(Subnet Mask)

WAN Connection Type: Static IP

Specify WAN IP Address

66	.	252	.	98	.	15
Subnet Mask:						
255	.	255	.	255	.	248
Default Gateway Address:						
66	.	252	.	98	.	9

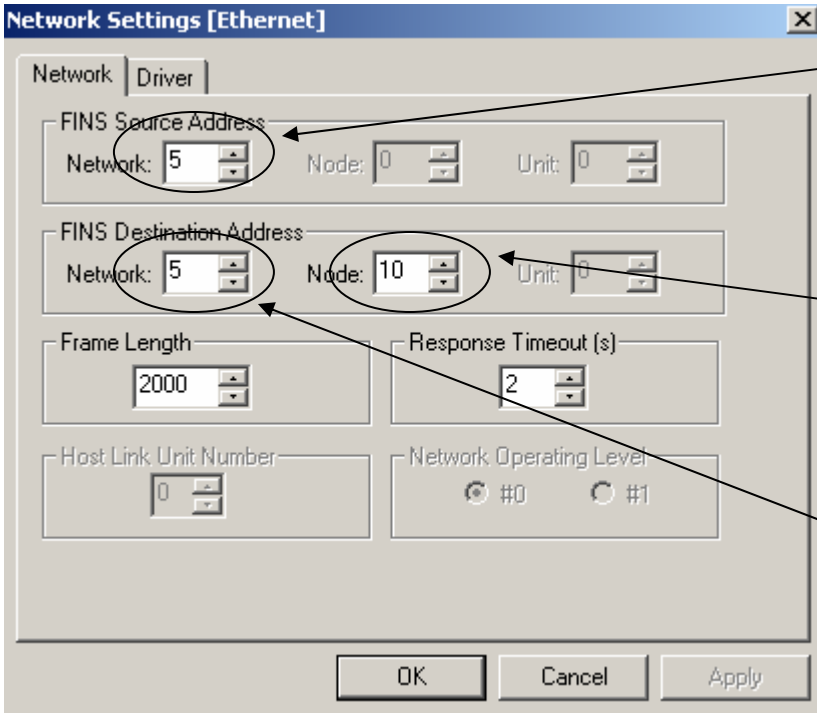
'WAN side' of PLC router.
Information provided by your Internet Service Provider (ISP) or IT department.

Port Forwarding Setup on PLC Router

Service Port Range		Protocol	IP Address
9600	~ 9600	Both	192.168.1.10
0	~ 0	Both	192.168.1.0
0	~ 0	Both	192.168.1.0
0	~ 0	Both	192.168.1.0
0	~ 0	Both	192.168.1.0
0	~ 0	Both	192.168.1.0
0	~ 0	Both	192.168.1.0
0	~ 0	Both	192.168.1.0
0	~ 0	Both	192.168.1.0
0	~ 0	Both	192.168.1.0
0	~ 0	Both	192.168.1.0

PLC IP Address and Port number

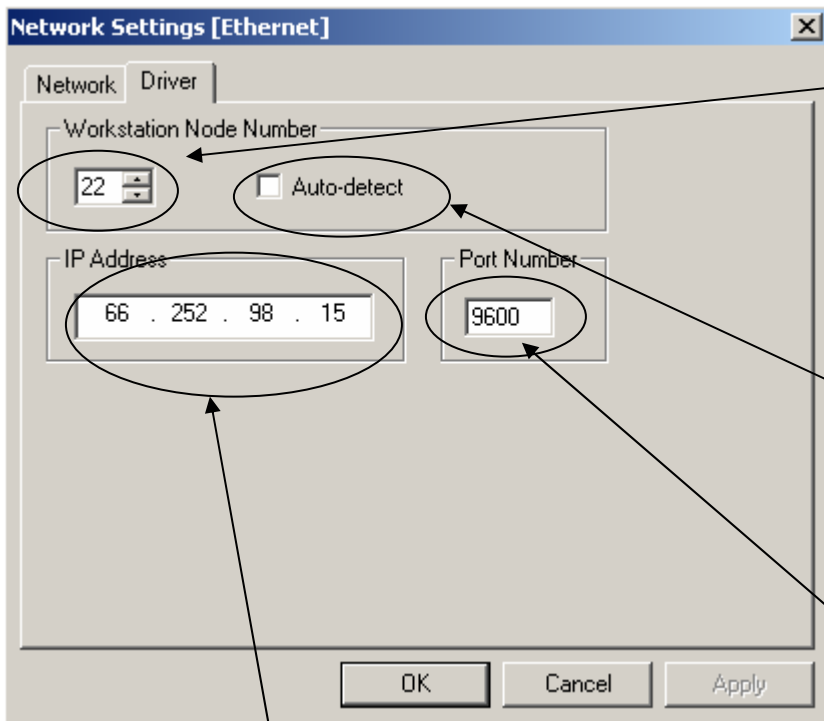
Setup of CX Programmer on remote computer



Match this setting to the FINS Network number for the Ethernet card in the PLC. This is setup in the Routing Table of the PLC using the CX Network Configuration tool.

Match this setting to the node number of the PLC. This is the rotary 'Node Number' dial on the front of the Ethernet module, and the last octet of the IP address.

Match this setting to the FINS Network number for the Ethernet card in the PLC. This is setup in the Routing Table of the PLC using the CX Network Configuration tool.



PC's FINS node number. This must be the same as the node number specified in the PLC Ethernet Card Setup in the 'IP Address Table'

Uncheck Auto-detect

This is the IP address of the WAN side of the 'PLC Side' router.

