

Remote Connection via the Internet to Yaskawa Controllers

The following controllers have Ethernet capabilities:

Controller	Programming Software	
MP2600iec		
MP2300Siec	MotionWorks IEC	
MP2310iec		
MP3000iec		
MP2200	MotionWorks	
MP2300		
SMC3010	YTerm	
SMC4000		

There are several communication options that will allow remote programming and monitoring of Yaskawa controllers via the Internet:

- 1) VPN
- 2) Windows Net-Meeting
- 3) Set Firewall on controller network and port internet traffic to external hosts

This document will focus on method #3, which involves configuring a public (internet) address to reroute traffic to an internal (intranet) address.

Set Firewall on Factory Network

A firewall protects a network from unwanted or unexpected types of communication from unknown origin.

Generally, a company or organization is allocated a group of IP address for its use on the Internet, such as website, email, ftp, etc. There must either be a free IP address for the controller, or IP traffic routing can be done exclusively by port number.



This solution consists of making an exception in the firewall routing table to reroute traffic from an external (internet) address to a private (intranet) address. This is called NAT (Network Address Translation.) You can typically choose among many options, including filtering for a specific MAC address, meaning only specific equipment is allowed to communicate with the controllers inside the protected network.





Example configuration of a firewall routing table.

ost Node - MotionCon	troller			
General Properties Topology	Host Node - G	ieneral Properties	Actual IP address of controller	
- NAT	<u>N</u> ame:	MotionController		
Advanced	IP <u>A</u> ddress:	192.168.207.52	Get address	
	<u>C</u> omment:	MP2300 by Motion Island		
	Cojor:		•	
	Products: -			
	Configure	Servers		

Host Node - MotionCon	troller	×
General Properties Topology NAT Advanced	NAT Values for Address Translation	/
	Iranslation method:	Static
	Tra <u>n</u> slate to IP Address:	63.170.19.5
	Install on Gateway:	\star All 🔽
	Apply for VPN-1 Pro/Expre	ess <u>c</u> ontrol connections

Firewall configuration blocks all traffic to the IP address except the types of services selected. In this case, TELNET (port 23) and port 10000 for both UDP and TCP are allowed. The Communication Process of MotionWorks uses UDP and TCP port 10000 when communicating to the MP controller.

SOURCE	DESTINATION	VPN	SERVICE	ACTION	TRACK
* Any		* Any Traffic	UDP UDP-10000 TCP TCP-10000 TCP telnet	💮 accept	Log



Below are some images of the MotionWorks v6.x configuration.

Ecommunication Manager - File View Tool Control Modem Help P Pig N Pig Logica PT Kind DUAL 1 Serial 2 CP-218 3 USB	Logical Port 4	Innec Modify Logging Status A ELECTRIC CORPOR Ready Ready Ready
4 CP-218 1 5 CP-218 1 6 7 8 9 10 11 12 13 14 15 16	Port Kind CP-218 TimeOut 10000 ms Dual ○ Off ○ On OK Detail Cancel	Ready Ready Image: CP-218/Ethernet(LP) Port Setting IP Addres(First) 192168.201.108 IP Addres(First) Incluster IP Addres(First) Incluster
La © Mo Ccl IIIsy IP address of	Engineering Port 10000 (256 - 65535) IP15 Image: Comparison of the state of th	

Additional notes about MotionWorks Configuration added September 19, 2011

When selecting 218IF in the communication manager, there is one option with (LP). (LP) is for 100Mbyte communication, i.e. for 218IF-02 or embedded Ethernet port.

So, in case of 218IF-01 (10Mbyte), please chose the one without (LP).

218IF(LP) [LP: Long Protocol] expands the maximum packet size up to 4096 bytes, while the regular 218IF is limited to 2048 bytes.

For some remote access via VPN, (LP) does not work if the VPN does not support longer packet sizes.

MotionWorks v7 will support a packet size selection function to help with remote connection issues.



	ddroco			
PC IP Address		Communications Setting		
0	Open Connection [5:Ethernet IP63.170.19.5]			
Cli 🖳 Cmmunications Setting				
istory	Set the communication se	etting	Connection	
pulse.YMW	Communication porce	i : Ethernet (IP:66.2.65.25)	Setting	
analog.YM₩	IP address	63 . 170 . 19 . 5	Cancel	
CACH Outbound Mer	Use the rout		<< Detail	
MHS Startup VFD Pa				
MHS Upload 20070129.YMW 2:Ethernet IP192.168.1.1				
			>	
		l to controller at ne actual controller IP		

The controller may need to be configured to use a default gateway for other internal switches in the factory.

Engineering Manager					
File Edit View Window					
CP-218 EC_MCD_06_128_OFFICIAL LINEAR DIE CUT 2006 MP2300 Offline Local 🛛 🗖 🗙					
PT#:- CPU#:- RACK#01	Slot #02 CIR#01				
Transmission Parameters Status					
CP-218 Transmission Parameters Station Setting IP Address : IP Address :					
CP-218 Connection Parameter	CP218 (Station Setting)				
CNO Local Pott Node IP Address Node Pot Connect Type Proto 01					
	OK Cancel				



