

# **Siemens TCP/IP Slave Ethernet Driver Help**

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## Siemens TCP/IP Slave Ethernet Driver Help

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Help version 1.014

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#### [Address Descriptions](#)

How do I address a data location on a Siemens TCP/IP Slave Ethernet device?

#### [Error Descriptions](#)

What error messages does the Siemens TCP/IP Slave Ethernet driver produce?

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### Overview

The Siemens TCP/IP Slave Ethernet Driver provides an easy and reliable way to connect Siemens TCP/IP Slave Ethernet devices to OPC Client applications, including HMI, SCADA, Historian, MES, ERP and countless custom applications. This driver will act as a simulated Siemens PLC. It is intended for simulation of Siemens S7-300.

See Also: [Master Device Configuration](#)

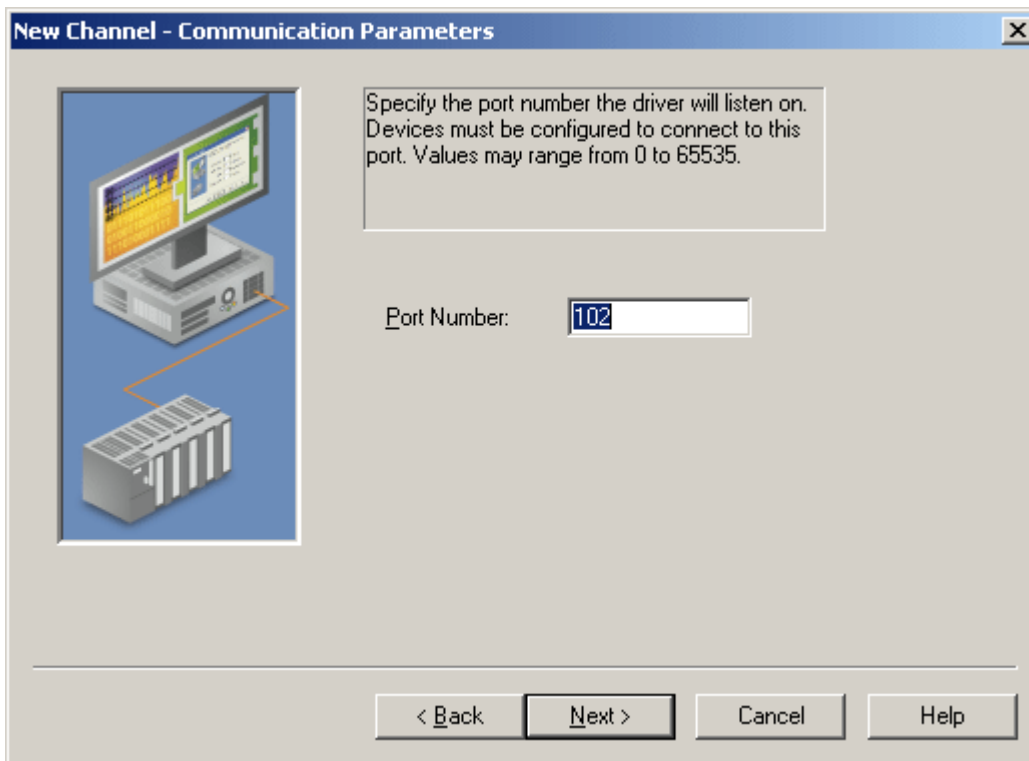
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### Channel Setup

#### Communications Parameters

##### Port Number

This parameter specifies the port number on which the driver will listen. Devices must be configured to connect to this port: messages sent to all other ports will be ignored by the driver.



Port number values may range from 0 to 65535. Non-standard values may be necessary due to routing and firewall issues. The default port for this driver is IE TCP/IP: 102 (TSAP).

**Note:** The Siemens TCP/IP Slave Ethernet Driver supports one channel.

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## Device Setup

### Supported Protocols

S7 Messaging on Industrial Ethernet (ISO 8073 Class 0) over TCP/IP. This is defined in RFC1006.

### Supported PLC

S7-300

### Maximum Number of Supported Channels and Devices

The Siemens TCP/IP Slave Ethernet Driver supports one channel and 256 virtual devices.

**Note 1:** No special libraries or hardware are required. A standard Ethernet card is all that is needed.

**Note 2:** In order to communicate with this driver, devices require specialized ladder programming.

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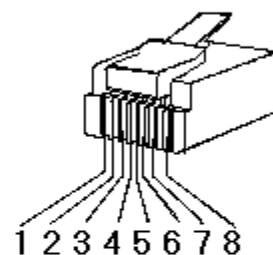
## Cable Diagrams

## Patch Cable (Straight Through)

|        |         |         |        |
|--------|---------|---------|--------|
| TD + 1 | OR/WHT  | OR/WHT  | 1 TD + |
| TD - 2 | OR      | OR      | 2 TD - |
| RD + 3 | GRN/WHT | GRN/WHT | 3 RD + |
| 4      | BLU     | BLU     | 4      |
| 5      | BLU/WHT | BLU/WHT | 5      |
| RD - 6 | GRN     | GRN     | 6 RD - |
| 7      | BRN/WHT | BRN/WHT | 7      |
| 8      | BRN     | BRN     | 8      |

RJ45 RJ45

10 BaseT



## Crossover Cable

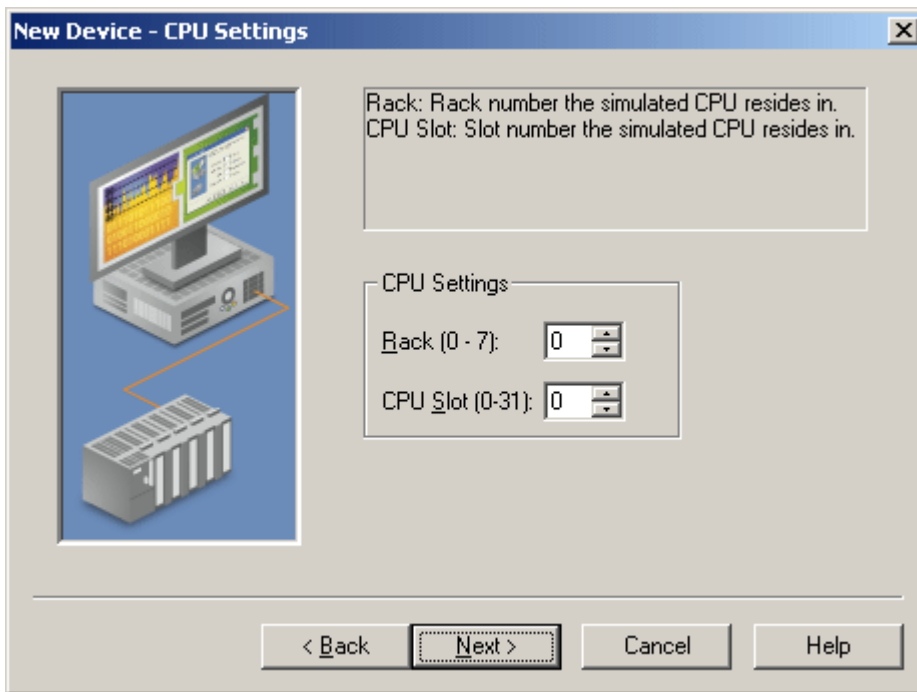
|        |         |         |        |
|--------|---------|---------|--------|
| TD + 1 | OR/WHT  | GRN/WHT | 1 TD + |
| TD - 2 | OR      | GRN     | 2 TD - |
| RD + 3 | GRN/WHT | OR/WHT  | 3 RD + |
| 4      | BLU     | BLU     | 4      |
| 5      | BLU/WHT | BLU/WHT | 5      |
| RD - 6 | GRN     | OR      | 6 RD - |
| 7      | BRN/WHT | BRN/WHT | 7      |
| 8      | BRN     | BRN     | 8      |

RJ45 RJ45

8-pin RJ45

**CPU Settings**

The CPU Settings dialog is used to specify the rack and slot values that will be associated with the device.



Descriptions of the parameters are as follows:

- **Rack:** This parameter specifies the number of the rack in which the simulated CPU of interest resides. The valid range is 0 to 7. The default setting is 0.
- **CPU Slot:** This parameter specifies the number of the slot in which the simulated CPU of interest resides. The valid range is 0 to 31. The default setting is 0.

**Note:** Multiple devices cannot have the same rack/slot value.

## Master Device Configuration

Siemens PLCs must be programmed to both issue read and write commands to this driver (and also handle returned data). For more information, refer to the Siemens PLC programming documentation. For a tutorial on how to prepare the Master Device and the unsolicited driver for communication, refer to [How to Configure Connections Using SIMATIC Manager](#).

Messages must be sent to the IP address of the selected Ethernet adapter of the host computer running the unsolicited driver. To do so, click **Channel Properties | Network Interface**. For more information concerning the port number configured for the simulated device, refer to [Channel Setup](#).

## Supported Commands

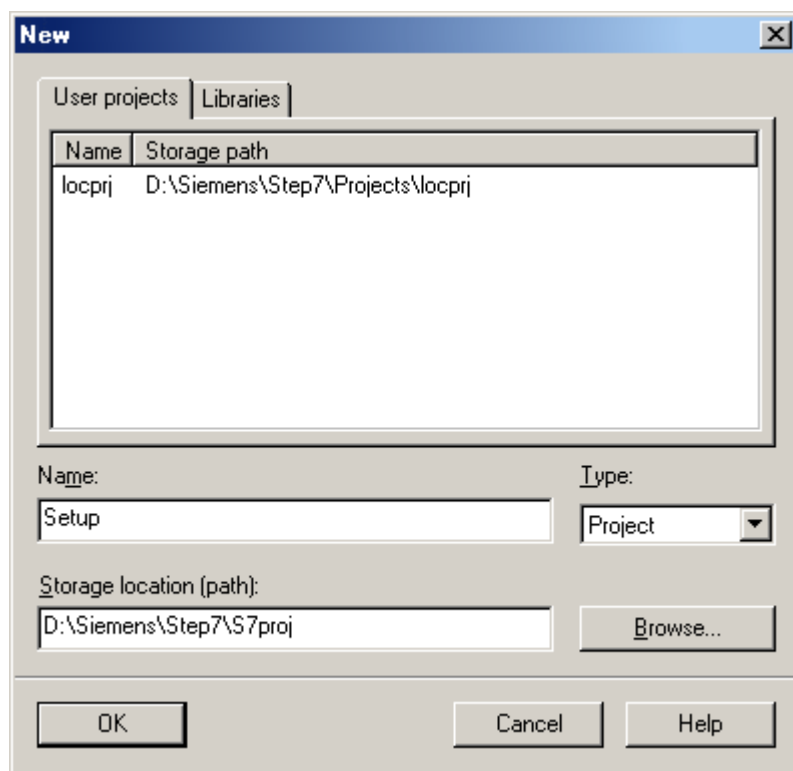
SFB14-GET  
SFB15-PUT

## How to Configure Connections Using SIMATIC Manager

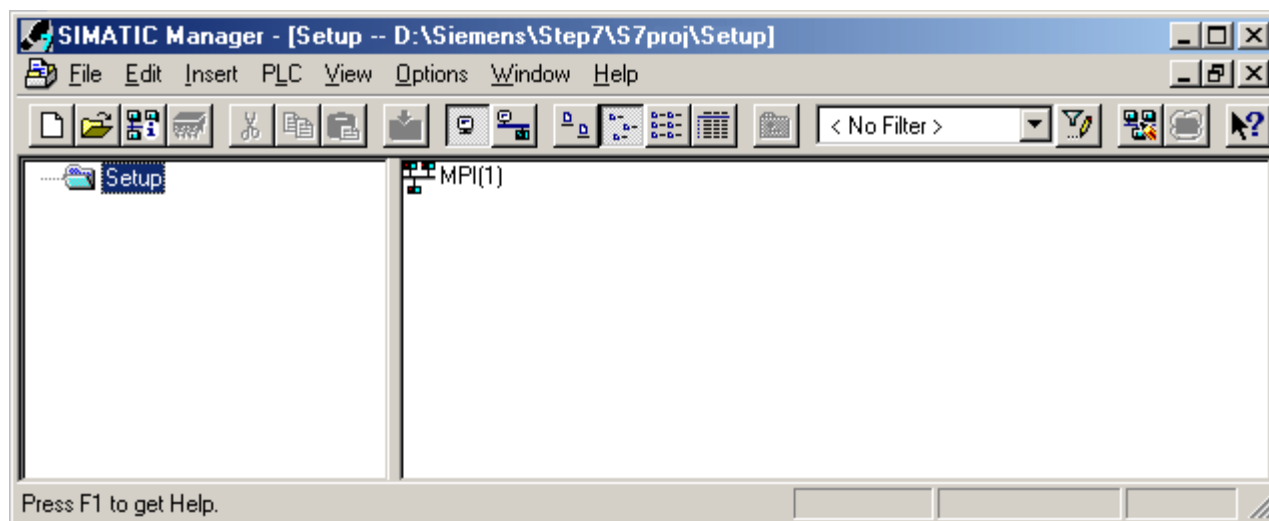
Connections are configured using the SIMATIC Manager software. The directions below discuss how to configure the Siemens TCP/IP Slave Ethernet driver to run in unsolicited mode. The steps demonstrate a basic setup using a S7-300 PLC as the active partner and the Siemens TCP/IP Slave Ethernet driver as the passive partner.

The Siemens TCP/IP Slave Ethernet driver can have a maximum of 256 devices configured, with each possessing an associated slot/rack. When the active partner (master) communicates with the passive partner (unsolicited driver) it directs its requests to a specific device in the unsolicited driver. Multiple remote partners can talk to the same device.

1. Open the SIMATIC Manager software and then create a new project as shown in the image below. In this example, the project being used is **Setup**.



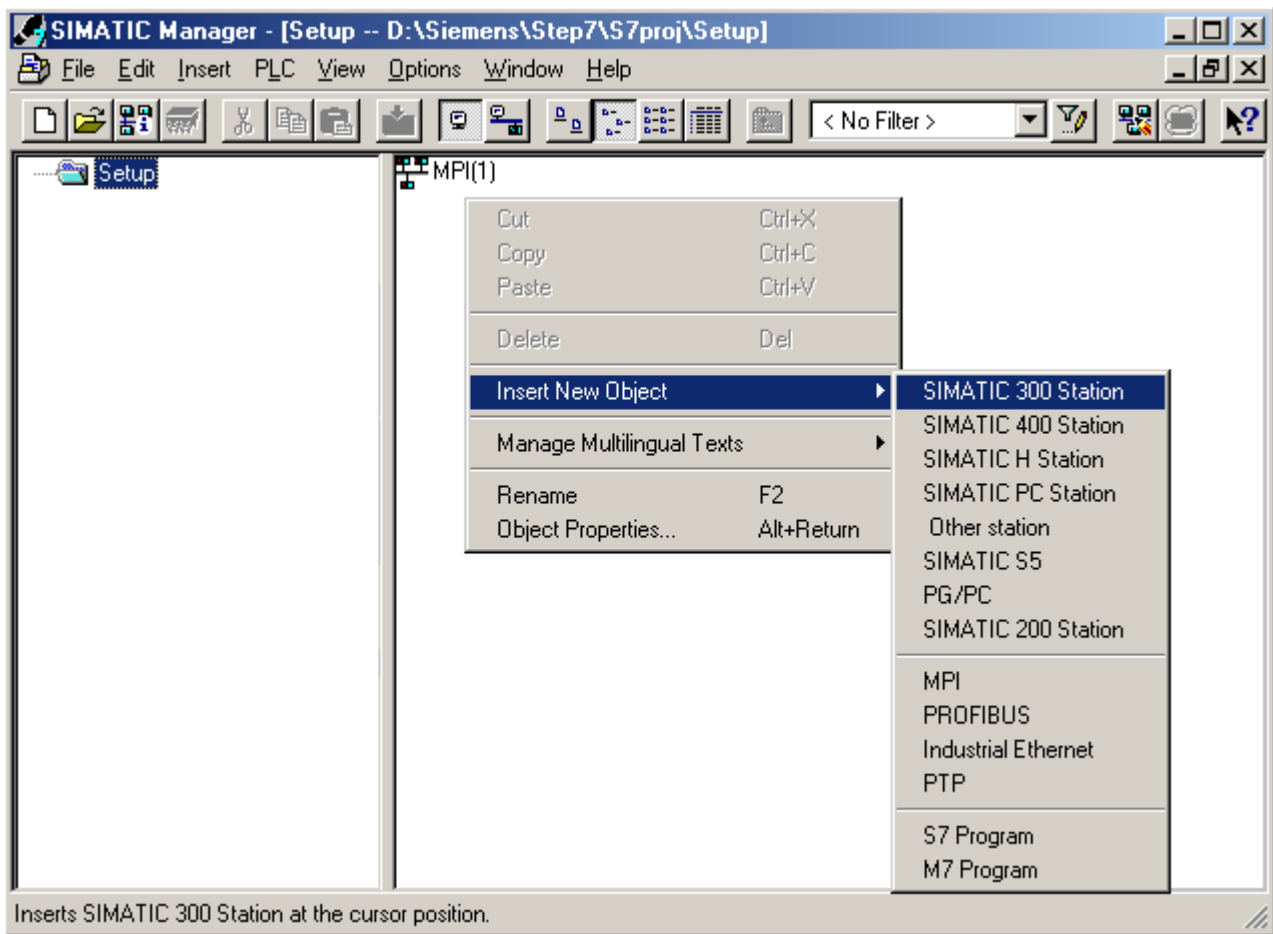
**Note:** The project's main window should appear as shown below.



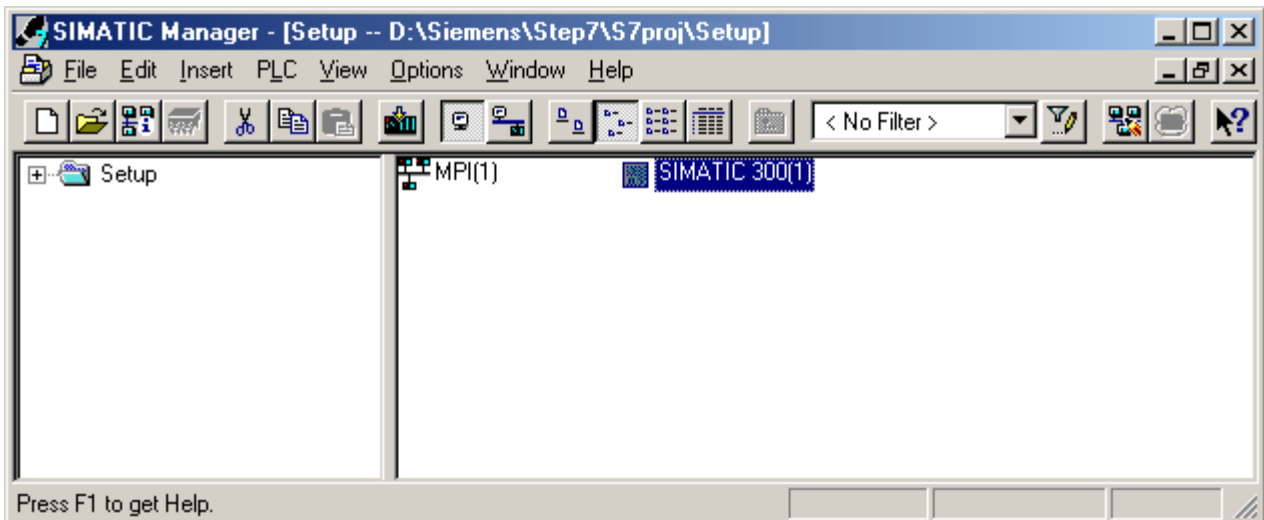
2. The two main units, **Master** and **PC Station**, must be created next. The Master unit is the active partner (or the image of the actual PC). The PC Station is the PC on which the Simatic Manager software is running.

### Creating the Master Unit

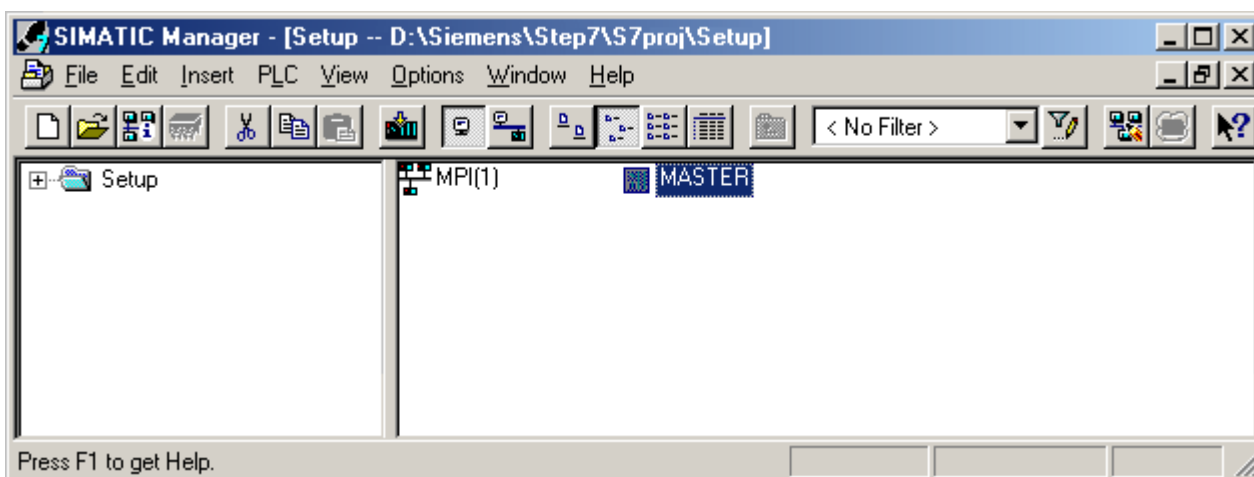
1. Right-click in the right pane of the window and then click **Insert New Object | SIMATIC 300 Station**.



**Note:** The newly created SIMATIC 300 station should appear as shown below.

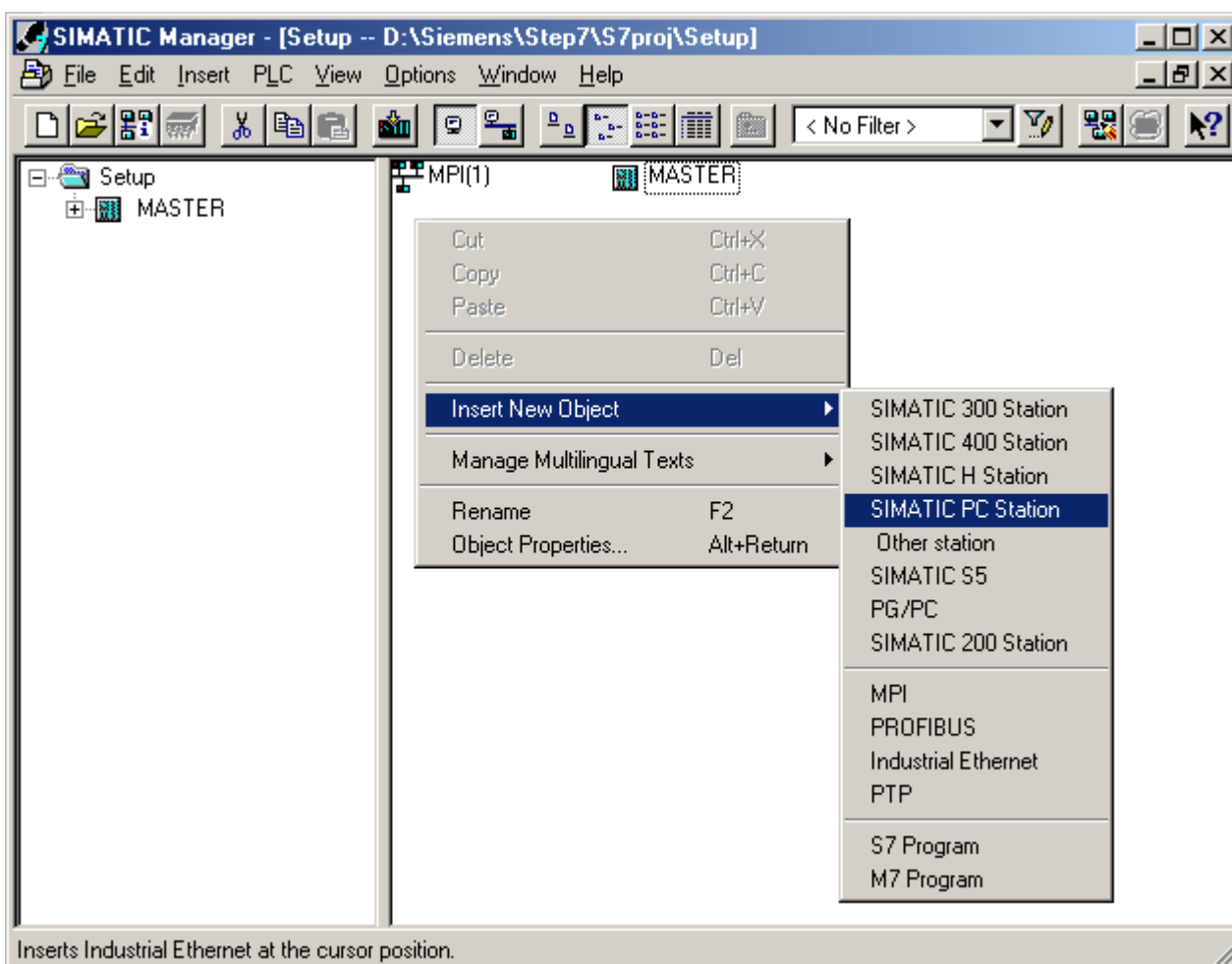


2. Name the new station **Master** because it represents the active partner of the communication.

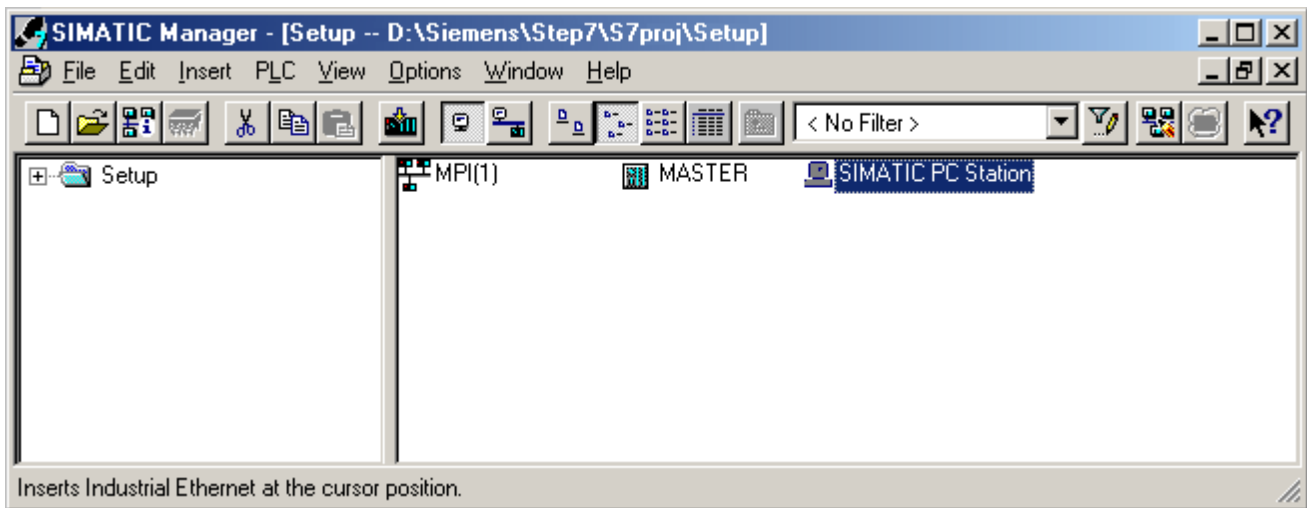


### Creating the PC Station Unit

1. Right-click in the right pane of the window and then click **Insert New Object**.
2. Next, select **SIMATIC PC Station**.



**Note:** The newly created SIMATIC PC Station should appear as shown below.

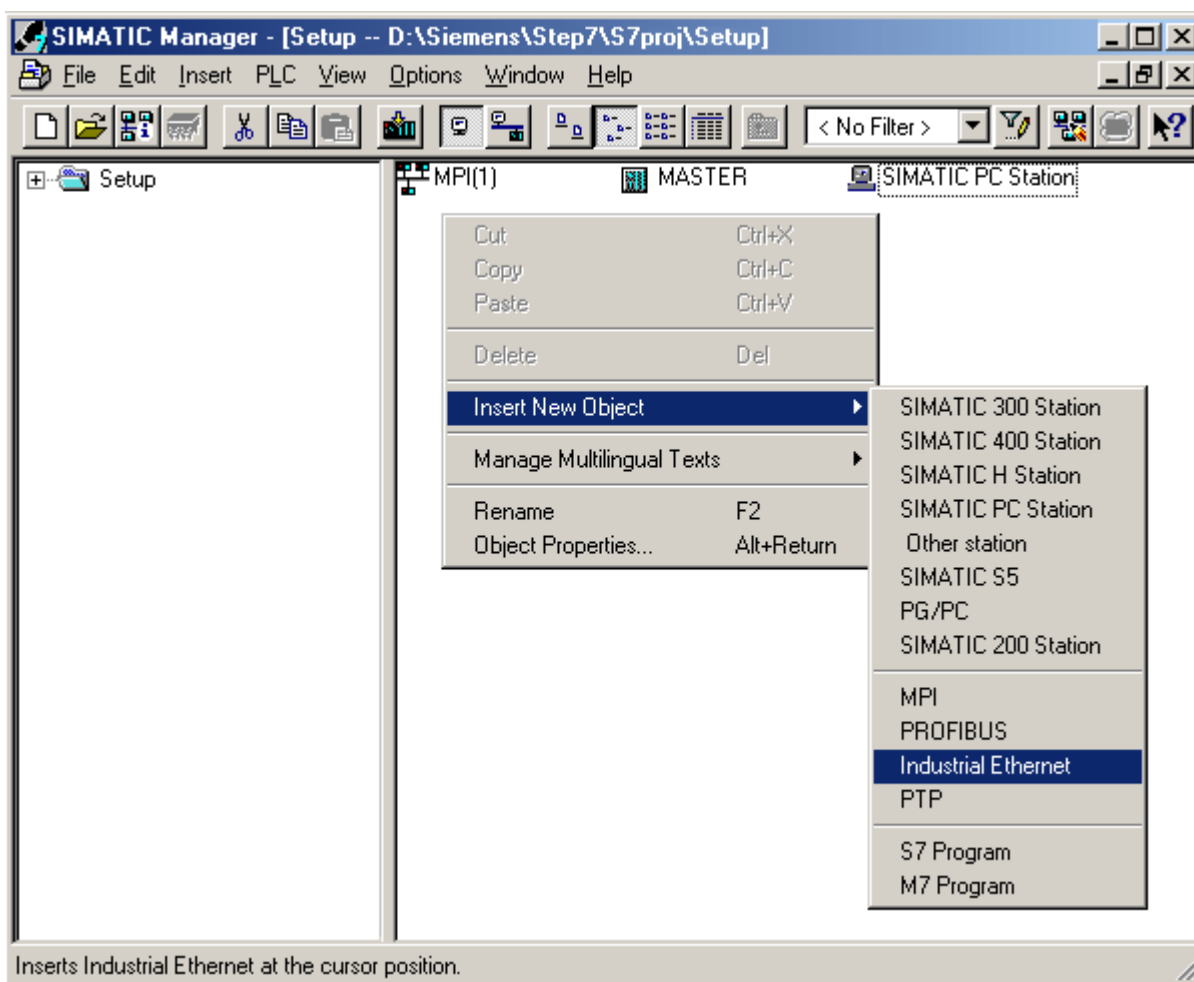


**Note:** The medium of communication between the Master and the unsolicited driver is Ethernet.

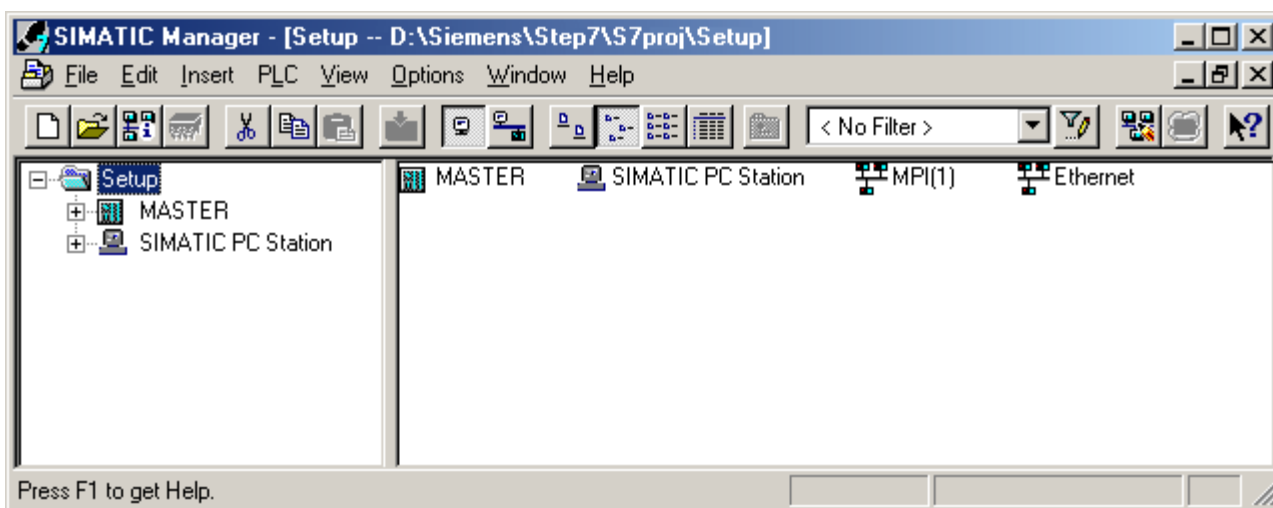
### Industrial Ethernet

Industrial Ethernet (IE) is the protocol used for communication. For more information on inserting an IE link, refer to the instructions below.

1. Right-click in the right pane of the SIMATIC Manager window and then click **Insert New Object | Industrial Ethernet**.



**Note:** The main window should now have an Ethernet icon.

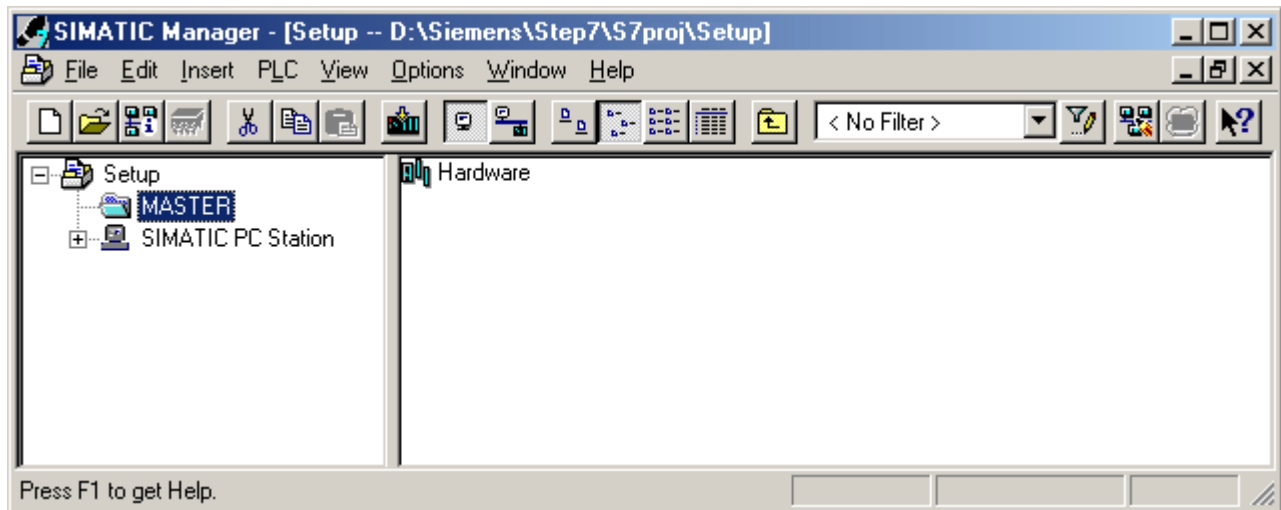


### Configuring the Master

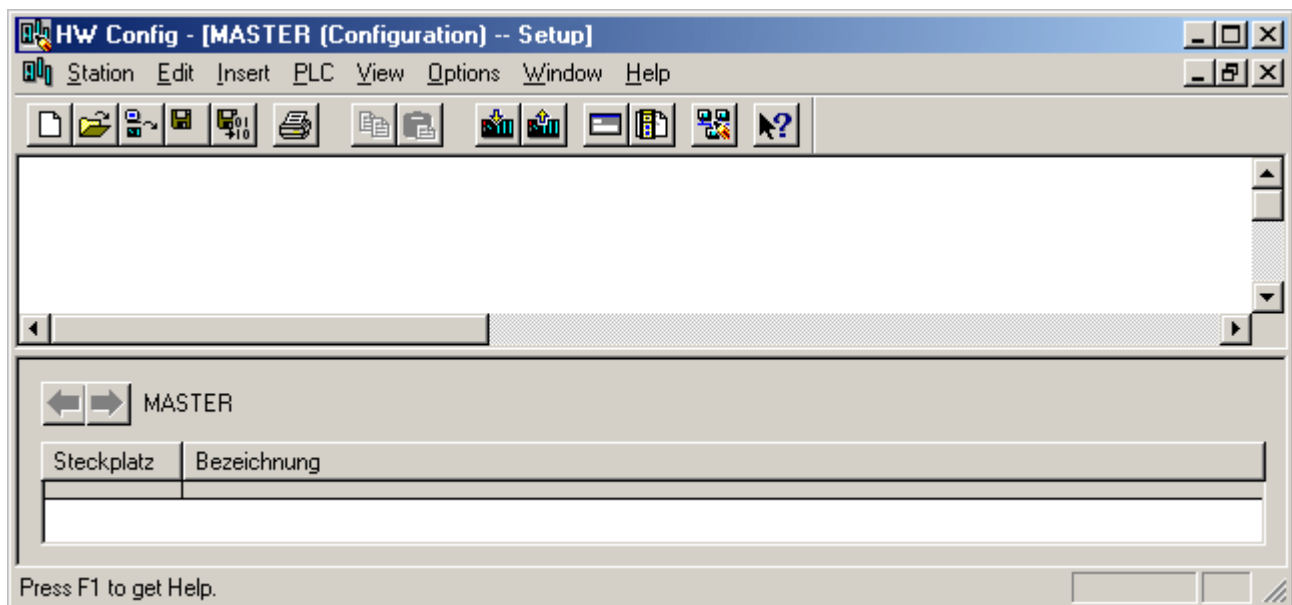
In order to configure the Master, the power supply, CPU and CP must be inserted into a rack/slot.

1. To start, click on the MASTER icon in the left pane of the window.

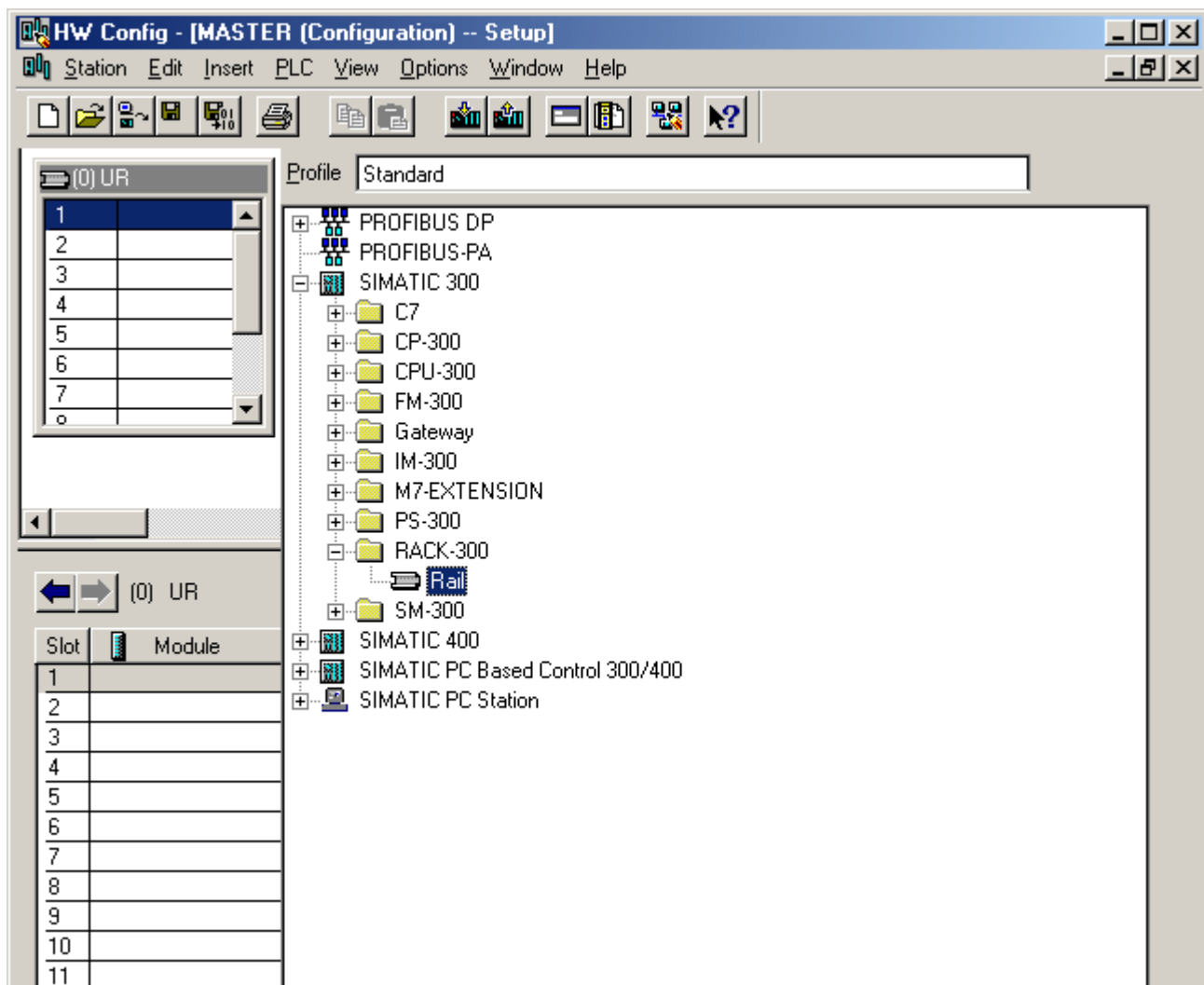
2. Next, double-click on **Hardware**.



**Note:** The hardware configuration (HW Config) window should appear as shown below.

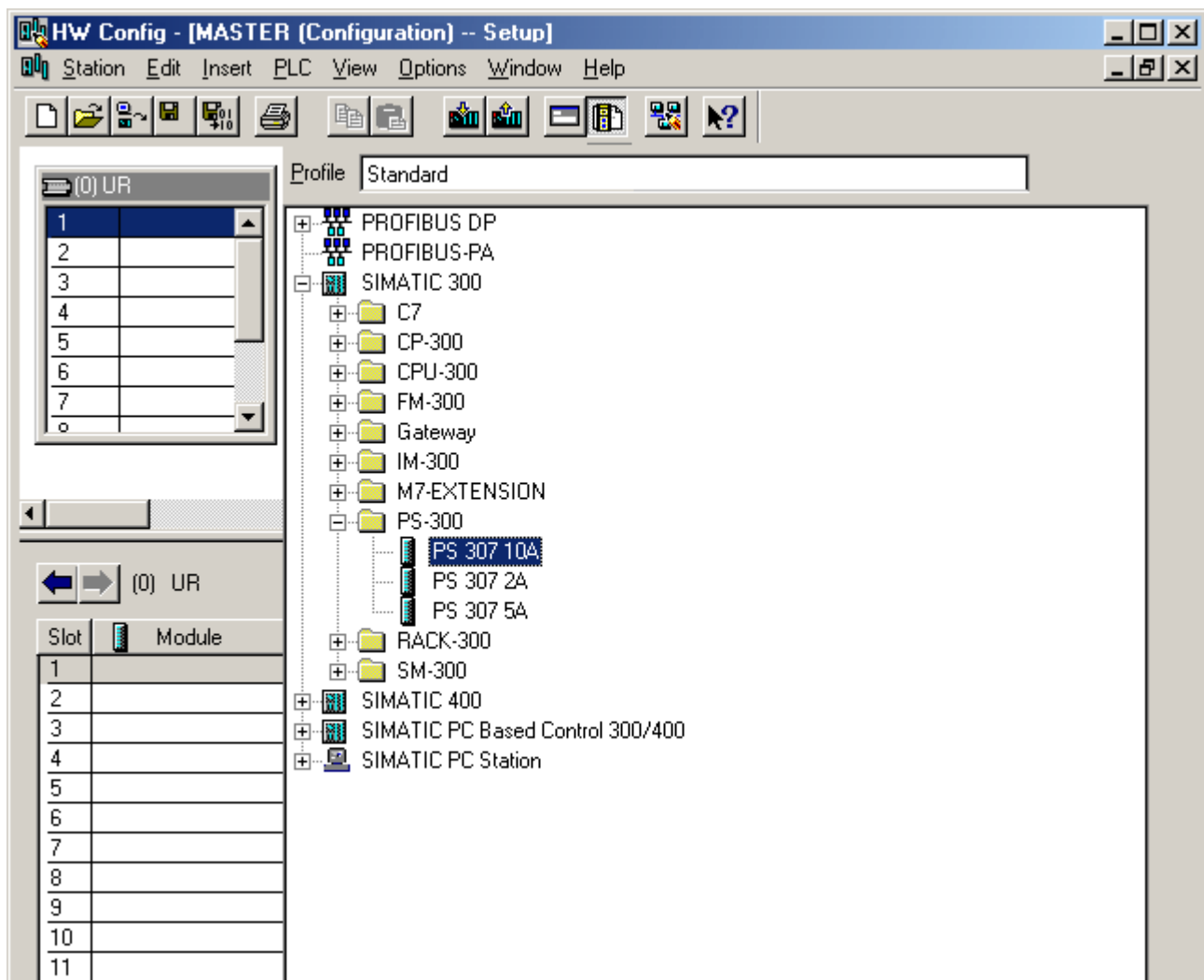


3. Next, click on the **View** tab and then select **Catalog**.
4. Expand the **SIMATIC 300** menu and the **Rack 300** menu.
5. To insert the racks, double-click on **Rail**.



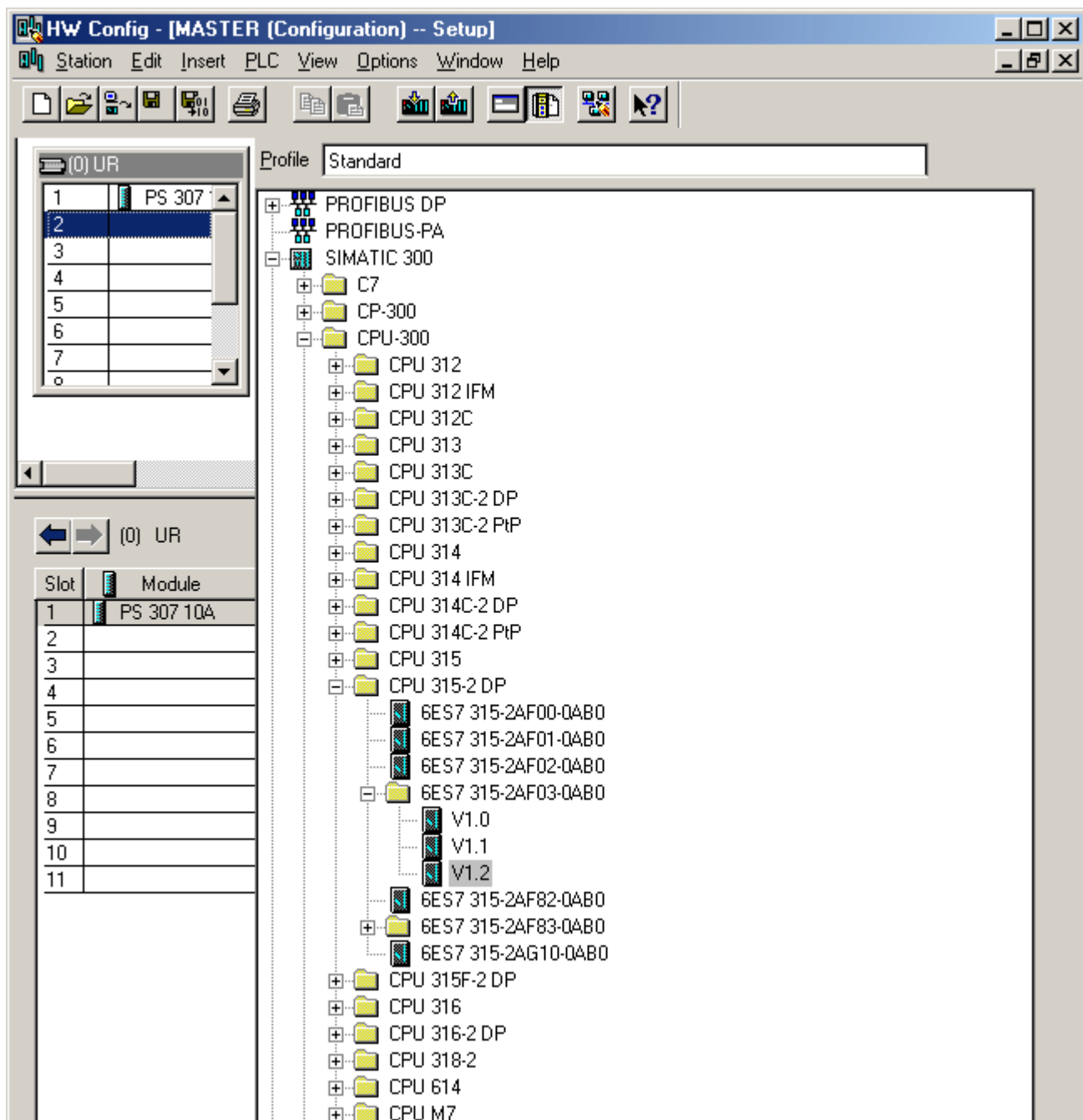
6. Next, expand the **PS 300** menu.

7. Double-click on **PS 307 10A** or any other suitable option. This will insert the power supply into slot 1.

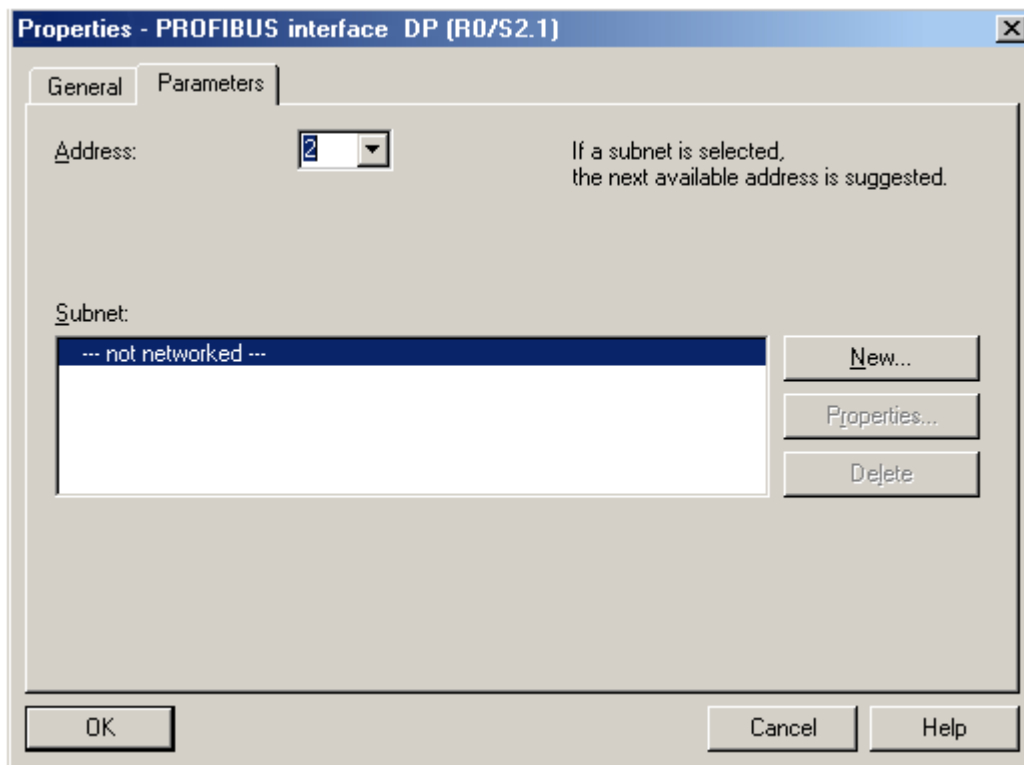


8. To insert the CPU, expand both the **CPU 300** menu and the **CPU 315-2 DP** menu.

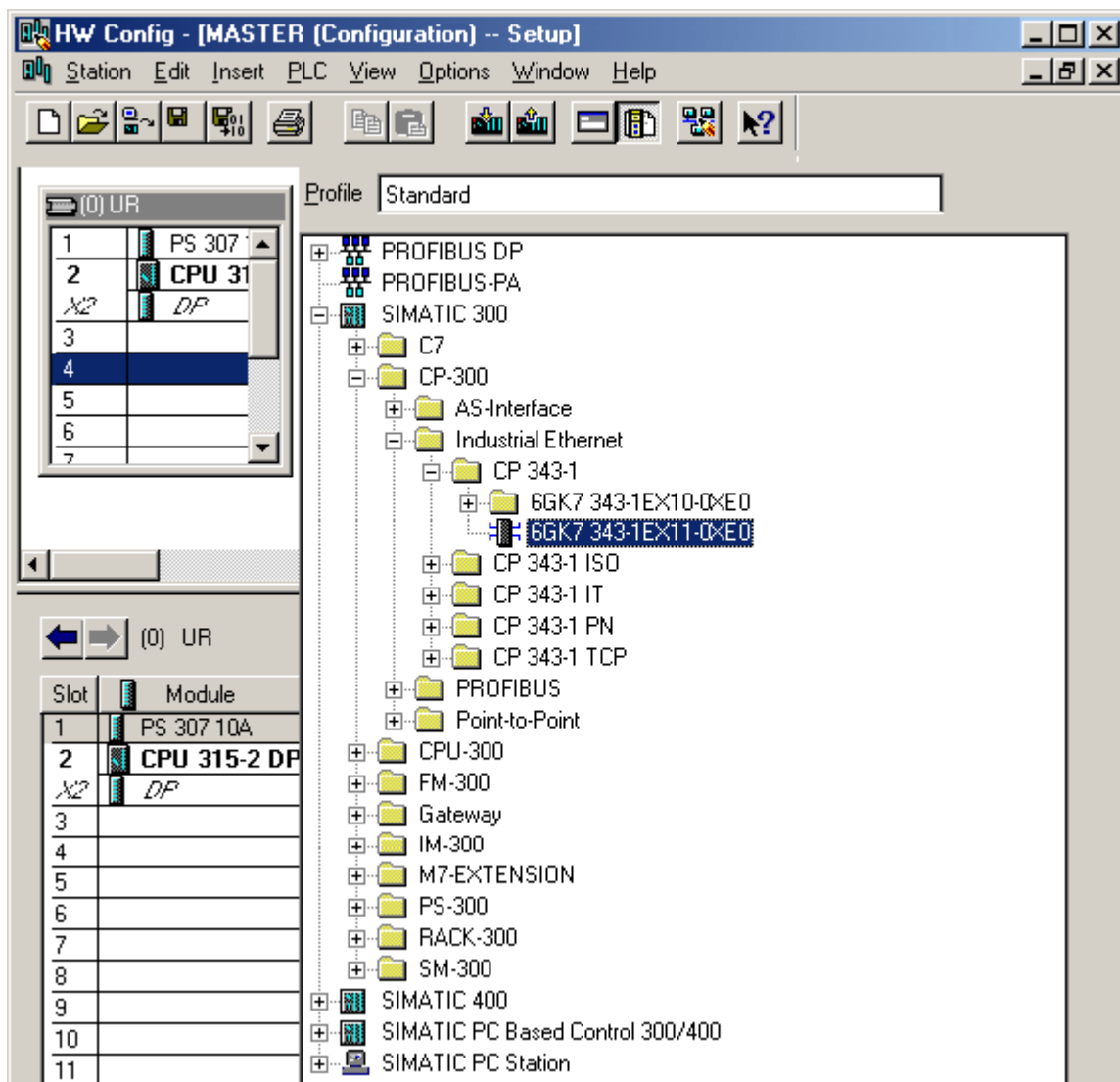
9. Double-click on the CPU that matches the hardware.



10. The following window should appear as shown below. Click **OK** to insert the CPU into slot 2.



11. To insert the CP, leave slot 3 empty and then click on slot 4 in the racks.
12. Next, expand both the **CP 300** menu and the **Industrial Ethernet** menu.
13. Double-click on the CP that matches the hardware.



**Note:** The following window should appear as shown below.

Properties - Ethernet interface CP 343-1 (R0/S4)

General Parameters

☐ Set MAC address / use ISO protocol

MAC address:  If a subnet is selected, the next available addresses are

☒ IP protocol is being used

IP address:

Subnet mask:

Gateway

☒ Do not use router

☐ Use router

Address:

Subnet:

--- not networked ---

Ethernet

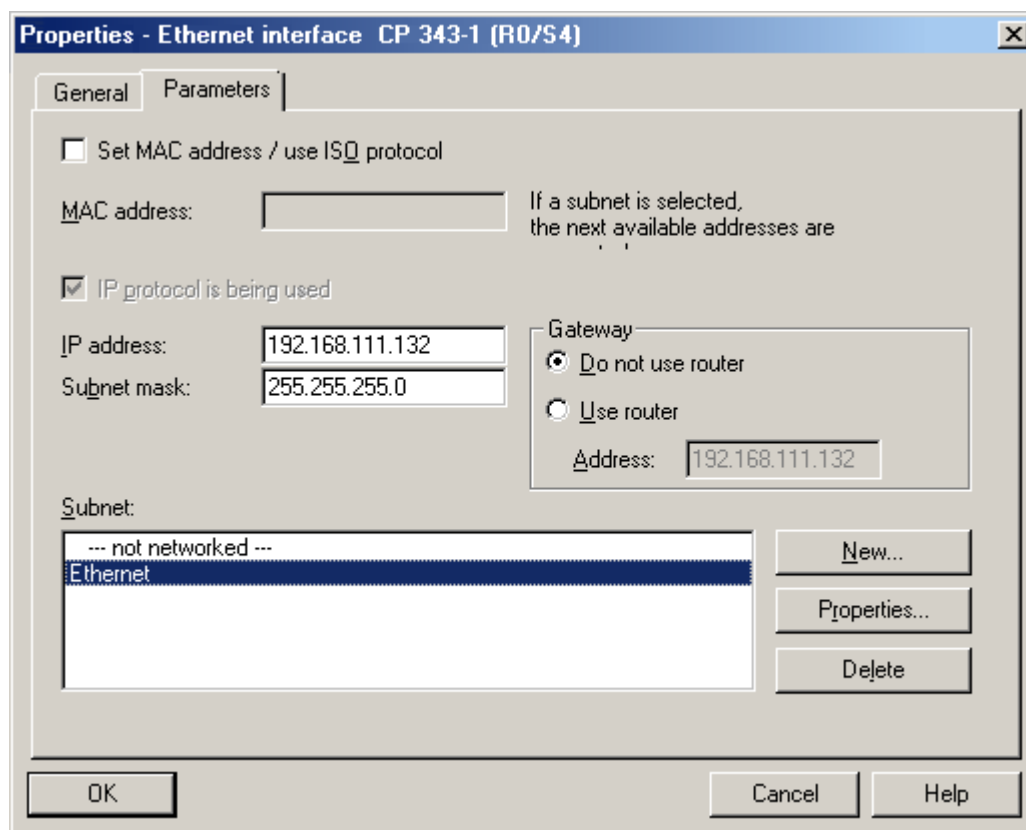
New...

Properties...

Delete

OK Cancel Help

14. Enter the PLC's IP address and the correct subnet mask.
15. Next, select **Ethernet** from the subnet box.
16. Click **OK** to configure the Master.

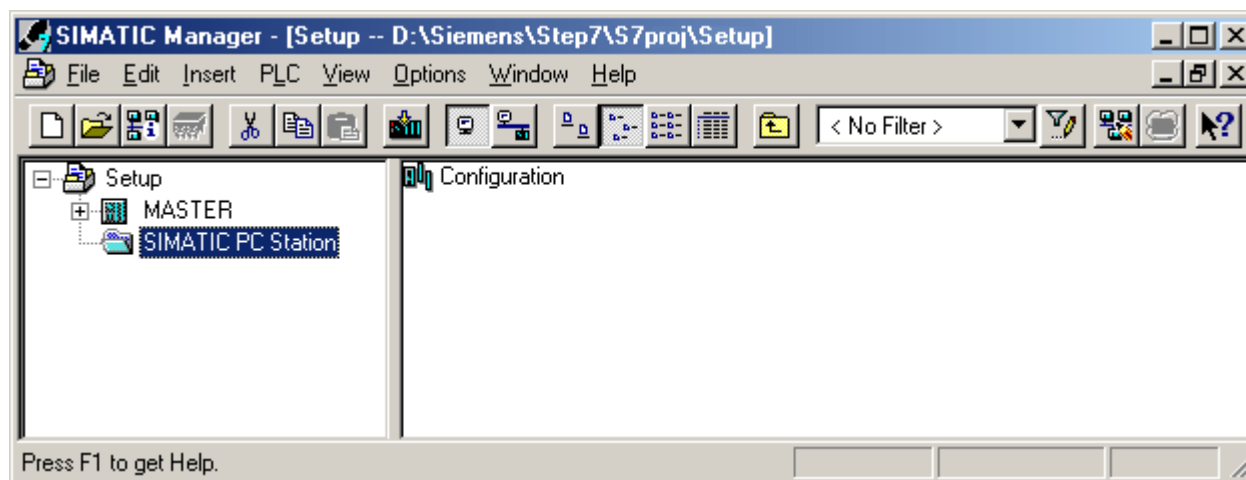


**Note:** To finish, click on the **View** tab and then select **Catalog** to hide the catalog window.

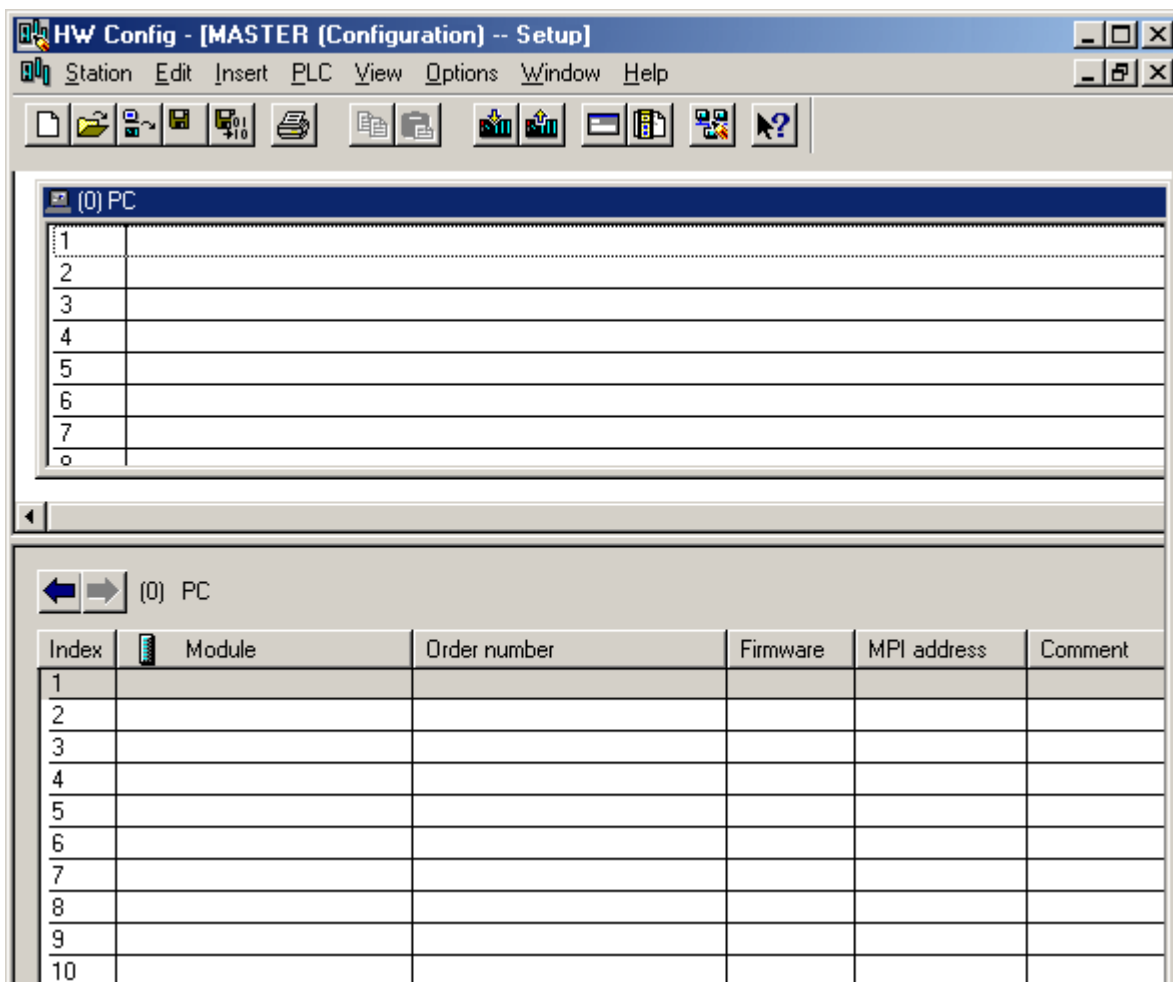
17. Save and exit the HW Configuration window.

### Configuring the PC Station

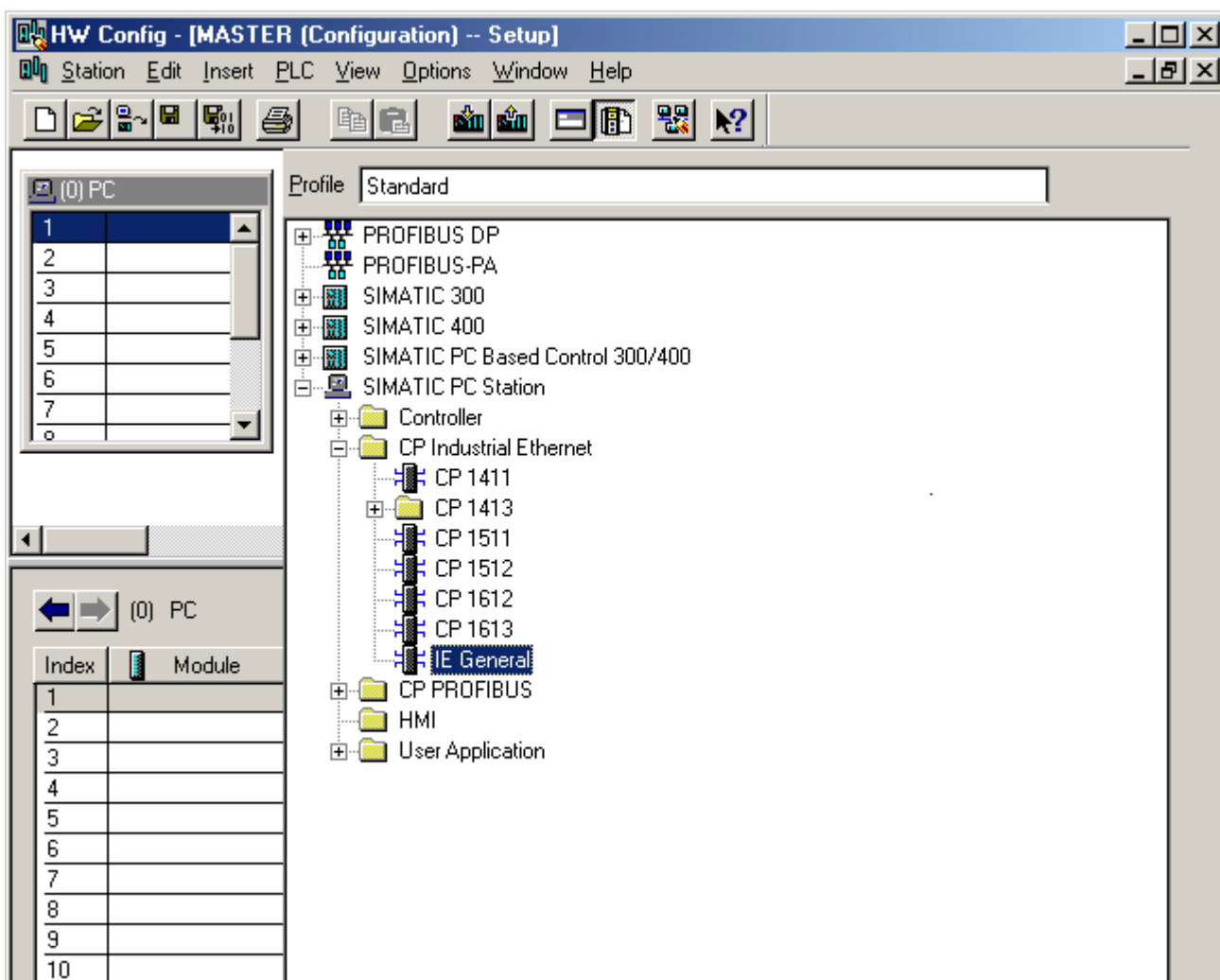
1. To start, click on the SIMATIC PC Station in the left pane of the SIMATIC Manager window.
2. Double-click on **Configuration**.



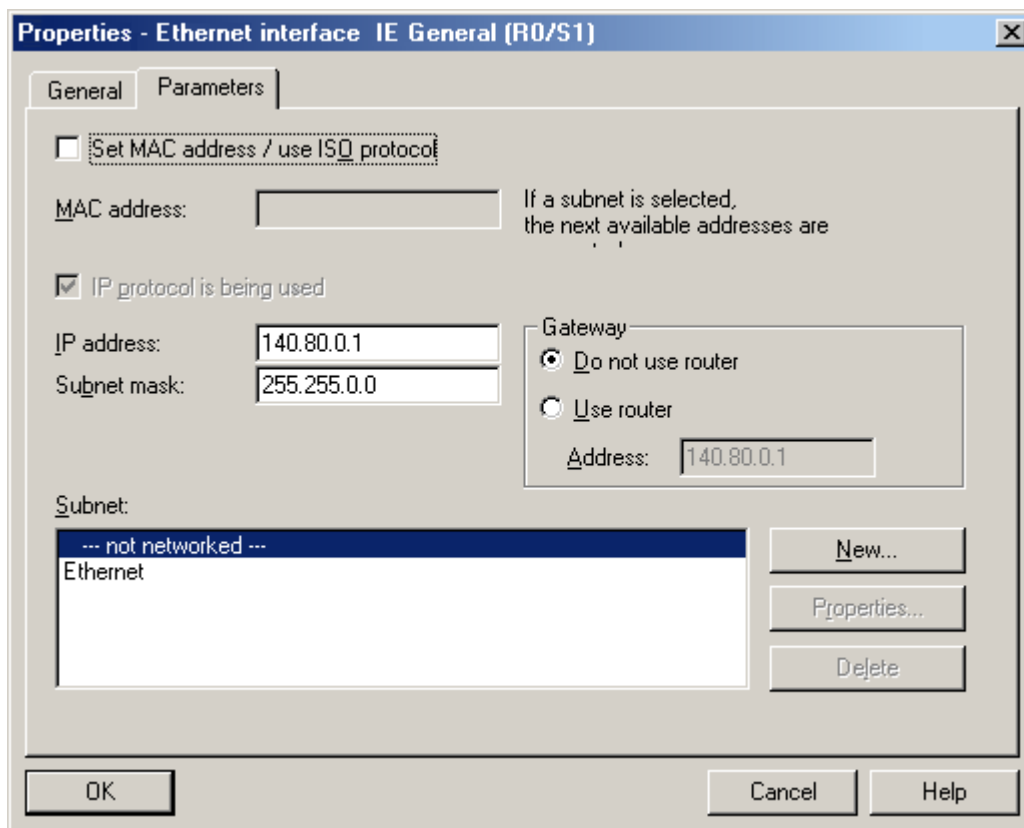
3. Next, click on the **View** tab and then select **Catalog**.



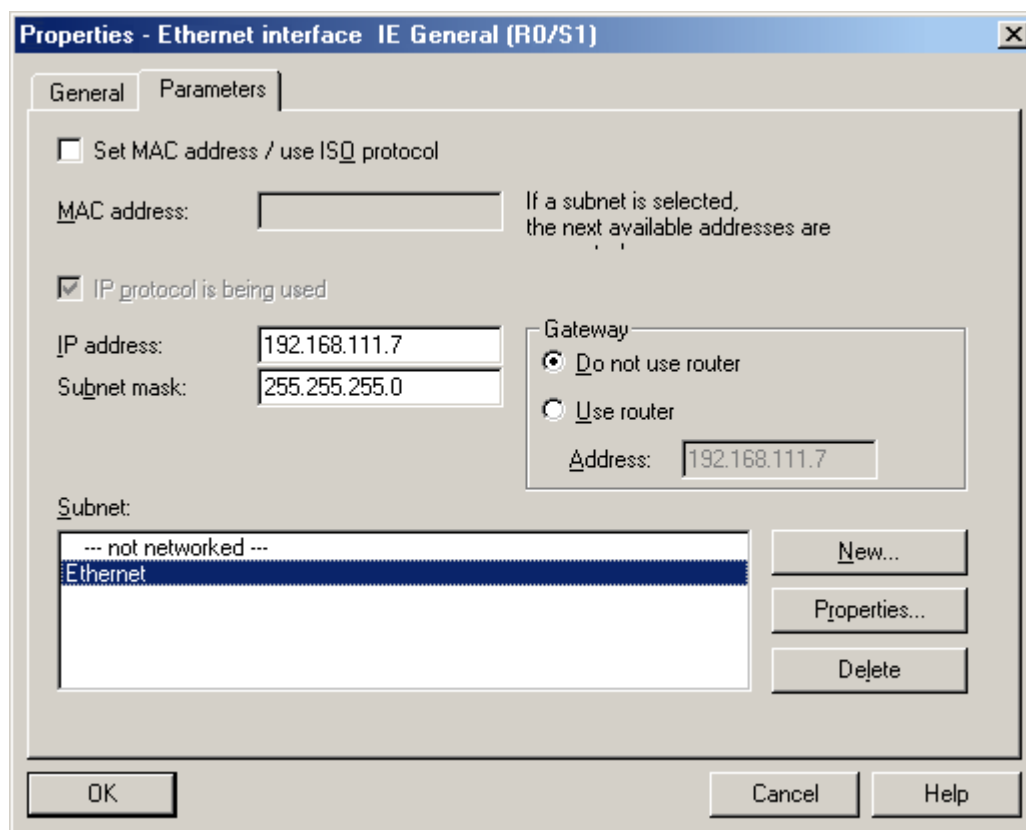
4. Expand both the **SIMATIC PC Station** menu and the **CP Industrial Ethernet** menu.
5. Double-click on **IE General** or any other suitable option.



**Note:** The window should appear as shown below.



6. Enter the IP address of the PC running the SIMATIC Manager software, as well as the correct subnet mask.
7. Next, select **Ethernet** from the subnet box.
8. Click **OK** to configure the PC station.



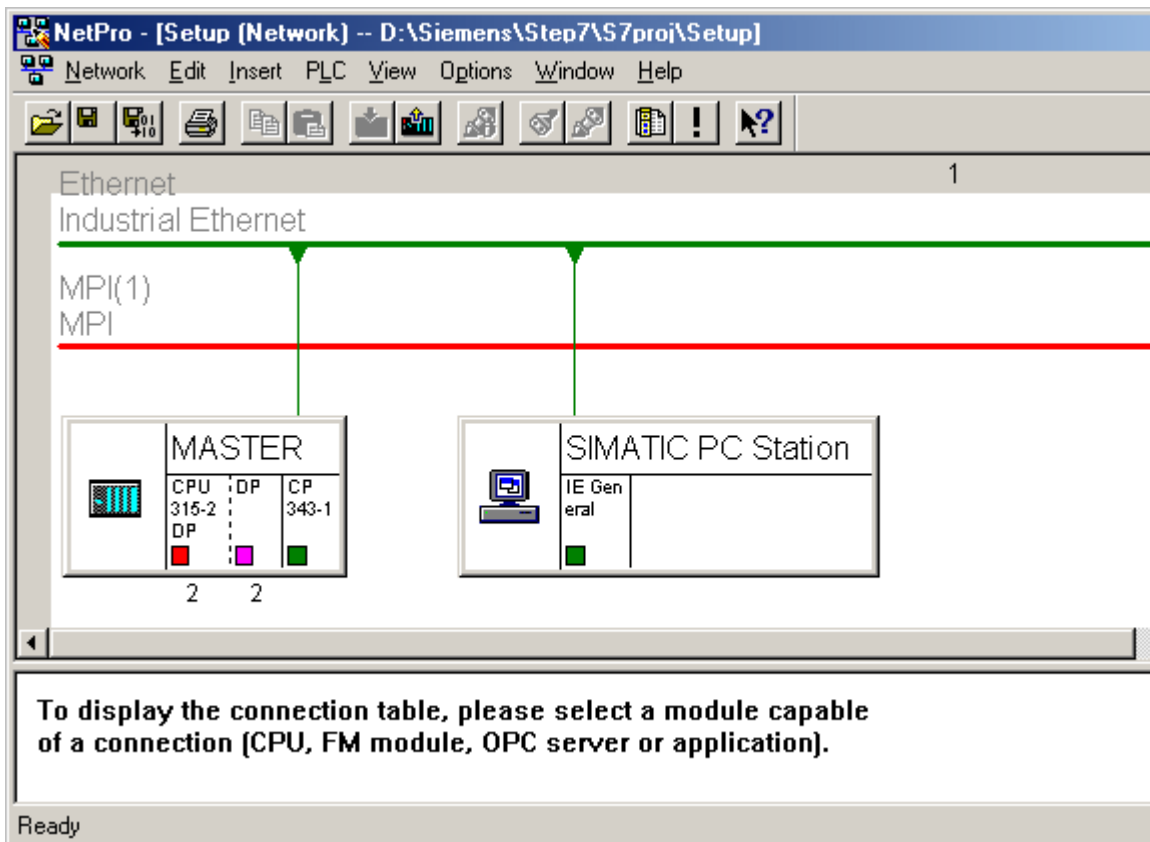
**Note:** To finish, click on the **View** tab and then select **Catalog** to hide the catalog window.

9. Save and exit the HW Configuration window.

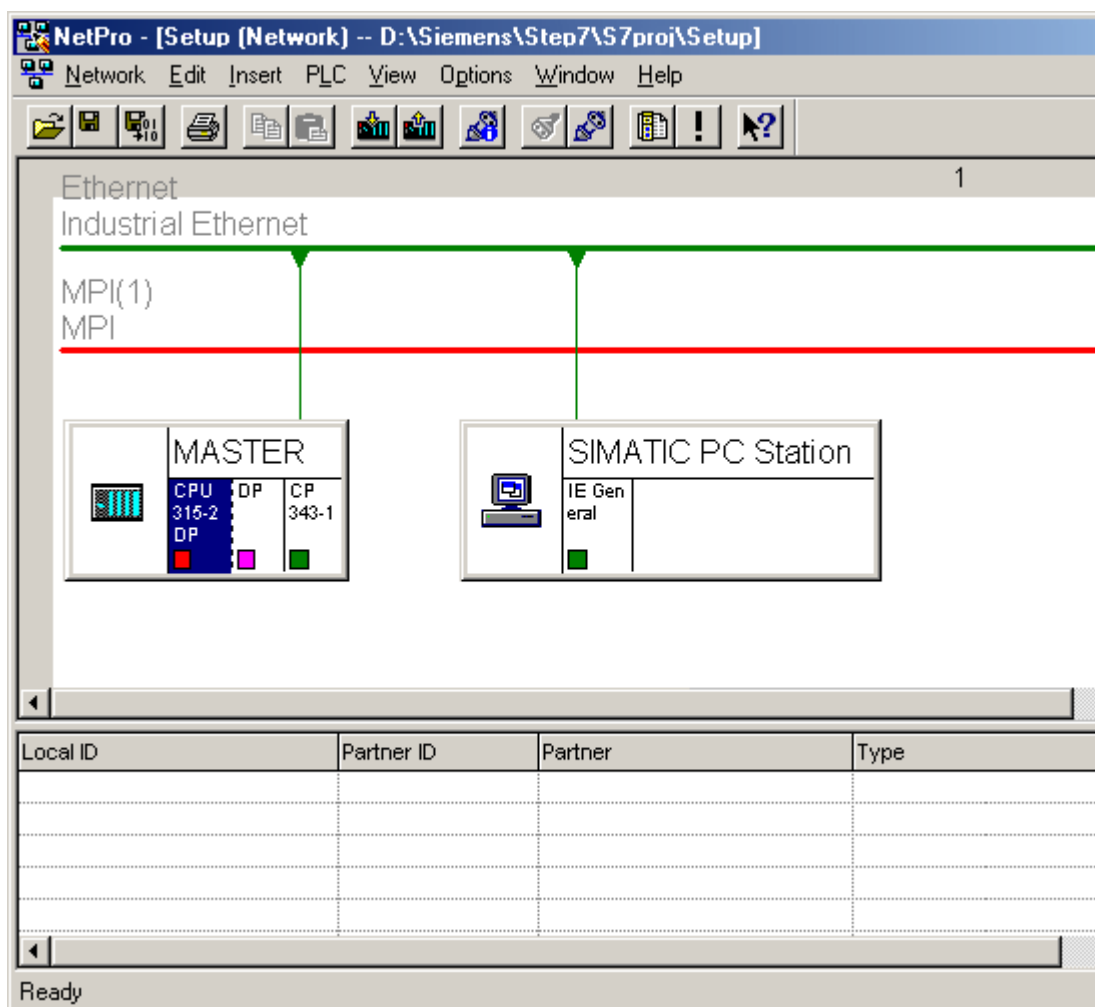
### Connecting the Master and the Slave Driver

Now that the Master and the PC Station have been successfully configured, the Master and the Slave Driver must be connected.

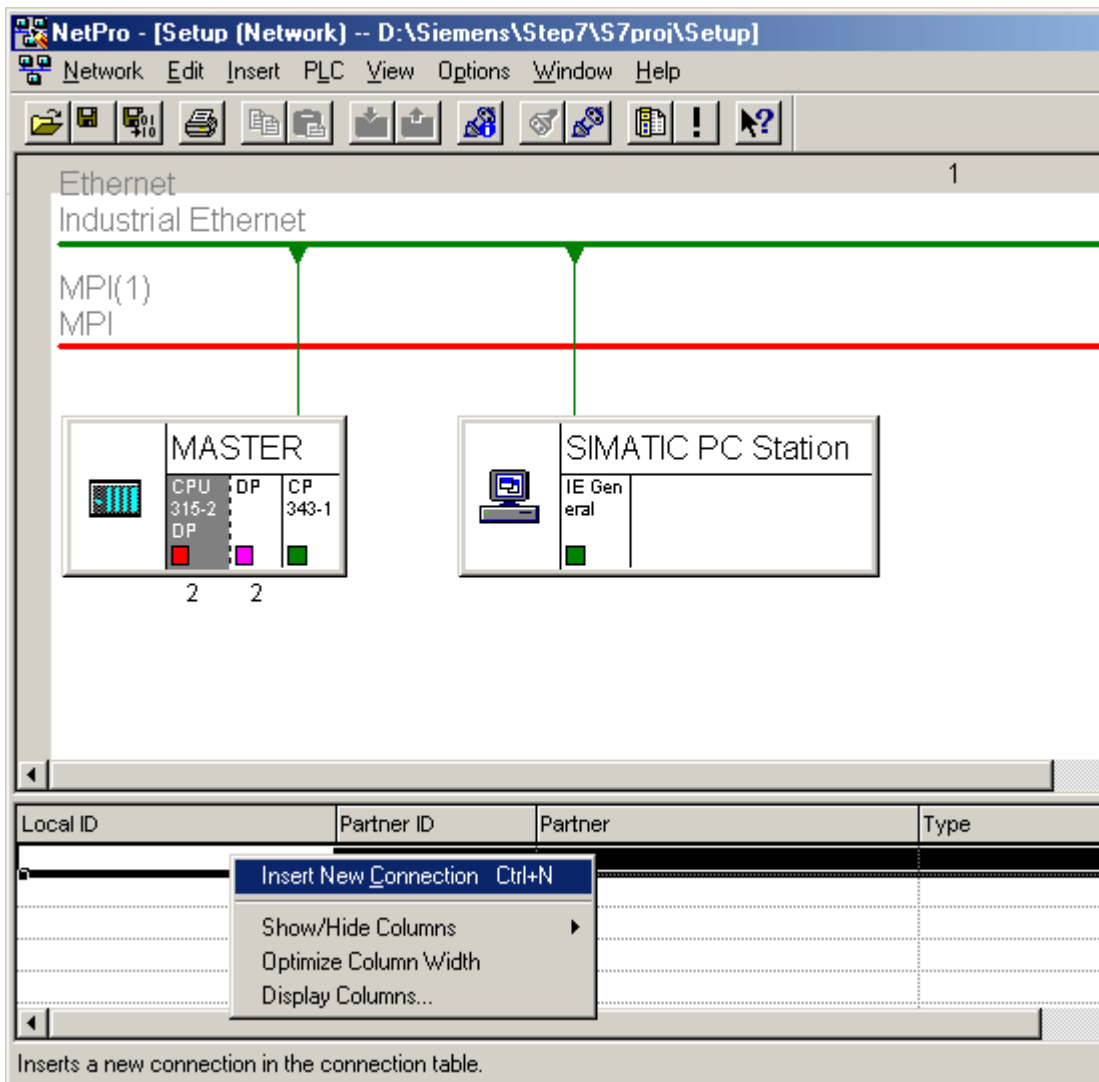
1. To start, click on the **Options** tab in the SIMATIC Manager window and then select **Configure Network**. The NetPro window should appear as shown below.



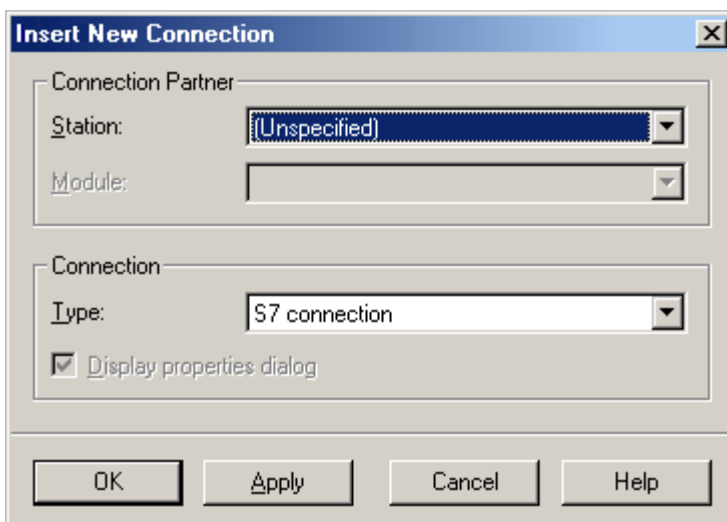
- Next, click on the Master's **CPU 315-2 DP** block. A series of rows should appear in the lower half of the window.



3. Right-click on the first row and then click **Insert New Connection**.



4. Click **OK**.



**Note:** The Properties window should appear as shown below.

**Properties - S7 connection**

General | Status Information

**Local Connection End Point**

- ☐ Fixed configured dynamic connection
- ☒ One-way
- ☒ Establish an active connection
- ☐ Send operating mode messages

**Block Parameters**

Local ID (Hex): W#16#1

1

Default

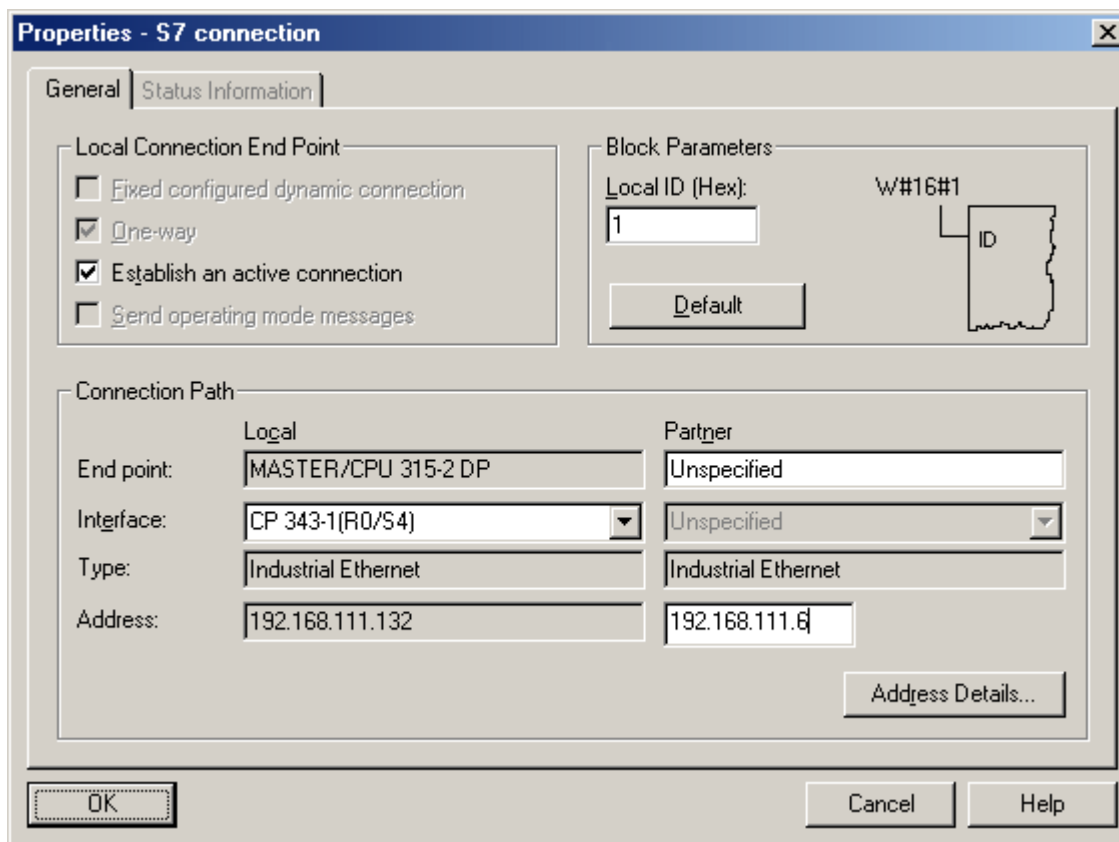
**Connection Path**

|            | Local               | Partner             |
|------------|---------------------|---------------------|
| End point: | MASTER/CPU 315-2 DP | Unspecified         |
| Interface: | CP 343-1(R0/S4)     | Unspecified         |
| Type:      | Industrial Ethernet | Industrial Ethernet |
| Address:   | 192.168.111.132     |                     |

Address Details...

OK Cancel Help

5. Next, enter the IP address of the machine on which the Siemens TCP/IP Slave Ethernet driver will be running.



**Properties - S7 connection**

General | Status Information

**Local Connection End Point**

- ☐ Fixed configured dynamic connection
- ☒ One-way
- ☒ Establish an active connection
- ☐ Send operating mode messages

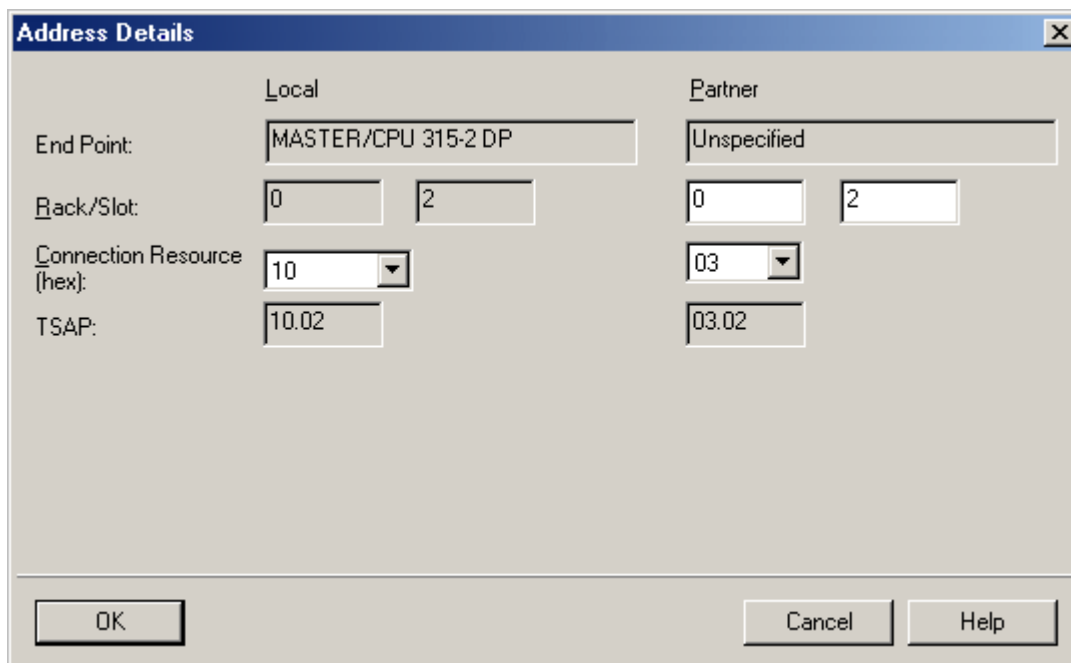
**Block Parameters**

Local ID (Hex):  W#16#1

**Connection Path**

|            | Local                                            | Partner                                          |
|------------|--------------------------------------------------|--------------------------------------------------|
| End point: | <input type="text" value="MASTER/CPU 315-2 DP"/> | <input type="text" value="Unspecified"/>         |
| Interface: | <input type="text" value="CP 343-1(R0/S4)"/>     | <input type="text" value="Unspecified"/>         |
| Type:      | <input type="text" value="Industrial Ethernet"/> | <input type="text" value="Industrial Ethernet"/> |
| Address:   | <input type="text" value="192.168.111.132"/>     | <input type="text" value="192.168.111.6"/>       |

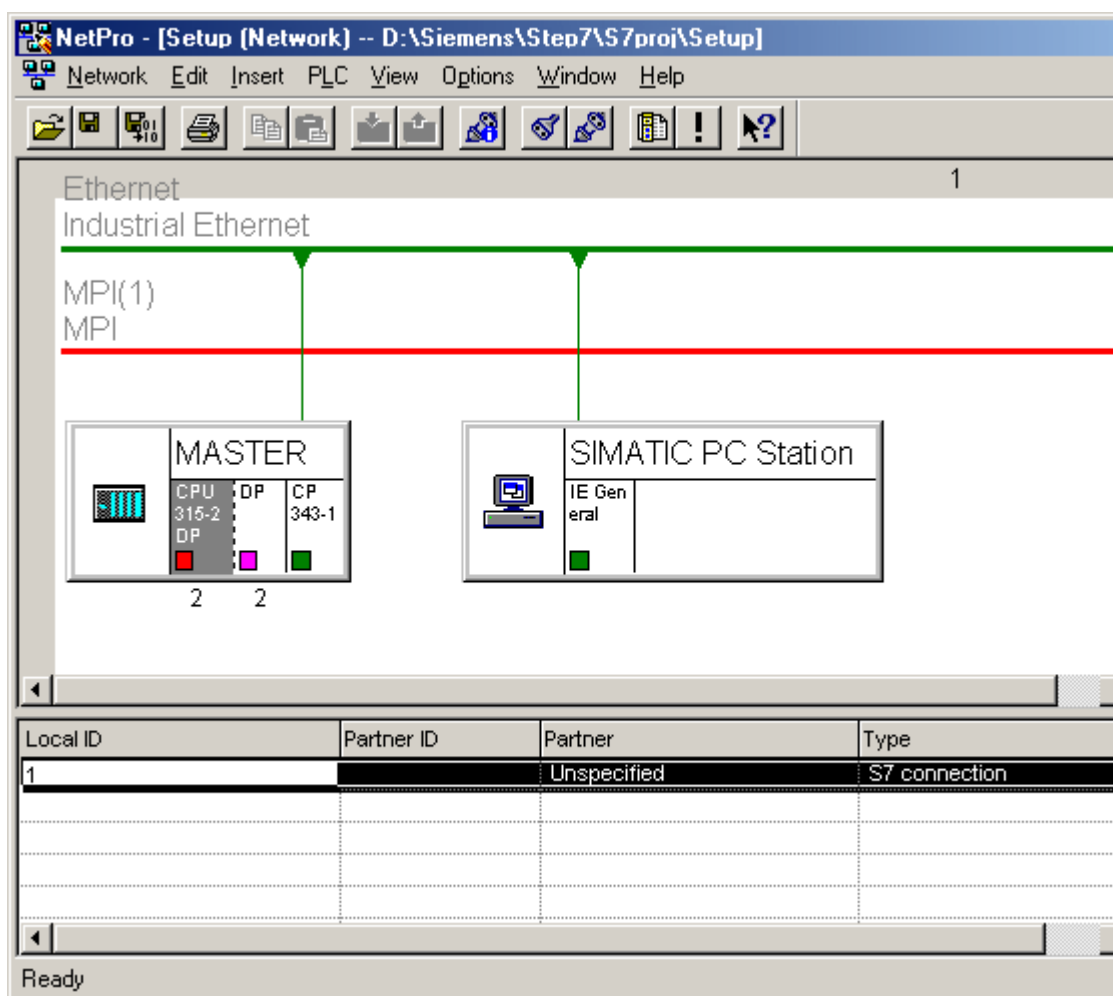
6. Click **Address Details** in order to enter the rack/slot values of the device in the unsolicited driver with which the Master will be communicating.



**Address Details**

|                            | Local                                                         | Partner                                                       |
|----------------------------|---------------------------------------------------------------|---------------------------------------------------------------|
| End Point:                 | <input type="text" value="MASTER/CPU 315-2 DP"/>              | <input type="text" value="Unspecified"/>                      |
| Rack/Slot:                 | <input type="text" value="0"/> <input type="text" value="2"/> | <input type="text" value="0"/> <input type="text" value="2"/> |
| Connection Resource (hex): | <input type="text" value="10"/>                               | <input type="text" value="03"/>                               |
| TSAP:                      | <input type="text" value="10.02"/>                            | <input type="text" value="03.02"/>                            |

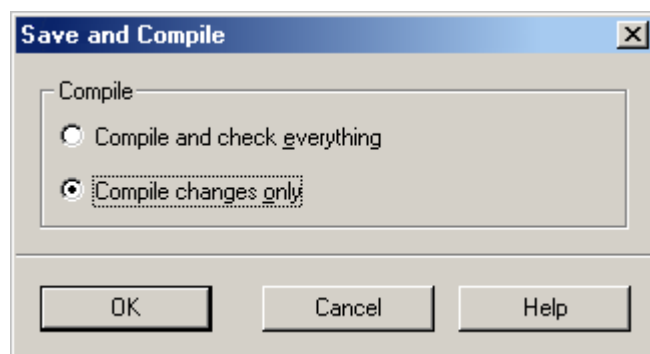
7. Click **OK** twice to successfully connect the Master and the Slave Driver. The master will use these settings to communicate with the destination device at rack 0 and slot 2.



**Note:** The Local ID number (=1) above identifies the connection between the two partners. This number will be used later when creating the function blocks for reading and writing data.

8. To finish, save and compile the data by clicking on the **Network** tab and selecting **Save and Compile**. Then, click **OK**.

**Note:** There should be no errors on compilation.

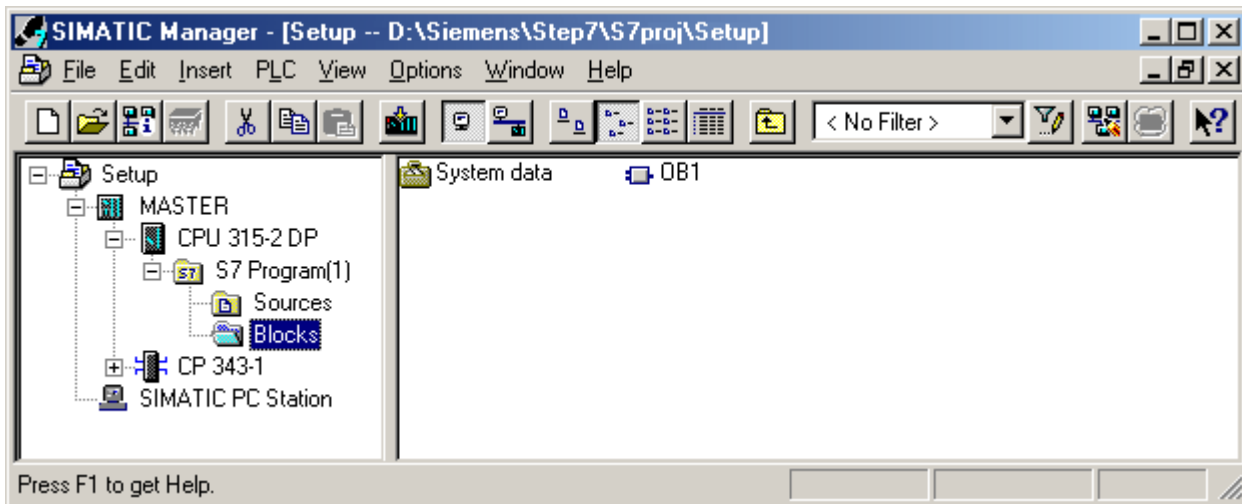


### Inserting Function Blocks

Now that the master has been configured and connected with the unsolicited driver, it must also be prepared to generate

requests for the unsolicited partner. This is done by creating function blocks, which can be to either read data from or write data to the unsolicited driver. The function block (FB) used for reading data in this example is FB14 (GET). The function block (FB) for writing data is FB15 (PUT).

1. To start, expand the Master menu in the left pane of the SIMATIC Manager window. Expand the **CPU 315-2 DP** menu and the **S7 Program[1]** menu as well.
2. Next, double-click on **Blocks**.
3. Double-click on "OB1" in the right pane of the window.



### Inserting GET FB

LAD, STL or FBD can be used to create the function block. In this example, FBD is used.

1. In the LAD/STL/FBD window, click on the **Insert** menu.

LAD/STL/FBD - [OB1 -- Setup\MASTER\CPU 315-2 DP]

File Edit Insert PLC Debug View Options Window Help

| Address | Declaration | Name           | Type | Initial value | Comment                                   |
|---------|-------------|----------------|------|---------------|-------------------------------------------|
| 0.0     | temp        | OB1_EV_CLASS   | BYTE |               | Bits 0-3=1 (Coming event), Bits 4-7 = 1 ( |
| 1.0     | temp        | OB1_SCAN_1     | BYTE |               | 1 (Cold restart scan 1 of OB 1), 3 (Scan  |
| 2.0     | temp        | OB1_PRIORITY   | BYTE |               | Priority of OB Execution                  |
| 3.0     | temp        | OB1_OB_NUMBR   | BYTE |               | 1 (Organization block 1, OB1)             |
| 4.0     | temp        | OB1_RESERVED_1 | BYTE |               | Reserved for system                       |
| 5.0     | temp        | OB1_RESERVED_2 | BYTE |               | Reserved for system                       |
| 6.0     | temp        | OB1_PREV_CYCLE | INT  |               | Cycle time of previous OB1 scan (mil      |
| 8.0     | temp        | OB1_MIN_CYCLE  | INT  |               | Minimum cycle time of OB1 (millisec       |

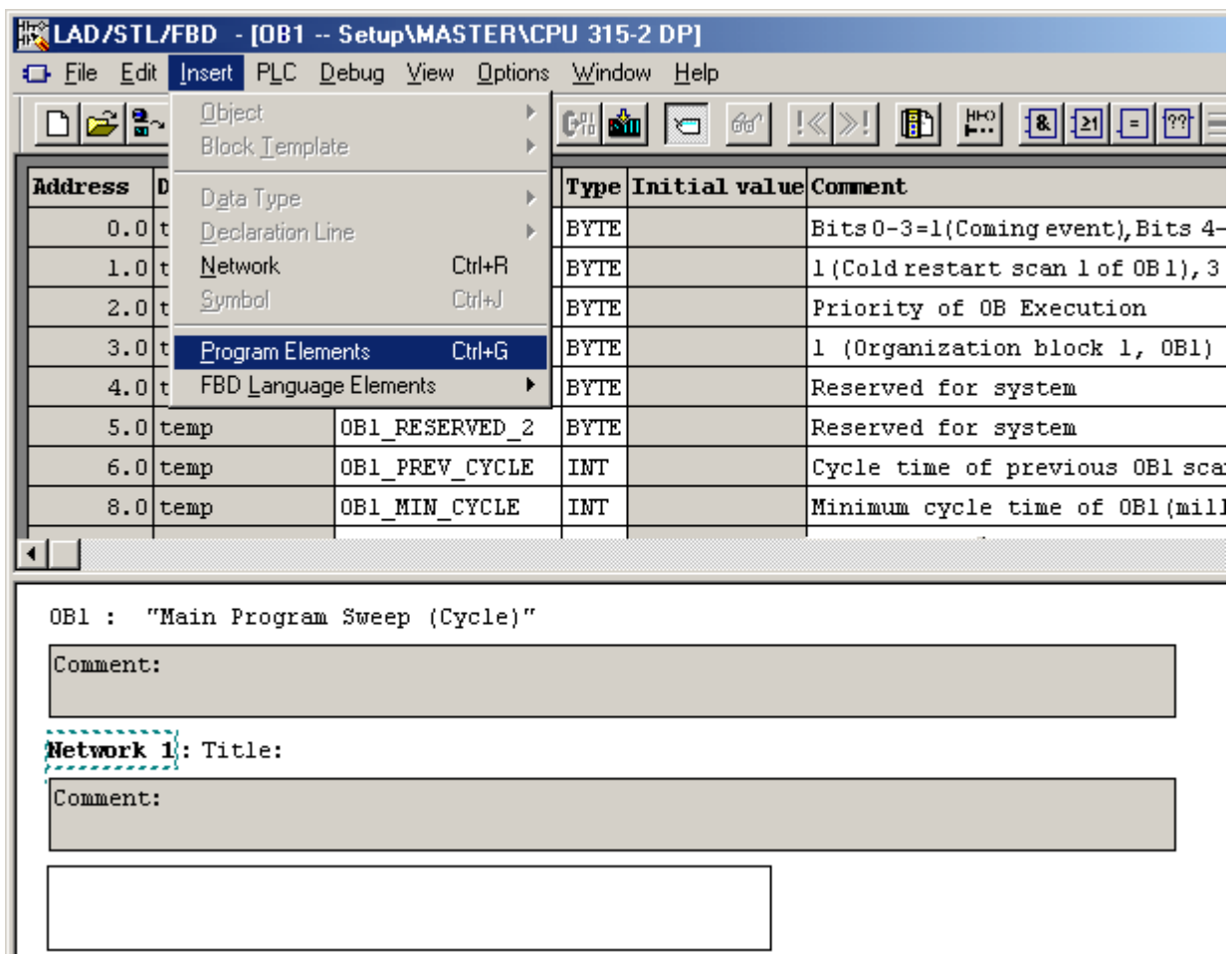
OB1 : "Main Program Sweep (Cycle)"

Comment:

**Network 1**: Title:

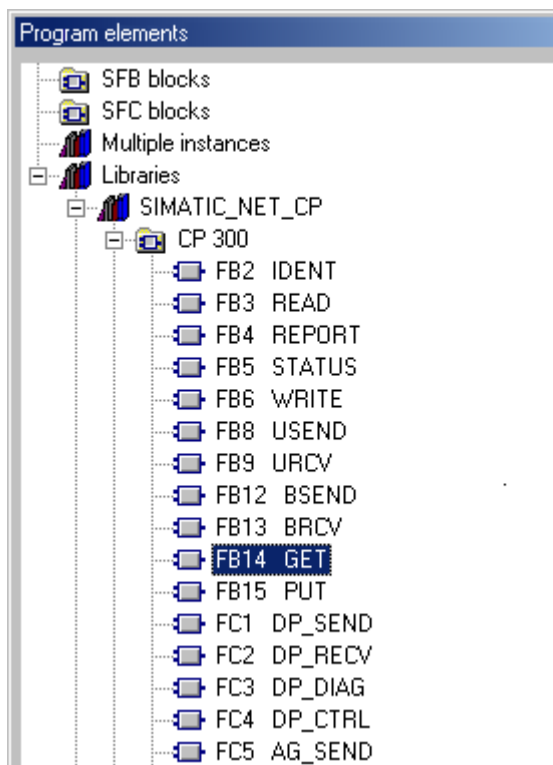
Comment:

2. Then, click **Program Elements**.



3. Expand the **Libraries** menu, the **SIMATIC\_NET\_CP** menu and the **CP 300** menu.

4. Double-click on **FB14 GET** to insert a function block to read data.



5. Close the **Program Elements** window. "FB14" should be inserted as shown below.

LAD/STL/FBD - [OB1 -- Setup\MASTER\CPU 315-2 DP]

File Edit Insert PLC Debug View Options Window Help

| Address | Declaration | Name           | Type | Initial value | Comment                                  |
|---------|-------------|----------------|------|---------------|------------------------------------------|
| 0.0     | temp        | OB1_EV_CLASS   | BYTE |               | Bits 0-3=1 (Coming event), Bits 4-7=1 (E |
| 1.0     | temp        | OB1_SCAN_1     | BYTE |               | 1 (Cold restart scan 1 of OB 1), 3 (Sca  |
| 2.0     | temp        | OB1_PRIORITY   | BYTE |               | Priority of OB Execution                 |
| 3.0     | temp        | OB1_OB_NUMBR   | BYTE |               | 1 (Organization block 1, OB1)            |
| 4.0     | temp        | OB1_RESERVED_1 | BYTE |               | Reserved for system                      |
| 5.0     | temp        | OB1_RESERVED_2 | BYTE |               | Reserved for system                      |
| 6.0     | temp        | OB1_PREV_CYCLE | INT  |               | Cycle time of previous OB1 scan (mil.    |
| 8.0     | temp        | OB1_MIN_CYCLE  | INT  |               | Minimum cycle time of OB1 (milliseco     |

OB1 : "Main Program Sweep (Cycle)"

Comment:

**Network 1:** Title:

Comment:

???  
"GET"

```

... -- EN
... -- REQ          NDR ---...
... -- ID           ERROR ---...
... -- ADDR_1       STATUS ---...
... -- RD_1         ENO ---
  
```

**Symbol information:**

|      |     |                             |
|------|-----|-----------------------------|
| FB14 | GET | Read Data From a Remote CPU |
|------|-----|-----------------------------|

6. Next, associate a data block (DB) with the function block (FB). To do so, click above the FB where there are three red question marks.

7. Enter the name of a data block, which is "DB2" in this example.

LAD/STL/FBD - [OB1 -- Setup\MASTER\CPU 315-2 DP]

File Edit Insert PLC Debug View Options Window Help

| Address | Declaration | Name           | Type | Initial value | Comment                                     |
|---------|-------------|----------------|------|---------------|---------------------------------------------|
| 0.0     | temp        | OB1_EV_CLASS   | BYTE |               | Bits 0-3=1(Coming event), Bits 4-7=1        |
| 1.0     | temp        | OB1_SCAN_1     | BYTE |               | 1 (Cold restart scan 1 of OB 1), 3 (Scan 3) |
| 2.0     | temp        | OB1_PRIORITY   | BYTE |               | Priority of OB Execution                    |
| 3.0     | temp        | OB1_OB_NUMBR   | BYTE |               | 1 (Organization block 1, OB1)               |
| 4.0     | temp        | OB1_RESERVED_1 | BYTE |               | Reserved for system                         |
| 5.0     | temp        | OB1_RESERVED_2 | BYTE |               | Reserved for system                         |
| 6.0     | temp        | OB1_PREV_CYCLE | INT  |               | Cycle time of previous OB1 scan (           |
| 8.0     | temp        | OB1_MIN_CYCLE  | INT  |               | Minimum cycle time of OB1 (millis           |

OB1 : "Main Program Sweep (Cycle)"

Comment:

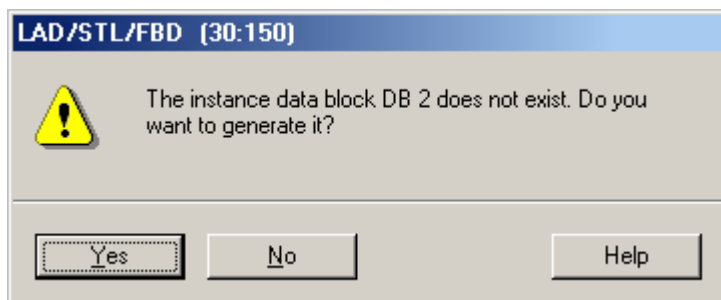
**Network 1:** Title:

Comment:

**Symbol information:**

|      |     |                             |
|------|-----|-----------------------------|
| FB14 | GET | Read Data From a Remote CPU |
|------|-----|-----------------------------|

8. In the following window, click **Yes** to create the data block.



9. Next, fill in the other details as appropriate for the fields in the function block. For example function block values, refer to the image below.

**Note:** When filling in fields in the GET FB, consider the following:

- "ADDR\_1" is the address on the destination device in the unsolicited driver.
- "RD\_1" is the address local to the PLC.
- The value at the remote address specified by "ADDR\_1" is written (GET) to the local address specified by "RD\_1".
- Enter the **Local ID** number that was generated when setting up the connection between the Master and the Slave Driver in the **ID** field. In this example, the Local ID number is 1.

**Important:** The number of bytes in both the "ADDR\_1" and "SD\_1" fields should be same for the unsolicited driver to respond correctly. Otherwise, an error message will be sent.

**LAD/STL/FBD - [OB1 -- Setup\MASTER\CPU 315-2 DP]**

File Edit Insert PLC Debug View Options Window Help

| Address | Declaration | Name           | Type | Initial value | Comment                               |
|---------|-------------|----------------|------|---------------|---------------------------------------|
| 0.0     | temp        | OB1_EV_CLASS   | BYTE |               | Bits 0-3=1(Coming event), Bits 4-7=1( |
| 1.0     | temp        | OB1_SCAN_1     | BYTE |               | 1 (Cold restart scan1 of OB1), 3(Scan |
| 2.0     | temp        | OB1_PRIORITY   | BYTE |               | Priority of OB Execution              |
| 3.0     | temp        | OB1_OB_NUMBR   | BYTE |               | 1 (Organization block 1, OB1)         |
| 4.0     | temp        | OB1_RESERVED_1 | BYTE |               | Reserved for system                   |
| 5.0     | temp        | OB1_RESERVED_2 | BYTE |               | Reserved for system                   |
| 6.0     | temp        | OB1_PREV_CYCLE | INT  |               | Cycle time of previous OB1scan(mi     |
| 8.0     | temp        | OB1_MIN_CYCLE  | INT  |               | Minimum cycle time of OB1 (millise    |
| 10.0    | temp        | OB1_MAX_CYCLE  | INT  |               | Maximum cycle time of OB1 (millise    |
| 12.0    | temp        | OB1_DATE_TIME  | DATE |               | Date and time OB1 started             |

OB1 : "Main Program Sweep (Cycle)"

Comment:

**Network 1:** Title:

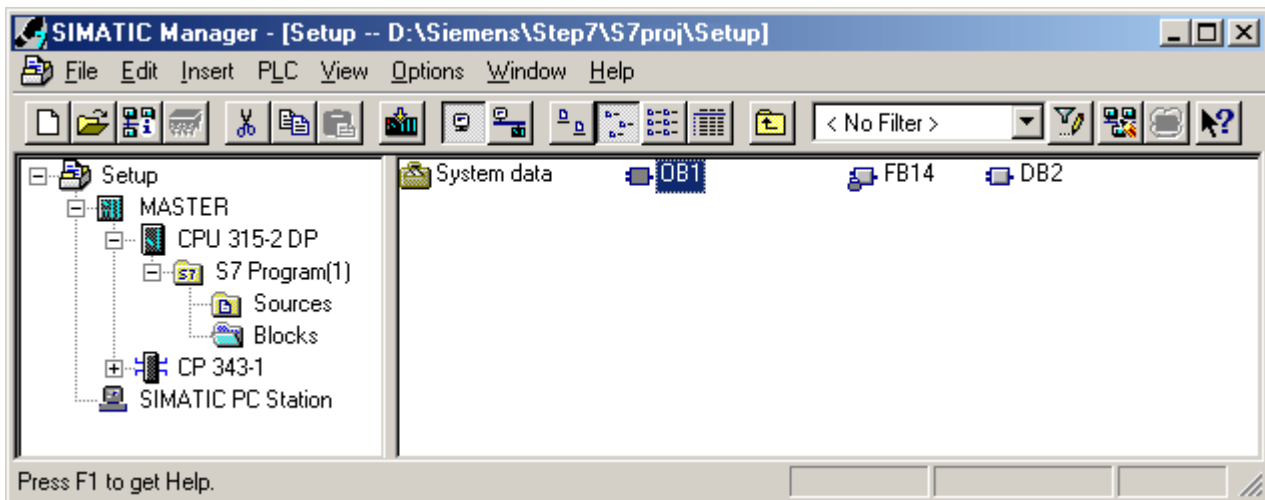
Comment:

**Symbol information:**

|      |     |                             |
|------|-----|-----------------------------|
| FB14 | GET | Read Data From a Remote CPU |
|------|-----|-----------------------------|

**Note:** Now that the GET function block has been created successfully, it is important to remember that the block gets executed/triggered only on a rising edge (REQ).

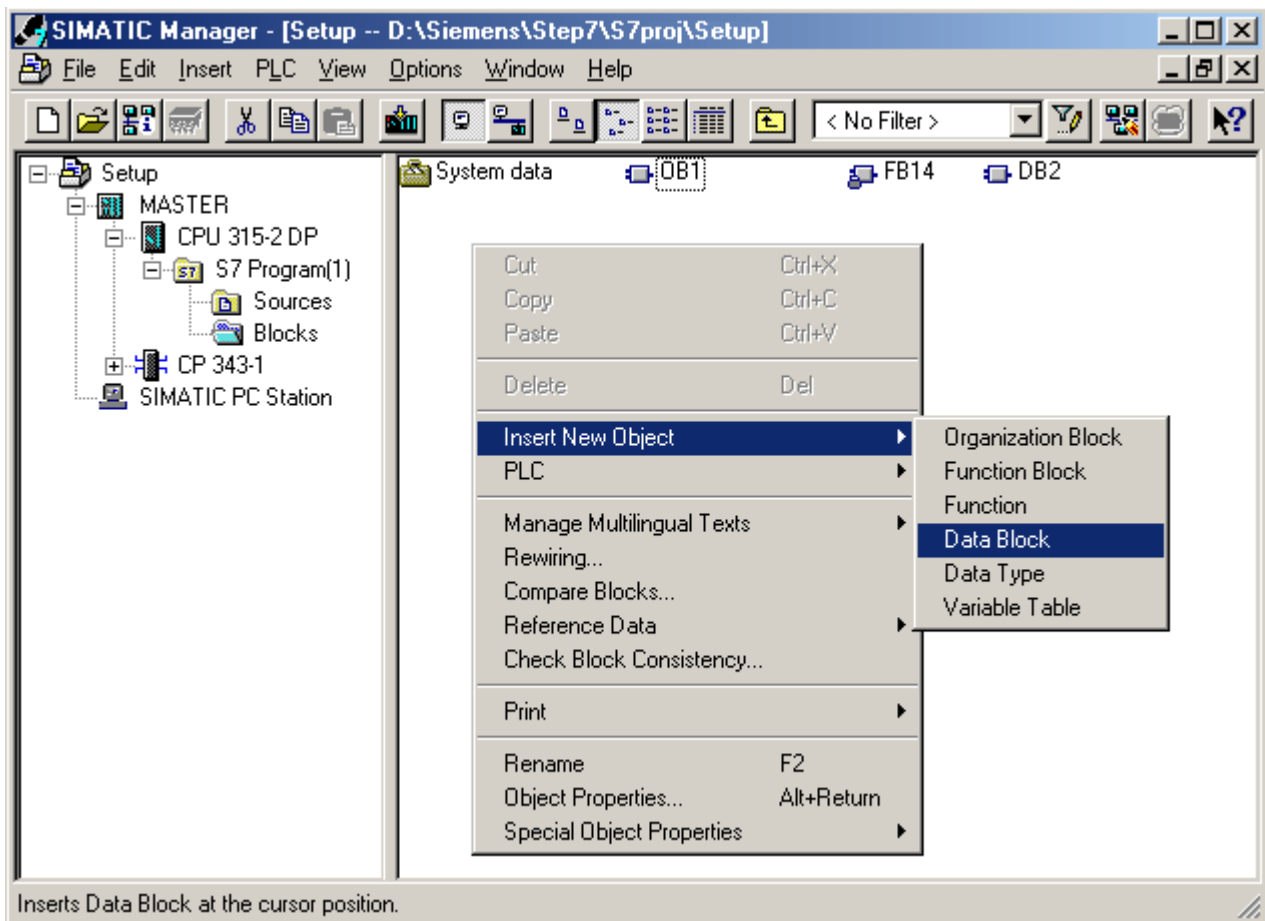
10. To finish, click **Save** and then close the **LAD/STL/FBD** window.



### Creating the DB3 Data Block

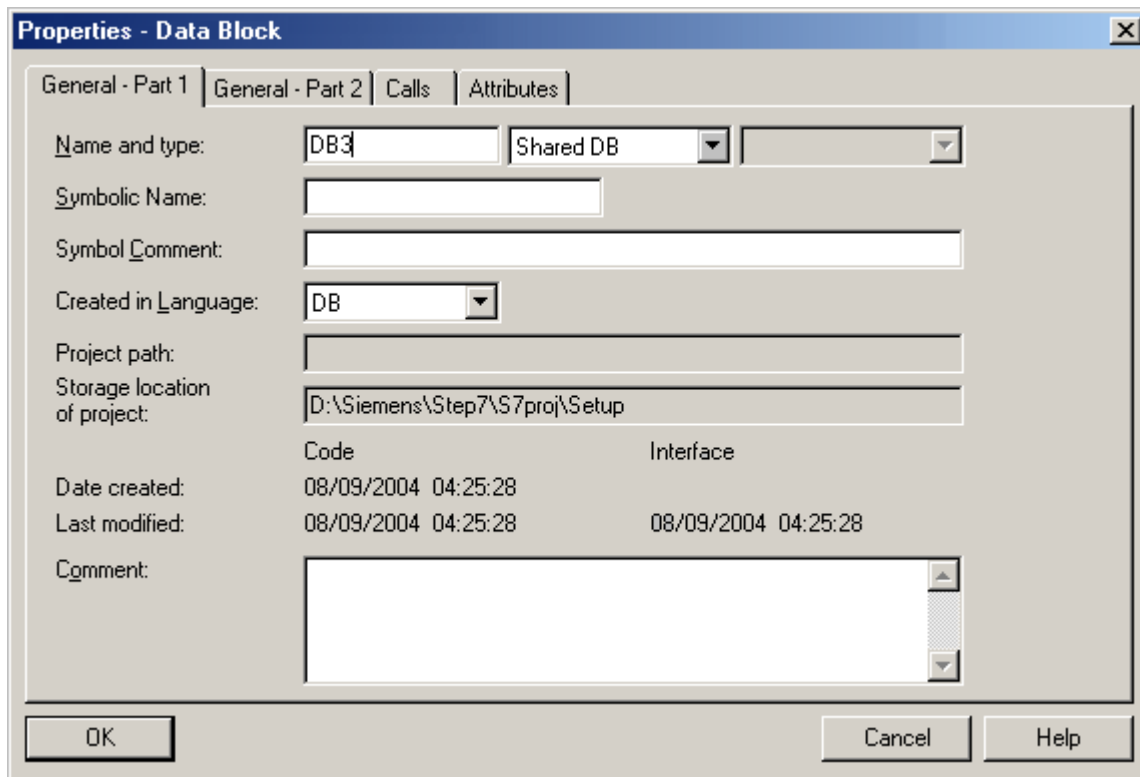
While filling the details of the GET FB above, the data block "DB3" was used for the **RD\_1** field. This is the data block that will store the read values.

1. To start, right-click in the right pane of the SIMATIC Manager window and then click **Insert New Object**.
2. Next, select **Data Block**.

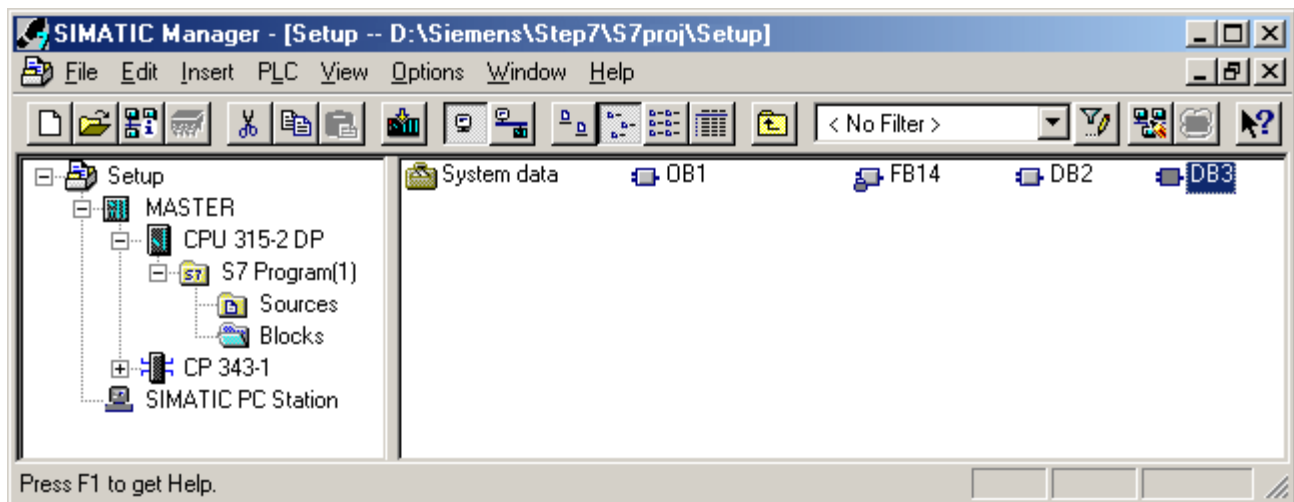


3. Change the name to "DB3."

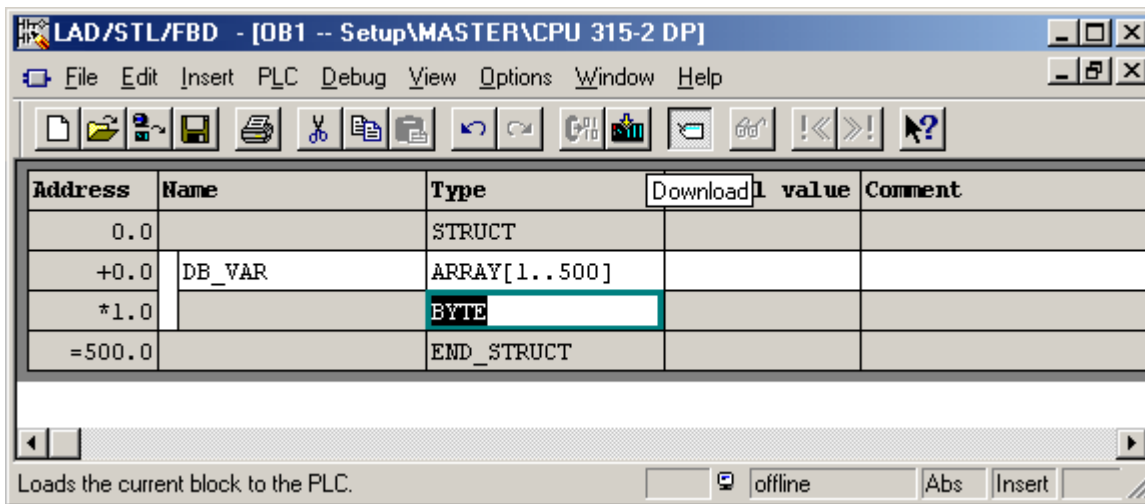
**Note:** The window should appear as shown below.



4. Data block DB3 should be created as shown below.



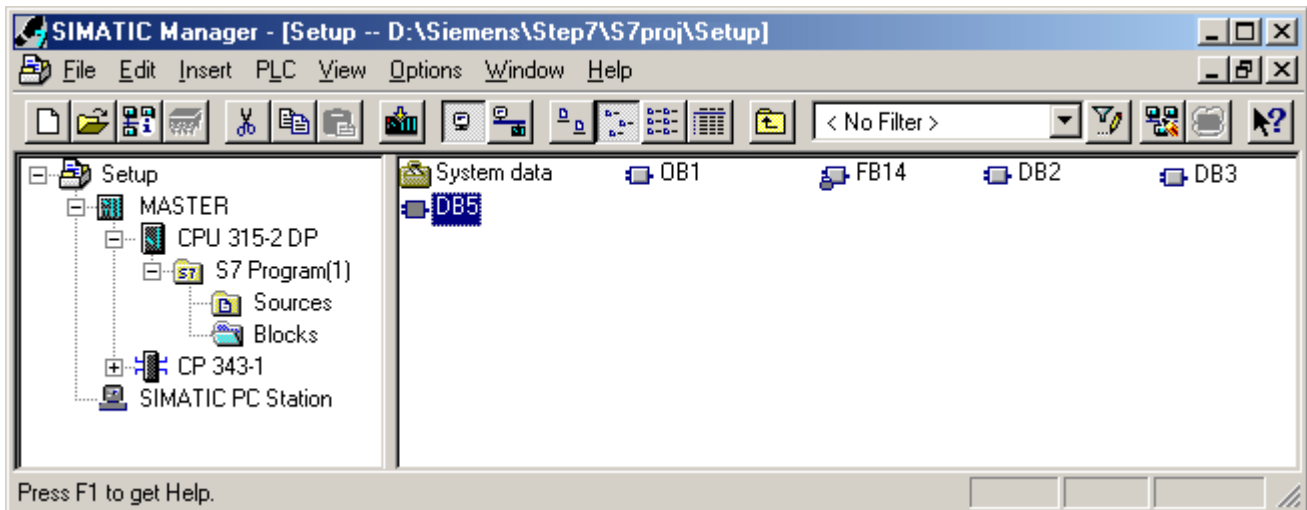
5. Double-click on the **DB3** icon. In order to assign some memory to the data block, users can make changes similar to those shown in the window below. The array size of 500 bytes was chosen arbitrarily. Other values for type and size may be chosen according to the particular need.



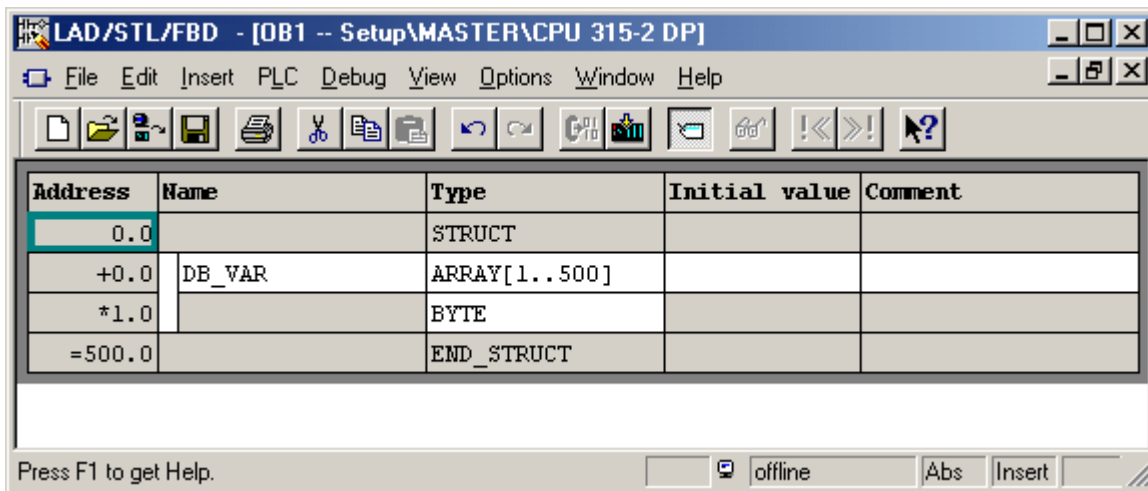
7. **Save** and close the **LAD/STL/FBD** window.

### Inserting PUT FB

A separate data block will also be needed for the PUT FB, which will hold the data that is written to the remote partner. Follow the steps similar to above to insert this new data block and then name it "DB5."



1. Double-click on the **DB5** icon. As shown below, allocate a certain memory size to this data block. The array size of 500 bytes was chosen arbitrarily. Other values for type and size may be chosen according to the particular need.



2. To insert the PUT FB, double-click on **OB1** in the SIMATIC Manager window.
3. In the **LAD/STL/FBD** window that appears, right-click in the blank space below the GET FB.
4. Click on **Insert Network** and then click on the blank space below.

LAD/STL/FBD - [OB1 -- Setup\MASTER\CPU 315-2 DP]

File Edit Insert PLC Debug View Options Window Help

| Address | Declaration | Name           | Type       | Initial value | Comment                            |
|---------|-------------|----------------|------------|---------------|------------------------------------|
| 0.0     | temp        | OB1_EV_CLASS   | BYTE       |               | Bits 0-3=1 (Coming event), Bits 4  |
| 1.0     | temp        | OB1_SCAN_1     | BYTE       |               | 1 (Cold restart scan 1 of OB 1), 3 |
| 2.0     | temp        | OB1_PRIORITY   | BYTE       |               | Priority of OB Execution           |
| 3.0     | temp        | OB1_OB_NUMBR   | BYTE       |               | 1 (Organization block 1, OB1)      |
| 4.0     | temp        | OB1_RESERVED_1 | BYTE       |               | Reserved for system                |
| 5.0     | temp        | OB1_RESERVED_2 | BYTE       |               | Reserved for system                |
| 6.0     | temp        | OB1_PREV_CYCLE | INT        |               | Cycle time of previous OB1 sca     |
| 8.0     | temp        | OB1_MIN_CYCLE  | INT        |               | Minimum cycle time of OB1 (mil     |
| 10.0    | temp        | OB1_MAX_CYCLE  | INT        |               | Maximum cycle time of OB1 (mil     |
| 12.0    | temp        | OB1_DATE_TIME  | DATE_AND_T |               | Date and time OB1 started          |

DB2

"GET"

MO.0 — EN

MO.1 — REQ

W#16#1 — ID

P#I 0.0 BY  
TE 10 — ADDR\_1

P#DB3.DBX0  
.0 BYTE 10 — RD\_1

NDR — MO.2

ERROR — MO.3

STATUS — MW1

ENO —

**Symbol information:**

|      |     |                             |
|------|-----|-----------------------------|
| FB14 | GET | Read Data From a Remote CPU |
|------|-----|-----------------------------|

**Network 2:** Title:

Comment:

- Click **Insert** and then select **Program Elements**.
- Expand the **Libraries** menu, the **SIMATIC\_NET\_CP** menu and the **CP 300** menu.
- Next, double-click on **FB15 PUT** to insert a function block to write data.
- Close the **Program Elements** window.

LAD/STL/FBD - [OB1 -- Setup\MASTER\CPU 315-2 DP]

File Edit Insert PLC Debug View Options Window Help

| Address | Declaration | Name           | Type       | Initial value | Comment                            |
|---------|-------------|----------------|------------|---------------|------------------------------------|
| 0.0     | temp        | OB1_EV_CLASS   | BYTE       |               | Bits 0-3=1 (Coming event), Bits 4- |
| 1.0     | temp        | OB1_SCAN_1     | BYTE       |               | 1 (Cold restart scan 1 of OB1), 3( |
| 2.0     | temp        | OB1_PRIORITY   | BYTE       |               | Priority of OB Execution           |
| 3.0     | temp        | OB1_OB_NUMBR   | BYTE       |               | 1 (Organization block 1, OB1)      |
| 4.0     | temp        | OB1_RESERVED_1 | BYTE       |               | Reserved for system                |
| 5.0     | temp        | OB1_RESERVED_2 | BYTE       |               | Reserved for system                |
| 6.0     | temp        | OB1_PREV_CYCLE | INT        |               | Cycle time of previous OB1 scan    |
| 8.0     | temp        | OB1_MIN_CYCLE  | INT        |               | Minimum cycle time of OB1 (mill    |
| 10.0    | temp        | OB1_MAX_CYCLE  | INT        |               | Maximum cycle time of OB1 (mill    |
| 12.0    | temp        | OB1_DATE_TIME  | DATE_AND_T |               | Date and time OB1 started          |

.0 BYTE 10 — RD\_1 — ENO —

**Symbol information:**

|      |     |                             |
|------|-----|-----------------------------|
| FB14 | GET | Read Data From a Remote CPU |
|------|-----|-----------------------------|

**Network 2**: Title:

Comment:

```

graph LR
    EN[EN] --> PUT[PUT]
    REQ[REQ] --> PUT
    ID[ID] --> PUT
    ADDR_1[ADDR_1] --> PUT
    SD_1[SD_1] --> PUT
    PUT --> DONE[DONE]
    PUT --> ERROR[ERROR]
    PUT --> STATUS[STATUS]
    PUT --> ENO[ENO]
  
```

9. Next, associate a data block (DB) with this function block (FB) by clicking above the FB where there are three red question marks.

10. Enter the name of a data block, such as "DB4."

11. A window prompt will ask to confirm if this new data block should be created. Click **Yes** to create the data block "DB4."

12. Fill in the other details as appropriate. The following image may be used as an example for placing values for the various fields in the function block.

**Note:** When filling in fields in the PUT FB, consider the following:

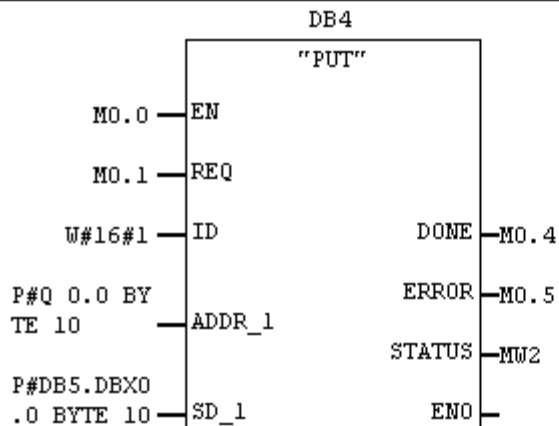
- "ADDR\_1" address on the destination device in the unsolicited driver.

- "SD\_1" is the address local to the PLC.
- The value at the local address specified by "SD\_1" is written (PUT) to the remote address specified by "ADDR\_1".
- Enter the Local ID number that was generated when setting up the connection between the Master and the Slave Driver in the **ID** field. In this example, the Local ID number is 1.

**Important:** The number of bytes in both the "ADDR\_1" and "SD\_1" fields should be same for the unsolicited driver to respond correctly. Otherwise, an error message will be sent.

| LAD/STL/FBD - [OB1 -- Setup\MASTER\CPU 315-2 DP] |             |                |            |               |                                     |
|--------------------------------------------------|-------------|----------------|------------|---------------|-------------------------------------|
| Address                                          | Declaration | Name           | Type       | Initial value | Comment                             |
| 0.0                                              | temp        | OB1_EV_CLASS   | BYTE       |               | Bits 0-3=1 (Coming event), Bits 4-  |
| 1.0                                              | temp        | OB1_SCAN_1     | BYTE       |               | 1 (Cold restart scan 1 of OB 1), 3( |
| 2.0                                              | temp        | OB1_PRIORITY   | BYTE       |               | Priority of OB Execution            |
| 3.0                                              | temp        | OB1_OB_NUMBR   | BYTE       |               | 1 (Organization block 1, OB1)       |
| 4.0                                              | temp        | OB1_RESERVED_1 | BYTE       |               | Reserved for system                 |
| 5.0                                              | temp        | OB1_RESERVED_2 | BYTE       |               | Reserved for system                 |
| 6.0                                              | temp        | OB1_PREV_CYCLE | INT        |               | Cycle time of previous OB1 scan     |
| 8.0                                              | temp        | OB1_MIN_CYCLE  | INT        |               | Minimum cycle time of OB1 (mill     |
| 10.0                                             | temp        | OB1_MAX_CYCLE  | INT        |               | Maximum cycle time of OB1 (mill     |
| 12.0                                             | temp        | OB1_DATE_TIME  | DATE_AND_T |               | Date and time OB1 started           |

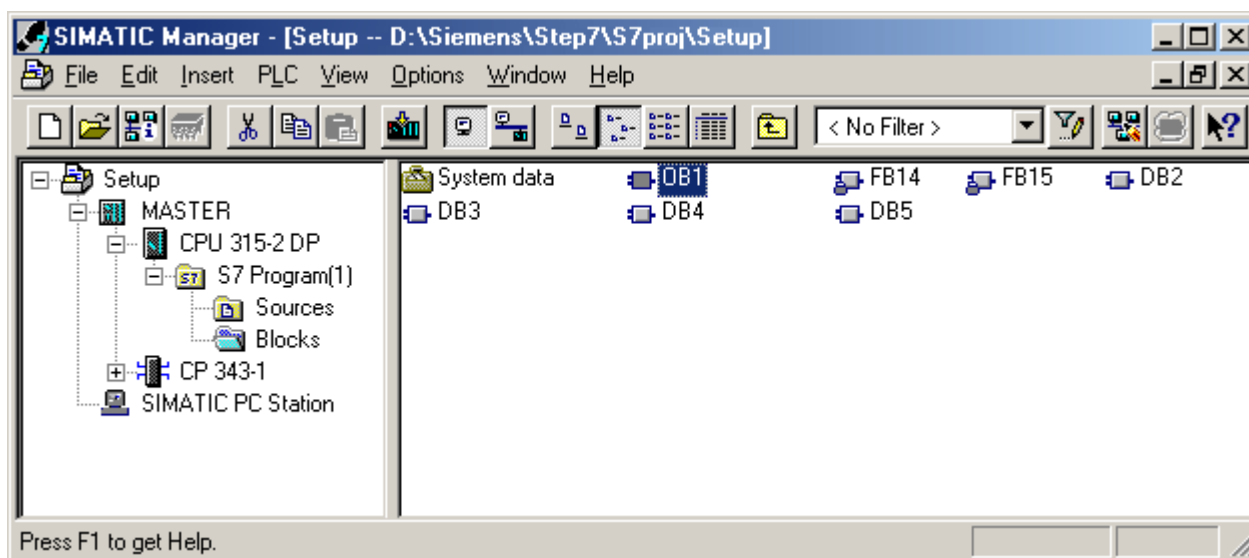
Comment:



**Symbol information:**

|      |     |                            |
|------|-----|----------------------------|
| FB15 | PUT | Write Data to a Remote CPU |
|------|-----|----------------------------|

13. To finish, **Save** and close the **LAD/STL/FBD** window.

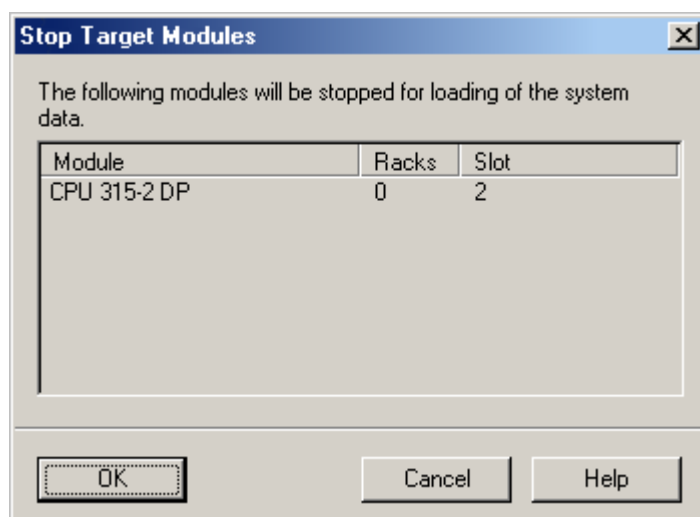


### Downloading to the PLC

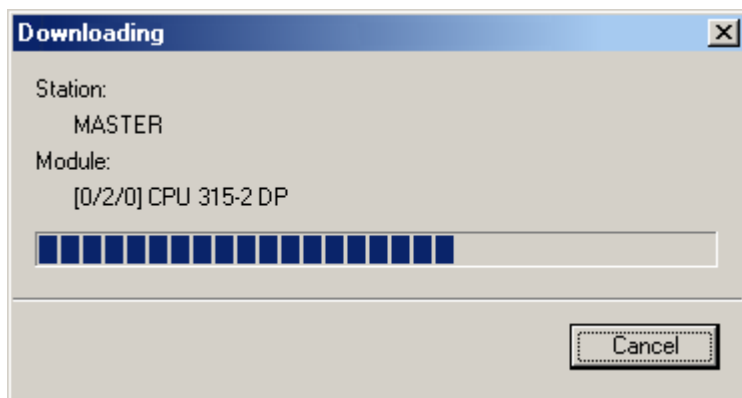
Now that the Master has been prepared to generate Read/Write requests for the remote unsolicited partner, the details must be downloaded to the PLC.

1. To start, click on Master in the left pane of the SIMATIC Manager window.
2. Click on the **PLC** menu.
3. Next, select **Download** to begin downloading the project to the PLC.

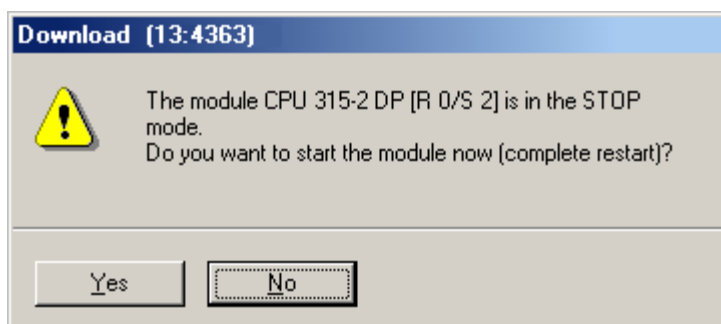
**Note:** The dialog boxes will appear as shown below.



4. Click **OK**.



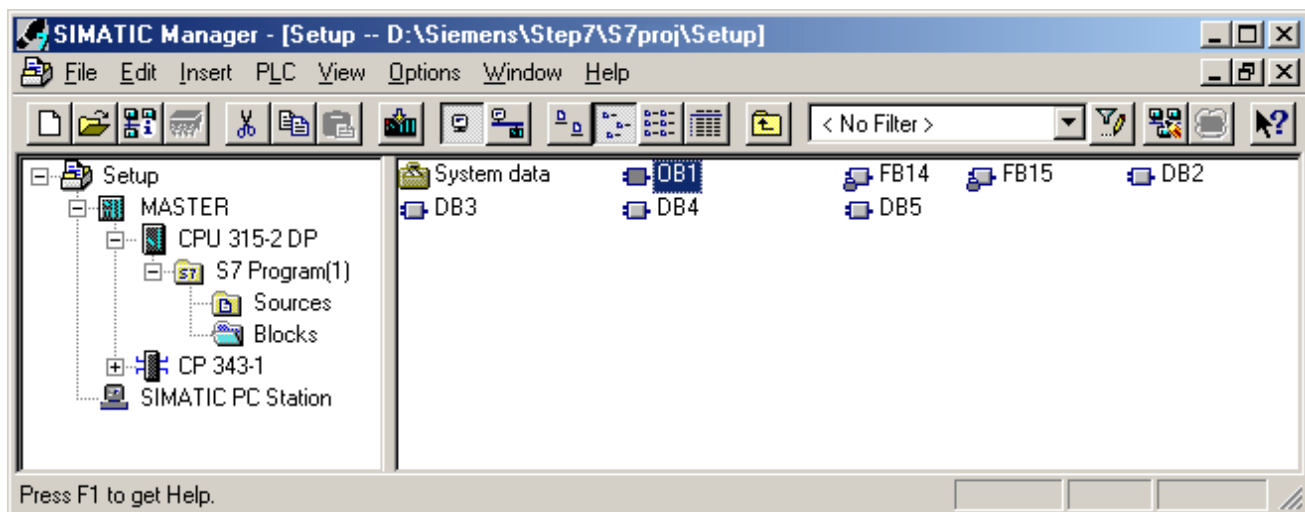
5. Click **Yes**.



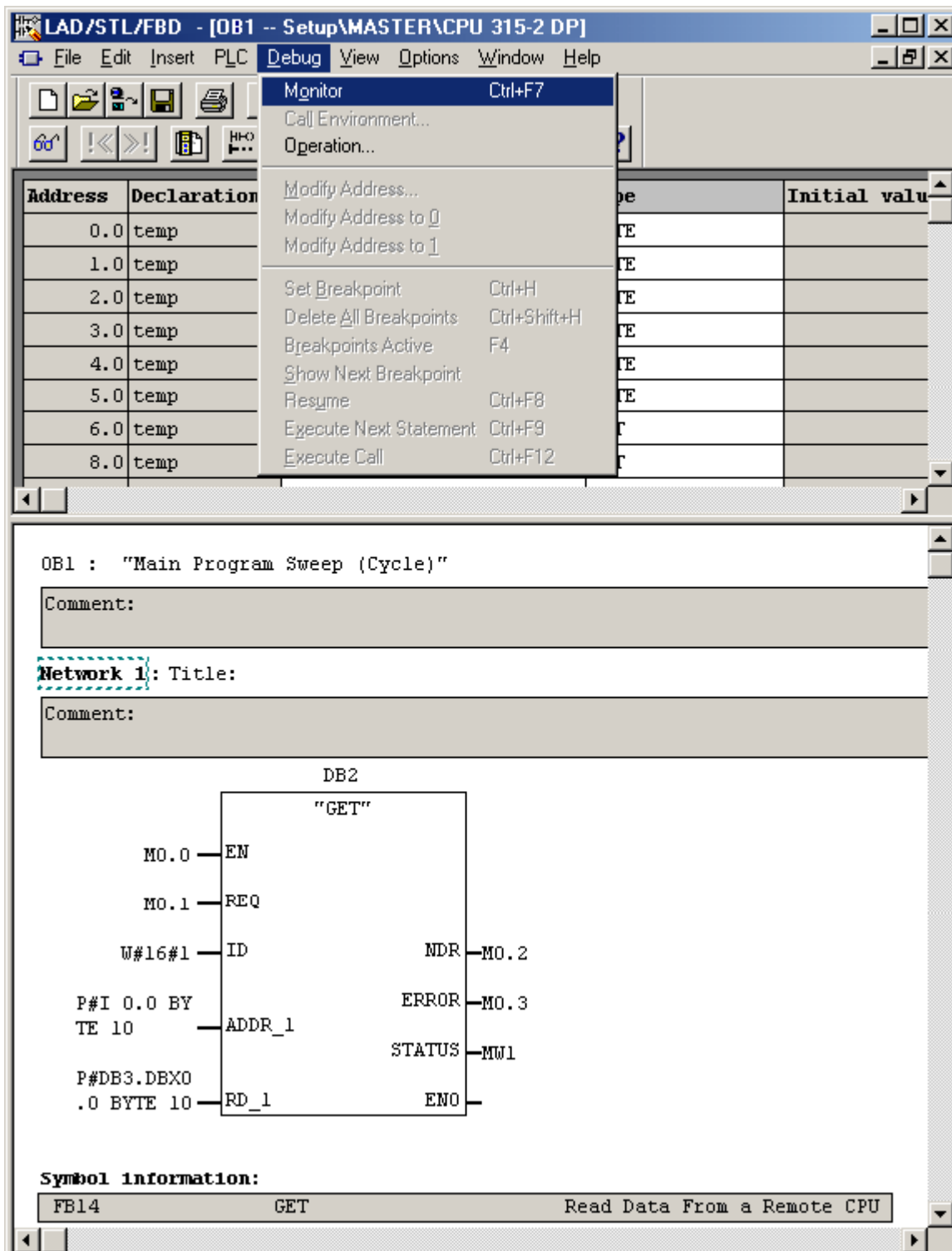
### To Run the Master

The master must be run in order to trigger the function blocks that generate Read/Write requests.

1. Double-click on **OB1** in the SIMATIC Manager window.



2. In the **LAD/STL/FBD** window, click **Debug | Monitor**.



3. The **LAD/STL/FBD** window should appear in Online Mode, as shown below.

LAD/STL/FBD - [@OB1 -- Setup\MASTER\CPU 315-2 DP] ONLINE

File Edit Insert PLC Debug View Options Window Help

| Address | Declaration | Name           | Type | Initial value |
|---------|-------------|----------------|------|---------------|
| 0.0     | temp        | OB1_EV_CLASS   | BYTE |               |
| 1.0     | temp        | OB1_SCAN_1     | BYTE |               |
| 2.0     | temp        | OB1_PRIORITY   | BYTE |               |
| 3.0     | temp        | OB1_OB_NUMBR   | BYTE |               |
| 4.0     | temp        | OB1_RESERVED_1 | BYTE |               |
| 5.0     | temp        | OB1_RESERVED_2 | BYTE |               |
| 6.0     | temp        | OB1_PREV_CYCLE | INT  |               |
| 8.0     | temp        | OB1_MIN_CYCLE  | INT  |               |

OB1 : "Main Program Sweep (Cycle)"

Comment:

**Network 1**: Title:

Comment:

DB2  
"GET"

MO.0 EN  
MO.1 REQ  
16#0001 W#16#1 ID  
P#I 0.0 BY TE 10 ADDR\_1  
P#DB3.DBX0 .0 BYTE 10 RD\_1

NDR M0.2  
ERROR M0.3  
STATUS M0.1  
ENO

**Symbol information:**

|      |     |                             |
|------|-----|-----------------------------|
| FB14 | GET | Read Data From a Remote CPU |
|------|-----|-----------------------------|

Press F1 to get Help.

**RUN** Abs

4. To execute the **GET/PUT FBs**, which work on a rising edge, change the **REQ value** to 0 and then 1. This indicates the rising edge. To do so, right-click on the **REQ** field and select **Modify to 0** to force a zero to the field.

LAD/STL/FBD - [@OB1 -- Setup\MASTER\CPU 315-2 DP] ONLINE

File Edit Insert PLC Debug View Options Window Help

| Address | Declaration | Name           | Type | Initial value |
|---------|-------------|----------------|------|---------------|
| 0.0     | temp        | OB1_EV_CLASS   | BYTE |               |
| 1.0     | temp        | OB1_SCAN_1     | BYTE |               |
| 2.0     | temp        | OB1_PRIORITY   | BYTE |               |
| 3.0     | temp        | OB1_OB_NUMBR   | BYTE |               |
| 4.0     | temp        | OB1_RESERVED_1 | BYTE |               |
| 5.0     | temp        | OB1_RESERVED_2 | BYTE |               |
| 6.0     | temp        | OB1_PREV_CYCLE | INT  |               |
| 8.0     | temp        | OB1_MIN_CYCLE  | INT  |               |

OB1 : "Main Program Sweep (Cycle)"

Comment:

**Network 1**: Title:

Comment:

MO.0 1 EN

MO.1 1 REQ

DB2

"GET"

00

Copy Ctrl+C

Insert Empty Box Alt+F9

Modify to 0

Modify to 1

Go to Location... Ctrl+Alt+Q

Edit Symbols... Alt+Return

Special Object Properties

Symbol information

FB14 GET Read Data From a Remote CPU

The statements are not being processed.

RUN Abs Nw 1

5. Next, right-click on the **REQ** field and select **Modify to 1** to force a value of one to the field.

**LAD/STL/FBD - [@OB1 -- Setup\MASTER\CPU 315-2 DP] ONLINE**

File Edit Insert PLC Debug View Options Window Help

| Address | Declaration | Name           | Type | Initial value |
|---------|-------------|----------------|------|---------------|
| 0.0     | temp        | OB1_EV_CLASS   | BYTE |               |
| 1.0     | temp        | OB1_SCAN_1     | BYTE |               |
| 2.0     | temp        | OB1_PRIORITY   | BYTE |               |
| 3.0     | temp        | OB1_OB_NUMBR   | BYTE |               |
| 4.0     | temp        | OB1_RESERVED_1 | BYTE |               |
| 5.0     | temp        | OB1_RESERVED_2 | BYTE |               |
| 6.0     | temp        | OB1_PREV_CYCLE | INT  |               |
| 8.0     | temp        | OB1_MIN_CYCLE  | INT  |               |

OB1 : "Main Program Sweep (Cycle)"

Comment:

**Network 1:** Title:

Comment:

**Symbol information:**

| Symbol | Function | Description                 |
|--------|----------|-----------------------------|
| FB14   | GET      | Read Data From a Remote CPU |

Modifies the selected address once to 1.

**RUN** Abs Nw 1

6. Both of the FBs must next be configured so that they are set up to respond to the same rising edge. This will allow the variables in the SIMATIC Manager to be locally monitored and modified.

7. In the **LAD/STL/FBD** window, click on **PLC**.

8. Select **Monitor/Modify variables**, then enter the variables to be monitored. To view the changes made to this window, execute the function blocks.

**Note:** Remember that the slot/rack value of the remote device that the master is communicating with is "rack:0 slot:2". The values can easily be changed from the NetPro window. Make sure that the unsolicited driver on the other end has a device with these values and is running.

## Data Types Description

| Data Type | Description                                                                                                                                                                                    |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Boolean   | Single bit                                                                                                                                                                                     |
| Byte      | Unsigned 8 bit value                                                                                                                                                                           |
| Char      | Signed 8 bit value                                                                                                                                                                             |
| Word      | Unsigned 16 bit value<br><br>bit 0 is the low bit<br>bit 15 is the high bit                                                                                                                    |
| Short     | Signed 16 bit value<br><br>bit 0 is the low bit<br>bit 14 is the high bit<br>bit 15 is the sign bit                                                                                            |
| DWord     | Unsigned 32 bit value<br><br>bit 0 is the low bit<br>bit 31 is the high bit                                                                                                                    |
| Long      | Signed 32 bit value<br><br>bit 0 is the low bit<br>bit 30 is the high bit<br>bit 31 is the sign bit                                                                                            |
| BCD       | Two byte packed BCD<br><br>Value range is 0-9999. Behavior is undefined for values beyond this range.                                                                                          |
| LBCD      | Four byte packed BCD<br><br>Value range is 0-99999999. Behavior is undefined for values beyond this range.                                                                                     |
| Float     | 32 bit floating point value.<br><br>The driver interprets two consecutive registers as a floating point value by making the second register the high word and the first register the low word. |
| String    | NULL Terminated ASCII String                                                                                                                                                                   |

## S7-300 Address Descriptions

The default data types for dynamically defined tags are shown in **bold**.

| Address Type    | Range                                 | Type                         | Access     |
|-----------------|---------------------------------------|------------------------------|------------|
| Discrete Inputs | I0.b-I4095.b*<br>.b is Bit Number 0-7 | <b>Boolean</b>               | Read/Write |
|                 | IB0-IB4095                            | <b>Byte</b> , Char, String** | Read/Write |
|                 | IW0-IW4094                            | <b>Word</b> , Short, BCD     | Read/Write |

|                  |                                        |                                  |            |
|------------------|----------------------------------------|----------------------------------|------------|
| Discrete Inputs  | IW:KT0-IW:KT4094                       | DWord, <b>Long</b>               | Read/Write |
|                  | IW:KC0-IW:KC4094                       | <b>Word</b> , Short              | Read/Write |
|                  | ID0-ID4092                             | <b>DWord</b> , Long, LBCD, Float | Read/Write |
|                  | E0.b-E4095.b*<br>.b is Bit Number 0-7  | <b>Boolean</b>                   | Read/Write |
|                  | EB0-EB4095**                           | <b>Byte</b> , Char, String**     | Read/Write |
|                  | EW0-EW4094                             | <b>Word</b> , Short, BCD         | Read/Write |
| Discrete Outputs | EW:KT0-EW:KT4094                       | DWord, <b>Long</b>               | Read/Write |
|                  | EW:KC0-EW:KC4094                       | <b>Word</b> , Short              | Read/Write |
|                  | ED0-ED4092                             | <b>DWord</b> , Long, LBCD, Float | Read/Write |
| Discrete Outputs | Q0.b-Q4095.b*<br>.b is Bit Number 0-7  | <b>Boolean</b>                   | Read/Write |
|                  | QB0-QB4095                             | <b>Byte</b> , Char, String**     | Read/Write |
|                  | QW0-QW4094                             | <b>Word</b> , Short, BCD         | Read/Write |
|                  | QW:KT0-QW:KT4094                       | DWord, <b>Long</b>               | Read/Write |
|                  | QW:KC0-QW:KC4094                       | <b>Word</b> , Short              | Read/Write |
|                  | QD0-QD4092                             | <b>DWord</b> , Long, LBCD, Float | Read/Write |
| Discrete Outputs | A0.b- A4095.b*<br>.b is Bit Number 0-7 | <b>Boolean</b>                   | Read/Write |
|                  | AB0-AB4095                             | <b>Byte</b> , Char, String**     | Read/Write |
|                  | AW0-AW4094                             | <b>Word</b> , Short, BCD         | Read/Write |
|                  | AW:KT0-AW:KT4094                       | DWord, <b>Long</b>               | Read/Write |
|                  | AW:KC0-AW:KC4094                       | <b>Word</b> , Short              | Read/Write |
|                  | AD0-AD4092                             | <b>DWord</b> , Long, LBCD, Float | Read/Write |
| Internal Memory  | F0.b-F4095.b*<br>.b is Bit Number 0-7  | <b>Boolean</b>                   | Read/Write |
|                  | FB0-FB4095                             | <b>Byte</b> , Char, String**     | Read/Write |
|                  | FW0-FW4094                             | <b>Word</b> , Short, BCD         | Read/Write |
|                  | FW:KT0-FW:KT4094                       | DWord, <b>Long</b>               | Read/Write |
|                  | FW:KC0-FW:KC4094                       | <b>Word</b> , Short              | Read/Write |
|                  | FD0-FD4092                             | <b>DWord</b> , Long, LBCD, Float | Read/Write |
| Internal Memory  | M0.b-M4095.b*<br>.b is Bit Number 0-7  | <b>Boolean</b>                   | Read/Write |
|                  | MB0-MB4095                             | <b>Byte</b> , Char, String**     | Read/Write |
|                  | MW0-MW4094                             | <b>Word</b> , Short, BCD         | Read/Write |
|                  | MW:KT0-MW:KT4094                       | DWord, <b>Long</b>               | Read/Write |
|                  | MW:KC0-MW:KC4094                       | <b>Word</b> , Short              | Read/Write |

**Note:** F and M access the same

|                             |                                                                                                                                                                                                                                                          |                                                                                                                          |                                                        |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| memory area.                | MD0- MD4092                                                                                                                                                                                                                                              | <b>DWord</b> , Long, LBCD, Float                                                                                         | Read/Write                                             |
| Data Block Boolean          | DB1-N:KM0.b-KM4094.b*<br>1-N is Block Number<br>.b is Bit Number 0-15<br><br><i>Alternates</i><br><br>DB1DBX0.b-DBNDBX4094.b*<br>1-N is Block Number<br>.b is Bit Number 0-15<br><br>DB1D0.b-DBND4094.b*<br>1-N is Block Number<br>.b is Bit Number 0-15 | <b>Boolean</b><br><br><br><b>Boolean</b><br><br><br><b>Boolean</b>                                                       | Read/Write<br><br><br>Read/Write<br><br><br>Read/Write |
| Data Block Left Byte        | DB1-N:KL0-KL4095<br>1-N is Block Number<br><br><i>Alternates</i><br><br>DB1DBB0-DBNDBB4095<br>1-N is Block Number<br><br>DB1DL0-DBNDL4095<br>1-N is Block Number                                                                                         | <b>Byte</b> , Char, String**<br><br><br><b>Byte</b> , Char, String**<br><br><br><b>Byte</b> , Char, String**             | Read/Write<br><br><br>Read/Write<br><br><br>Read/Write |
| Data Block Right Byte       | DB1-N:KR0-KR4094<br>1-N is Block Number<br><br><i>Alternates</i><br><br>DB1DR0-DBNDR4094<br>1-N is Block Number                                                                                                                                          | <b>Byte</b> , Char, String**<br><br><br><b>Byte</b> , Char, String**                                                     | Read/Write<br><br><br>Read/Write                       |
| Data Block Unsigned Word    | DB1-N:KH0-KH4094<br>1-N is Block Number                                                                                                                                                                                                                  | <b>Word</b> , Short, BCD                                                                                                 | Read/Write                                             |
| Data Block Signed Word      | DB1-N:KF0-KF4094<br>1-N is Block Number<br><br><i>Alternates</i><br><br>DB1DBW0-DBNDBW4094<br>1-N is Block Number<br><br>DB1DW0-DBNDW4094<br>1-N is Block Number                                                                                         | Word, <b>Short</b> , BCD<br><br><br>Word, <b>Short</b> , BCD<br><br><br>Word, <b>Short</b> , BCD                         | Read/Write<br><br><br>Read/Write<br><br><br>Read/Write |
| Data Block Signed Long      | DB1-N:KD0-KD4092<br>1-N is Block Number<br><br><i>Alternates</i><br><br>DB1DBD0-DB1DBD4092<br>1-N is Block Number<br><br>DB1DD0-DB1DD4092<br>1-N is Block Number                                                                                         | DWord, <b>Long</b> , LBCD, Float<br><br><br>DWord, <b>Long</b> , LBCD, Float<br><br><br>DWord, <b>Long</b> , LBCD, Float | Read/Write<br><br><br>Read/Write<br><br><br>Read/Write |
| Data Block Float            | DB1-N:KG0-KG4092<br>1-N is Block Number                                                                                                                                                                                                                  | <b>Float</b>                                                                                                             | Read/Write                                             |
| Data Block BCD              | DB1-N:BCD0-BCD4094<br>1-N is Block Number                                                                                                                                                                                                                | <b>Word</b> , Short                                                                                                      | Read/Write                                             |
| Data Block S5 Timer as DB   | DB1-N:KT0-KT4094<br>1-N is Block Number                                                                                                                                                                                                                  | DWord, <b>Long</b>                                                                                                       | Read/Write                                             |
| Data Block S5 Counter as DB | DB1-N:KC0-KC4094<br>1-N is Block Number                                                                                                                                                                                                                  | <b>Word</b> , Short                                                                                                      | Read/Write                                             |

|                   |                                                            |        |            |
|-------------------|------------------------------------------------------------|--------|------------|
| Data Block String | DB1:S0.n-DB1:S4095.n*<br>.n is string length.<br>0<n<=218. | String | Read/Write |
|-------------------|------------------------------------------------------------|--------|------------|

\*These memory types/subtypes do not support arrays.

\*\*Byte memory types (MB) support strings. The syntax for strings is `<address>.<length>` where  $0 < \text{length} \leq 218$ .

**Note 1:** All offsets for memory types I, Q, and F represent a byte starting location within the specified memory type.

**Note 2:** Use caution when modifying Word, Short, DWord, and Long types. For I, Q and F, each address starts at a byte offset within the device. Therefore, Words FW0 and FW1 overlap at byte 1. Writing to FW0 will also modify the value held in FW1. Similarly, DWord, and Long types can also overlap. It is recommended that these memory types be used so that overlapping does not occur. For example, when using DWords, FD0, FD4, FD8 and so on should be used in order to prevent overlapping bytes.

## Arrays

All memory types/subtypes support arrays (excepting those discussed above). The valid syntax for declaring an array is described below. If no rows are specified, row count of 1 is assumed.

```
<address>[rows][cols]
<address>.rows.cols
<address>,rows,cols
<address>_rows_cols
```

For Word, Short, BCD and "KT" arrays, the base address+(rows\*cols\*2) cannot exceed 4096. The elements of the array are words, and are located on a word boundary. For example, IW0[4] would return IW0, IW2, IW4 and IW6. "KT" subtypes fall into the 16-bit category because the data stored in the PLC is contained within a Word.

For Float, DWord, Long and Long BCD arrays (excluding "KT" subtypes), the base address+(rows\*cols\*4) cannot exceed 4096. Keep in mind that the elements of the array are DWords, located on a DWord boundary. For example, ID0[4] will return ID0, ID4, ID8 and ID12.

For all arrays, the total number of bytes being requested cannot exceed the internal block size of 218 bytes.

## KL vs. KR vs. DBB

KL and KR determine whether the left byte or right byte of the data block word is returned.

|       |   |   |   |   |   |
|-------|---|---|---|---|---|
| Value | 8 | 9 | A | B | C |
| Byte  | 0 | 1 | 2 | 3 | 4 |

### Example 1

```
DB1:KH0=0x89
DB1:KL0=0x8
DB1:KR0=0x9
DB1:DBB0=0x8
```

### Example 2

```
DB1:KH1=0x9A
DB1:KL1=0x9
DB1:KR1=0xA
DB1:DBB1=0x9
```

## Examples

1. To access bit 3 of Internal Memory F20, declare an address as follows:  
F20.3

2. To access Data Block 5 as word memory at byte 30, declare an address as follows:  
DB5:KH30

3. To access Data Block 2 byte 20 and bit 7, declare an address as follows:  
DB2:KM20.7

4. To access Data Block 1 as left byte memory at byte 10, declare an address as follows:  
DB1:KL10

5. To access Internal Memory F20 as a DWord, declare an address as follows:  
FD20

6. To access Input Memory I10 as a Word, declare an address as follows:  
IW10

---

## Error Descriptions

The following error/warning messages may be generated. Click on the link for a description of the message.

### Address Validation

#### [Missing address](#)

[Device address '<address>' contains a syntax error](#)

[Address '<address>' is out of range for the specified device or register](#)

[Data Type '<type>' is not valid for device address '<address>'](#)

[Device address '<address>' is Read Only](#)

[Array size is out of range for address '<address>'](#)

[Array support is not available for the specified address: '<address>'](#)

### Driver Error Messages

[Winsock initialization failed \(OS Error = n\)](#)

[Winsock V1.1 or higher must be installed to use the Siemens TCP/IP Slave Ethernet device driver](#)

[Failure to start unsolicited communications on Port n](#)

---

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[Array support is not available for the specified address: '<address>'](#)

---

## Missing address

### Error Type:

Warning

### Possible Cause:

A tag address that has been specified dynamically has no length.

### Solution:

Re-enter the address in the client application.

---

## Device address '<address>' contains a syntax error

### Error Type:

Warning

### Possible Cause:

A tag address that has been specified dynamically contains one or more invalid characters.

**Solution:**

Re-enter the address in the client application.

**Address '<address>' is out of range for the specified device or register**

---

**Error Type:**

Warning

**Possible Cause:**

A tag address that has been specified dynamically references a location that is beyond the range of supported locations for the device.

**Solution:**

Verify that the address is correct; if it is not, re-enter it in the client application.

**Data Type '<type>' is not valid for device address '<address>'**

---

**Error Type:**

Warning

**Possible Cause:**

A tag address that has been specified dynamically has been assigned an invalid data type.

**Solution:**

Modify the requested data type in the client application.

**Device address '<address>' is Read Only**

---

**Error Type:**

Warning

**Possible Cause:**

A tag address that has been specified dynamically has a requested access mode that is not compatible with what the device supports for that address.

**Solution:**

Change the access mode in the client application.

**Array size is out of range for address '<address>'**

---

**Error Type:**

Warning

**Possible Cause:**

A tag address that has been specified dynamically is requesting an array size that is too large for the address type or block size of the driver.

**Solution:**

Re-enter the address in the client application to specify a smaller value for the array or a different starting point.

**Array Support is not available for the specified address: '<address>'**

---

**Error Type:**

Warning

**Possible Cause:**

A tag address that has been specified dynamically contains an array reference for an address type that doesn't support arrays.

**Solution:**

Re-enter the address in the client application to remove the array reference or correct the address type.

---

**Driver Error Messages**

The following error/warning messages may be generated. Click on the link for a description of the message.

**Driver Error Messages**

[Winsock initialization failed \(OS Error = n\)](#)

[Winsock V1.1 or higher must be installed to use the Siemens TCP/IP Slave Ethernet driver](#)

[Failure to start unsolicited communications on Port n](#)

---

**Winsock initialization failed (OS Error=n)****Error Type:**

Fatal

| OS Error | Indication                                                                                     | Possible Solution                                                                |
|----------|------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| 10091    | Indicates that the underlying network subsystem is not ready for network communication.        | Wait a few seconds and restart the driver.                                       |
| 10067    | Limit on the number of tasks supported by the Windows Sockets implementation has been reached. | Close one or more applications that may be using Winsock and restart the driver. |

---

**Winsock V1.1 or higher must be installed to use the Siemens TCP/IP Slave Ethernet device driver****Error Type:**

Fatal

**Possible Cause:**

The version number of the Winsock DLL found on the system is less than 1.1.

**Solution:**

Upgrade Winsock to version 1.1 or higher.

---

**Failure to start unsolicited communications on Port n****Error Type:**

Fatal

**Possible Cause:**

The driver was not able to create a listen socket for unsolicited communications. This is most often due to another application using the port specified. Much less likely causes are related to low system resources.

**Solution:**

Use network monitor software to check if any other application is using the port. If so, shut down the conflicting application and restart the OPC Server. In many cases, the conflicting application is free to pick any available port. If this is the case, make sure the server is always started first so that it may claim the required port. If both the PLC programming software and this driver use the same port, they may not be able to be used simultaneously.

**See Also:**

[Channel Setup](#)



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