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Category	<input type="checkbox"/> FAQ <input checked="" type="checkbox"/> SOP	Related OS	Microsoft Windows7
Abstract	Set the connection between WebAccess and AB Micrologix PLC		
Keyword	AB		
Related Product	N/A		

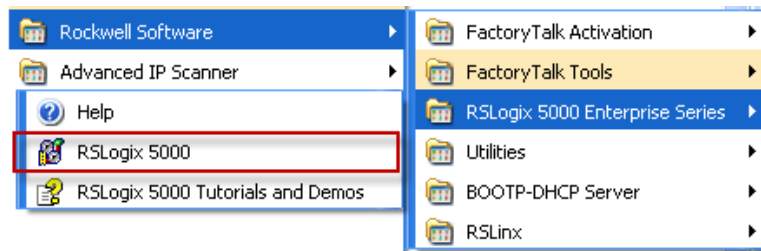
■ **Problem Description:**

The AB MLGX driver targets the Logix PLC from Allen-Bradley which means MicroLogix, CompactLogix and ControlLogix series. These PLC are connected to the SCADA node through Ethernet and use the PCCC protocol.

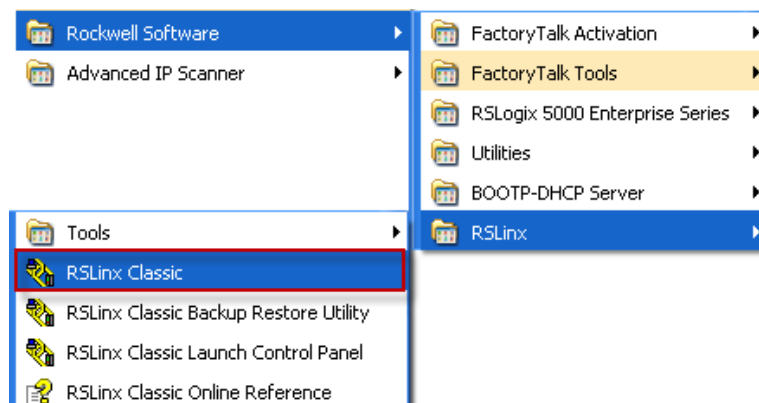
■ **Brief Solution - Step by Step:**

1.1 Module Settings

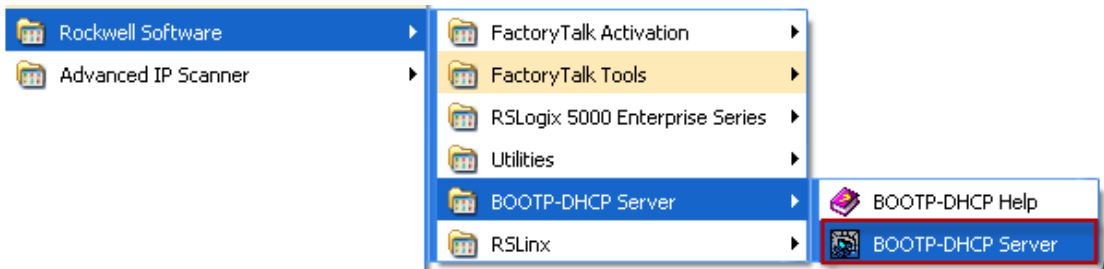
To configure your PLC you will have to install two software: RSLinx which is the Allen-Bradley connection manager and RS Logix Micro for Micrologix series or RS Logix 5000 for CompactLogix and ControlLogix series.



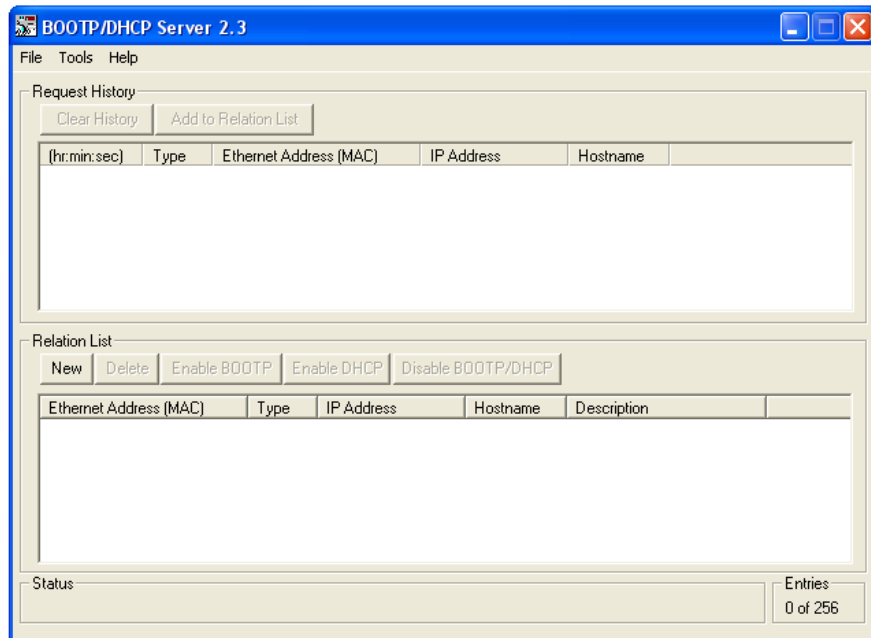
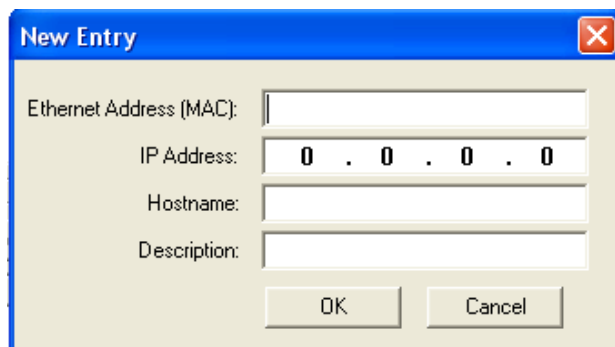
Picture1: RSLogix 5000



Picture2: RSLinx

**Picture3:** BOOTH-DHCP Server

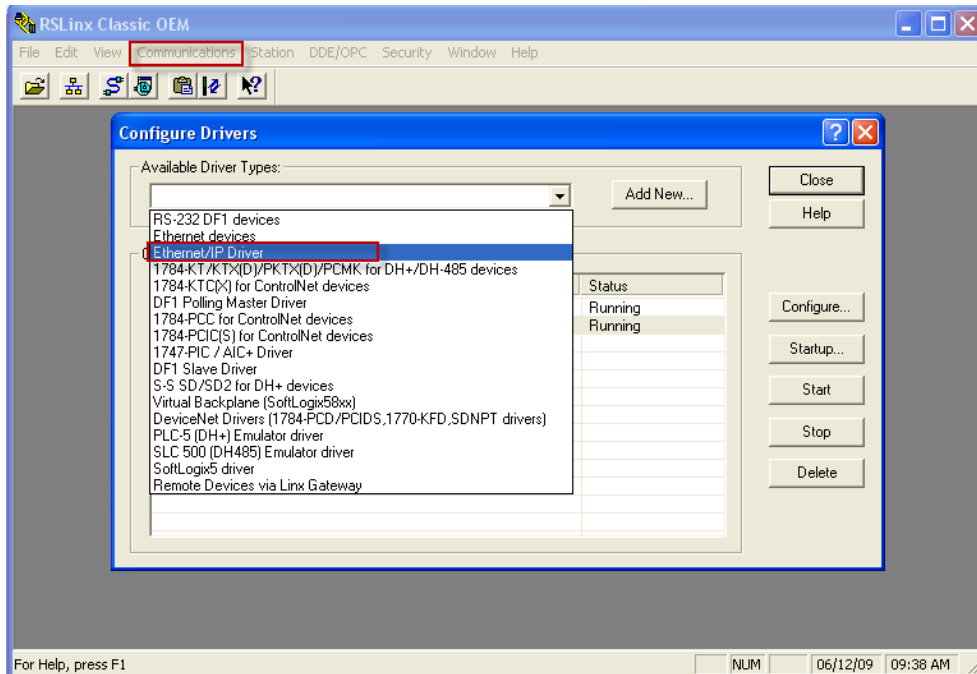
Before connecting to the module if it has not been configured you need to set the IP address. Open the BOOTP server and make a new BOOTP request (Create a new relation)

**Picture4:** BOOTH/DHCP Server**Picture5:** Setup DHCP

The MAC address of your PLC should be written on the hardware. Type the mac address and choose an IP address to set it to the PLC.

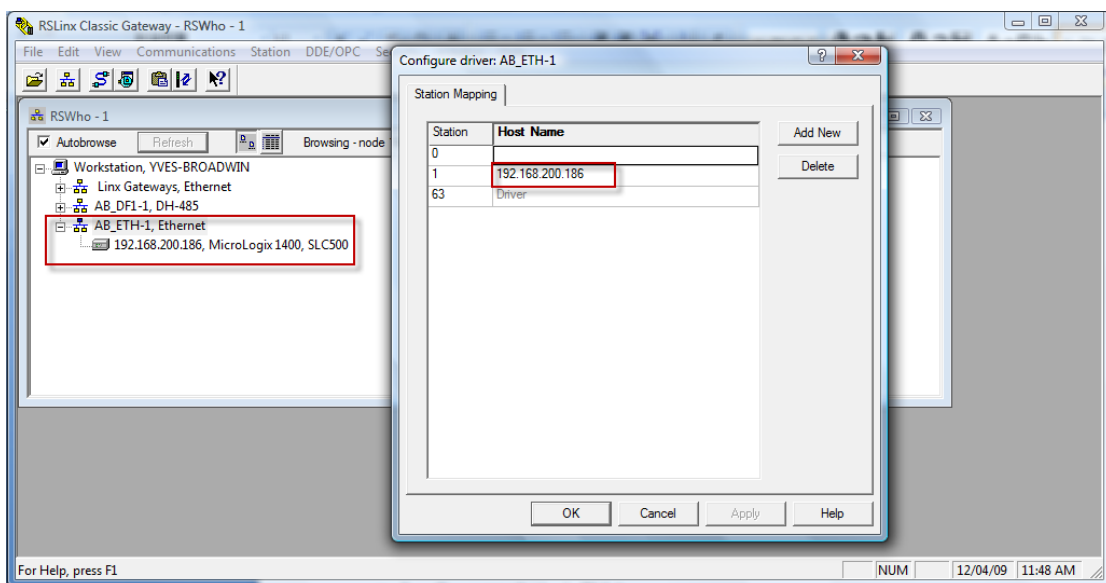
Now Open RSLinx to define the communication between the PLC and Allen-Bradley softwares.

Add a new driver of Ethernet/IP type.



Picture6: Setup Ethernet/IP Driver

Enter the IP address of the PLC.



Picture7: Setup AB_ETH-1 IP Address

The PLC should now be available in RS Logix for its configuration.

2. WebAccess Configuration

2.1 Port

The ADAM6K protocol uses a TCPIP port. Unlike Serial Ports multiple connections (and therefore multiple WebAccess TCPIP ports) can be opened on the same physical IP port.

2.1.1 Check the port number

For TCPIP ports the port number does not impact the driver. It is used to recognize the port inside WebAccess. You can choose any number below 64 but you should make sure that the port number does not correspond to a serial port on your computer (As the port number for serial connections must match the comport number in your computer).

2.1.2 WebAccess Comport Page

Open your WebAccess Configuration and select the SCADA node you want to add the device to. Then select "Add a new Comport"

All the settings in this page must match the settings in all the modules attached to the port. So all the modules attached to the same comport must have the same settings.

Update Comport		[Cancel]	Submit
Interface Name	TCPIP		
Comport Number	4		
Description	AB MLGX		
Scan time	1 <input type="radio"/> MilliSecond <input checked="" type="radio"/> Second <input type="radio"/> Minute <input type="radio"/> Hour		
TimeOut	1000 MilliSecond		
Retry count	3		
Auto Recover Time	60 Second		
Backup Port Number	0		
		[Cancel]	Submit

Picture8: WebAccess Communication Port Configuration

2.1.3 Comport Number

Choose any available comport number

2.1.4 Description

This is an optional field used for user reference.

2.1.5 Scan Time

This is the time in milliseconds to scan the Devices. This must match the ability of the device to respond. A typical scan rate is 1 per second.

If the Device cannot respond as fast as the SCAN Time entered, WebAccess will scan at a slower rate.

2.1.6 Timeout

With a 1 second scan rate, a typical Time Out = 200 Milliseconds.

Timeout is the time waited before re-sending a communications packet that did not have a reply.

Timeout specifies how long the software waits for a response to a data request, specifically to wait for a reply from one packet. A recommended value is one-fifth the scan rate, longer if the communication device is slow.

Combined with Retry count, Timeout also determines time to consider a device or port as BAD. Timeout is the time to wait since last communication packet sent without a reply. Time is in milliseconds. Slow or poor quality communications require longer timeout. The faster the communications, the shorter the timeout required. Shorter timeouts result in faster reconnects after communication failures.

2.1.7 Retry Count

A typical Retry count = 3.

Number of times to retry communications if no reply is received from a device. Combined with Timeout, also determines time to consider a device or port as BAD.

This is the number of times after the first attempt has failed that communication should be attempted before indicating a failure. (If Retry count is 3, a total of 4 failed requests have occurred before tags are marked bad). Specifically, this is how many times to send a single packet after the field device fails to respond to the first packet. After the retry count is exceeded, all the tags in the packet are marked with asterisks and the next packet of requests is sent. A reasonable value is 3 to 5 times. After this number of tries, the tags in this packet are marked as "fail to respond" (i.e. asterisks) and are disabled. In reality, increasing the number of retries hides failures on the part of the field device to respond to a request. Essentially, increasing the retries gives the field device more chances to reply.

2.1.8 Auto Recover Time

A typical Auto Recover Time = 60 Seconds.

Auto Recover Time is the time to wait before attempting to re-establish communications with a BAD device or port.

If communications to the PLC is unusually slow due to hardware, communications or network issues, you might consider increasing this value. If communications to the PLC or RTU fails frequently, you may want to decrease this number in order to have WebAccess try to re-establish communications sooner.

If communications to the PLC, RTU or device Fails (i.e. exceeds Timeout) WebAccess will wait the Auto Recover Time before trying to re-establish communications.

2.1.9 Backup Port

The Backup Port has not been tested for Adam 6K

2.2 Device

Then Go to the port page and select “Add a new device”. Select the ABMLGX device Type.

Create New Device		[Cancel]	Submit
Device Name	MicroLogix		
Description	AB MicroLogix PLC		
Unit Number	0		
Device Type	ABMLGX		
Primary	IP Address	172.18.1.25	
	Port Number	44818	
	Device Address	if other than Unit Number	
Secondary	IP Address		
	Port Number		
	Device Address		
		[Cancel]	Submit

Picture9: WebAccess Device Configuration

2.2.1 Unit Number

The Unit number is not important for TCP/IP communication as it is replaced by the IP Address. Just select any available unit number.

2.2.2 Port Number

For Logix PLC modules the port number is 44818.

2.3 Block

There are no preset blocks in the ABMLGX driver but it is possible for the user to set custom blocks if necessary.

2.4 Tag

If you do not use all the channels in the device and you want to reduce your tag count you can add the parameters one by one using “Add tag”.

Create New Tag		[Cancel]	Submit
Parameter	I	Point (discrete)	
Alarm	No Alarm		
Tag Name	I0		
Description	Input		
Scan Type	Constant Scan		
Address	I:000/00		
Conversion Code	Unsigned Integer		

Picture10: WebAccess Tag Configuration

2.4.1 Parameter

The parameter gives the type of tag you want to import. Try to select a parameter as close to the tag type as possible because it will fill the other option with the default parameters.

2.4.2 Address

The address in ABMLGX driver starts with letters representing the data type followed by the file number then “:” and the position of the tag in the file (For Example N7:1). Some types (like input and output) do not need a file number.

2.4.3 Scaling Type

If the data sent by the module is not in a human readable unit you can use the scaling to change the unit and display a more convenient unit in the node. In most cases a linear scaling type will be sufficient.

2.5 Supported Block List

There are no predefined blocks in ABPLC5 driver.

2.6 Main Parameter List

Parameter	Data Type	Description	Address format
B	Analog	Binary File	B3:0
CACC	Analog	Counter ACC	C5:0.ACC
D	Analog	BCD File	D9:0
F	Analog	Floating Number File	F8:0
L	Analog	Long File	L9:0
N	Analog	Integer File	N7:0
S	Analog	Status File	S:0
TACC	Analog	Timer ACC	T4:0.ACC
I	discrete	Input	I:000/00
O	discrete	Output	O:000/00
SD	discrete	Status file / Discrete	S:0/0

■ Reference:

N/A