Siemens TCP/IP Server Ethernet Driver

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Siemens TCP/IP Server Ethernet Driver

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Overview

What is the Siemens TCP/IP Server Ethernet Driver?

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What messages does the driver produce?

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Overview

The Siemens TCP/IP Server Ethernet Driver provides a reliable way to connect Siemens TCP/IP server devices to client applications; including HMI, SCADA, Historian, MES, ERP, and countless custom applications. This driver acts as a simulated Siemens PLC. It is intended for simulation of Siemens S7-300.

Setup

Supported Protocols

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

Supported Commands

FB14-GET (S7-300) FB15-PUT (S7-300) SFB14-GET (S7-400, S7-1500) SFB15-PUT (S7-400, S7-1500)

Channel and Device Limits

The maximum number of channels supported by this driver is 1. The maximum number of virtual devices supported by this driver is 256 per channel.

Libraries

This driver requires a standard Ethernet card. No special libraries or hardware are needed.

Note: To communicate with this driver, devices require specialized ladder programming.

Channel Properties <u>Device Properties</u> <u>Siemens Client Device Configuration</u> Appendix: Configuring Connections Using the SIMATIC Manager

Channel Properties – General

This server supports the use of multiple simultaneous communications drivers. Each protocol or driver used in a server project is called a channel. A server project may consist of many channels with the same communications driver or with unique communications drivers. A channel acts as the basic building block of an OPC link. This group is used to specify general channel properties, such as the identification attributes and operating mode.

Property Groups	Identification	
General	Name	
Write Ontininations	Description	
Adversed	Driver	
Advanced	Diagnostics	
	Diagnostics Capture	Disable
	Tag Counts	
	Static Tags	10

Identification

Name: Specify the user-defined identity of this channel. In each server project, each channel name must be unique. Although names can be up to 256 characters, some client applications have a limited display window when browsing the OPC server's tag space. The channel name is part of the OPC browser information. The property is required for creating a channel.

For information on reserved characters, refer to "How To... Properly Name a Channel, Device, Tag, and Tag Group" in the server help.

Description: Specify user-defined information about this channel.

Many of these properties, including Description, have an associated system tag.

Driver: Specify the protocol / driver for this channel. Specify the device driver that was selected during channel creation. It is a disabled setting in the channel properties. The property is required for creating a channel.
 Note: With the server's online full-time operation, these properties can be changed at any time. This includes changing the channel name to prevent clients from registering data with the server. If a client has already acquired an item from the server before the channel name is changed, the items are unaffected. If, after the channel name has been changed, the client application releases the item and attempts to re-acquire using the old channel name, the item is not accepted. Changes to the properties should not be made once a large client application has been developed. Utilize proper user role and privilege management to prevent operators from changing properties or accessing server features.

Diagnostics

Diagnostics Capture: When enabled, this option makes the channel's diagnostic information available to OPC applications. Because the server's diagnostic features require a minimal amount of overhead processing, it is recommended that they be utilized when needed and disabled when not. The default is disabled.

Note: This property is not available if the driver does not support diagnostics.

For more information, refer to Communication Diagnostics in the server help.

Diagnostics

Diagnostics Capture: When enabled, this option allows the usage of statistics tags that provide feedback to client applications regarding the operation of the channel. Because the server's diagnostic features require a minimal amount of overhead processing, it is recommended that they be utilized when needed and disabled when not. The default is disabled.

Note: This property is not available if the driver does not support diagnostics.

For more information, refer to Statistics Tags in the server help.

Tag Counts

Static Tags: Provides the total number of defined static tags at this level (device or channel). This information can be helpful in troubleshooting and load balancing.

Channel Properties – Ethernet Communications

Ethernet Communication can be used to communicate with devices.

Property Groups	Ethernet Settings		
General	Network Adapter	Default	-
Ethernet Communications			
Write Optimizations			
Advanced			

Ethernet Settings

Network Adapter: Specify the network adapter to bind. When left blank or Default is selected, the operating system selects the default adapter.

Channel Properties – Write Optimizations

The server must ensure that the data written from the client application gets to the device on time. Given this goal, the server provides optimization properties to meet specific needs or improve application responsiveness.

Property Groups	Write Optimizations	
General	Optimization Method	Write Only Latest Value for All Tags
	Duty Cycle	10
write Optimizations		

Write Optimizations

Optimization Method: Controls how write data is passed to the underlying communications driver. The options are:

- Write All Values for All Tags: This option forces the server to attempt to write every value to the controller. In this mode, the server continues to gather write requests and add them to the server's internal write queue. The server processes the write queue and attempts to empty it by writing data to the device as quickly as possible. This mode ensures that everything written from the client applications is sent to the target device. This mode should be selected if the write operation order or the write item's content must uniquely be seen at the target device.
- Write Only Latest Value for Non-Boolean Tags: Many consecutive writes to the same value can accumulate in the write queue due to the time required to actually send the data to the device. If the server updates a write value that has already been placed in the write queue, far fewer writes are needed to reach the same final output value. In this way, no extra writes accumulate in the server's queue. When the user stops moving the slide switch, the value in the device is at the correct value at virtually the same time. As the mode states, any value that is not a Boolean value is updated in the server's internal write queue and sent to the device at the next possible opportunity. This can greatly improve the application performance.
 Note: This option does not attempt to optimize writes to Boolean values. It allows users to optimize the operation of HMI data without causing problems with Boolean operations, such as a momentary push button.
- Write Only Latest Value for All Tags: This option takes the theory behind the second optimization mode and applies it to all tags. It is especially useful if the application only needs to send the latest value to the device. This mode optimizes all writes by updating the tags currently in the write queue before they are sent. This is the default mode.

Duty Cycle: is used to control the ratio of write to read operations. The ratio is always based on one read for every one to ten writes. The duty cycle is set to ten by default, meaning that ten writes occur for each read operation. Although the application is performing a large number of continuous writes, it must be ensured that read data is still given time to process. A setting of one results in one read operation for every write operation. If there are no write operations to perform, reads are processed continuously. This allows optimization for applications with continuous writes versus a more balanced back and forth data flow.

• Note: It is recommended that the application be characterized for compatibility with the write optimization enhancements before being used in a production environment.

Channel Properties – Advanced

This group is used to specify advanced channel properties. Not all drivers support all properties; so the Advanced group does not appear for those devices.

Property Groups	Non-Normalized Float Handling		
General	Floating-Point Values	Replace with Zero	
Write Optimizations	Inter-Device Delay		
Advanced	Inter-Device Delay (ms)	0	

Non-Normalized Float Handling: A non-normalized value is defined as Infinity, Not-a-Number (NaN), or as a Denormalized Number. The default is Replace with Zero. Drivers that have native float handling may default to Unmodified. Non-normalized float handling allows users to specify how a driver handles non-normalized IEEE-754 floating point data. Descriptions of the options are as follows:

- **Replace with Zero**: This option allows a driver to replace non-normalized IEEE-754 floating point values with zero before being transferred to clients.
- **Unmodified**: This option allows a driver to transfer IEEE-754 denormalized, normalized, non-number, and infinity values to clients without any conversion or changes.

• Note: This property is disabled if the driver does not support floating-point values or if it only supports the option that is displayed. According to the channel's float normalization setting, only real-time driver tags (such as values and arrays) are subject to float normalization. For example, EFM data is not affected by this setting.

For more information on the floating-point values, refer to "How To ... Work with Non-Normalized Floating-Point Values" in the server help.

Inter-Device Delay: Specify the amount of time the communications channel waits to send new requests to the next device after data is received from the current device on the same channel. Zero (0) disables the delay.

• Note: This property is not available for all drivers, models, and dependent settings.

Channel Properties – Communications Properties

Property Groups	Communication Properties		
General Ethemet Communications Write Optimizations Advanced	Port Number	102	
Communication Properties			

Port Number: Specify the port number on which the driver listens. Devices must be configured to connect to this port: messages sent to all other ports are ignored by the driver. The valid range is 0 to 65535. The default setting is TCP/IP: 102 (TSAP).

• Note: Non-standard values may be required by routing and firewall issues.

Device Properties – General

A device represents a single target on a communications channel. If the driver supports multiple controllers, users must enter a device ID for each controller.

Property Groups	Identification	
General	Name	
	Description	
	Channel Assignment	
	Driver	
	Model	
	ID Format	Decimal
	ID	2

Identification

Name: Specify the name of the device. It is a logical user-defined name that can be up to 256 characters long and may be used on multiple channels.

Note: Although descriptive names are generally a good idea, some OPC client applications may have a limited display window when browsing the OPC server's tag space. The device name and channel name become part of the browse tree information as well. Within an OPC client, the combination of channel name and device name would appear as "ChannelName.DeviceName".

For more information, refer to "How To... Properly Name a Channel, Device, Tag, and Tag Group" in server help.

Description: Specify the user-defined information about this device. Many of these properties, including Description, have an associated system tag.

Channel Assignment: Specify the user-defined name of the channel to which this device currently belongs.

Driver: Selected protocol driver for this device.

Model: Specify the type of device that is associated with this ID. The contents of the drop-down menu depend on the type of communications driver being used. Models that are not supported by a driver are disabled. If the communications driver supports multiple device models, the model selection can only be changed when there are no client applications connected to the device.

• **Note:** If the communication driver supports multiple models, users should try to match the model selection to the physical device. If the device is not represented in the drop-down menu, select a model that conforms closest to the target device. Some drivers support a model selection called "Open," which allows users to communicate without knowing the specific details of the target device. *For more information, refer to the driver documentation.*

ID: Specify the device's driver-specific station or node. The type of ID entered depends on the communications driver being used. For many communication drivers, the ID is a numeric value. Drivers that support a Numeric ID provide users with the option to enter a numeric value whose format can be changed to suit the needs of the application or the characteristics of the selected communications driver. The format is set by the driver by default. Options include Decimal, Octal, and Hexadecimal.

• Note: If the driver is Ethernet-based or supports an unconventional station or node name, the device's TCP/IP address may be used as the device ID. TCP/IP addresses consist of four values that are separated by periods, with each value in the range of 0 to 255. Some device IDs are string based. There may be additional properties to configure within the ID field, depending on the driver.

Operating Mode

Property Groups	Identification	
General	Operating Mode	
	Data Collection	Enable
	Simulated	No

Data Collection: This property controls the device's active state. Although device communications are enabled by default, this property can be used to disable a physical device. Communications are not attempted when a device is disabled. From a client standpoint, the data is marked as invalid and write operations are not accepted. This property can be changed at any time through this property or the device system tags.

Simulated: Place the device into or out of Simulation Mode. In this mode, the driver does not attempt to communicate with the physical device, but the server continues to return valid OPC data. Simulated stops physical communications with the device, but allows OPC data to be returned to the OPC client as valid data. While in Simulation Mode, the server treats all device data as reflective: whatever is written to the simulated device is read back and each OPC item is treated individually. The data is not saved if the server removes the item (such as when the server is reinitialized). The default is No.

Notes:

- 1. Updates are not applied until clients disconnect and reconnect.
- 2. The System tag (_Simulated) is read only and cannot be written to for runtime protection. The System tag allows this property to be monitored from the client.
- In Simulation mode, the item's memory map is based on client update rate(s) (Group Update Rate for OPC clients or Scan Rate for native and DDE interfaces). This means that two clients that reference the same item with different update rates return different data.

4. When a device is simulated, updates may not appear faster than one (1) second in the client.

Simulation Mode is for test and simulation purposes only. It should never be used in a production environment.

Tag Counts

Property Groups		
General	Operating Mode	
	Tag Counts	
	Static Tags	130

Static Tags: Provides the total number of defined static tags at this level (device or channel). This information can be helpful in troubleshooting and load balancing.

Device Properties – Scan Mode

The Scan Mode specifies the subscribed-client requested scan rate for tags that require device communications. Synchronous and asynchronous device reads and writes are processed as soon as possible; unaffected by the Scan Mode properties.

Property Groups	Scan Mode	
General	Scan Mode	Respect Client-Specified Scan Rate 💌
Scan Mode	Initial Updates from (Cache Disable
Juli Muuc		

Scan Mode: Specify how tags in the device are scanned for updates sent to subscribing clients. Descriptions of the options are:

- Respect Client-Specified Scan Rate: This mode uses the scan rate requested by the client.
- Request Data No Faster than Scan Rate: This mode specifies the value set as the maximum scan rate. The valid range is 10 to 99999990 milliseconds. The default is 1000 milliseconds.
 Note: When the server has an active client and items for the device and the scan rate value is increased, the changes take effect immediately. When the scan rate value is decreased, the changes do not take effect until all client applications have been disconnected.
- Request All Data at Scan Rate: This mode forces tags to be scanned at the specified rate for subscribed clients. The valid range is 10 to 99999990 milliseconds. The default is 1000 milliseconds.

- Do Not Scan, Demand Poll Only: This mode does not periodically poll tags that belong to the device nor perform a read to get an item's initial value once it becomes active. It is the OPC client's responsibility to poll for updates, either by writing to the _DemandPoll tag or by issuing explicit device reads for individual items. For more information, refer to "Device Demand Poll" in server help.
- Respect Tag-Specified Scan Rate: This mode forces static tags to be scanned at the rate specified in their static configuration tag properties. Dynamic tags are scanned at the client-specified scan rate.

Initial Updates from Cache: When enabled, this option allows the server to provide the first updates for newly activated tag references from stored (cached) data. Cache updates can only be provided when the new item reference shares the same address, scan rate, data type, client access, and scaling properties. A device read is used for the initial update for the first client reference only. The default is disabled; any time a client activates a tag reference the server attempts to read the initial value from the device.

Device Properties – CPU Settings

Property Groups	CPU Settings		
Gamaral	Rack Number	0	
Sean Mede	CPU Slot	0	
CPU Settings	Maximum PDU Size	960	

Rack Number: This property specifies the number of the rack in which the simulated CPU of interest resides. The valid range is 0 to 7. Devices must have unique rack and slot values. The default setting is 0.

CPU Slot: This property specifies the number of the slot in which the simulated CPU of interest resides. The valid range is 0 to 31. Devices must have unique rack and slot values. The default setting is 0.

Maximum PDU Size: This property specifies the maximum size of the Protocol Data Unit which the driver supports. It can be configured to 240, 480, and 960 bytes.

Note: To observe the PDU value negotiated with the device, use the _CurrentPDUSize internal tag (see <u>Internal</u> <u>Tags</u>).

Siemens Client Device Configuration

Siemens PLCs must be programmed to issue read and write commands to the driver and to handle returned data. For more information, refer to the Siemens PLC programming documentation. For information on preparing the Siemens client device and the unsolicited driver for communications, refer to <u>Configuring Connections Using the SIMATIC Manager</u>.

Messages must be sent to the IP address of the selected Ethernet adapter of the host computer running the unsolicited driver. To do so, update the channel properties.

For more information concerning the port number configured for the simulated device, refer to <u>Communication</u> <u>Properties</u>.

Internal Tags

Although the following internal tags are not visible in the server configuration, they can be browsed by the OPC client. They can be found under the *<Channel Name>.<Device Name>._InternalTags* group. If the OPC client does not support browsing, or if a non-OPC client is being used, the tags can be created dynamically and statically by using the addresses given below.

Device Address	Description	Range	Data Type	Access
_Cur- rentPDUSize	Subsequent to connection, this tag shows the size of the Protocol Data Unit which has been negotiated with the device. Prior to connection it shows the maximum con- figured PDU value.	240, 480, 960	Word	Read

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Data Types Description

Data Type	Description
Boolean	Single bit
Byte	Unsigned 8-bit value
Char	Signed 8-bit value
Word Unsigned 16-bit value	
	bit 0 is the low bit
	bit 15 is the high bit
Short	Signed 16-bit value
	bit 0 is the low bit
	bit 14 is the high bit
	bit 15 is the sign bit
DWord	Unsigned 32-bit value
	bit 0 is the low bit
	bit 31 is the high bit
Long	Signed 32-bit value
	bit 0 is the low bit
	bit 30 is the high bit
	bit 31 is the sign bit
BCD	Two byte packed BCD
	Value range is 0-9999. Behavior is undefined for values beyond this range.
LBCD	Four byte packed BCD
	Value range is 0-99999999. Behavior is undefined for values beyond this range.
Float	32-bit floating point value.
	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

Address Descriptions

The following information applies to both S7-300 and S7-400 models. The default data types for dynamically defined tags are shown in **bold**.

Address Type	Range	Туре	Access
Discrete Inputs	10.b-14095.b*	Boolean	Read / Write
	.b is Bit Number 0-7	Byte, Char, String**	Read / Write
	IB0-IB4095	Word, Short, BCD	Read / Write
	IW0-IW4094	DWord, Long	Read / Write
	IW:KT0-IW:KT4094	Word, Short	Read / Write
	IW:KC0-IW:KC4094	DWord, Long, LBCD, Float	Read / Write
	ID0-ID4092		
Discrete Inputs	E0.b-E4095.b*	Boolean	Read / Write
Note: I and E access the	.b is Bit Number 0-7	Byte, Char, String**	Read / Write
same memory area.	EB0-EB4095**	Word, Short, BCD	Read / Write
	EW0-EW4094	DWord, Long	Read / Write
	EW:KT0-EW:KT4094	Word, Short	Read / Write
	EW:KC0-EW:KC4094	DWord, Long, LBCD, Float	Read / Write
	ED0-ED4092		
Discrete Outputs	Q0.b-Q4095.b*	Boolean	Read / Write
	.b is Bit Number 0-7		Read / Write
	QB0-QB4095	Byte, Char, String**	Read / Write
	QW0-QW4094	Word, Short, BCD	Read / Write
	QW:KT0-QW:KT4094	DWord, Long	Read / Write
	QW:KC0-QW:KC4094	Word, Short	Read / Write
	QD0-QD4092	DWord, Long, LBCD, Float	
Discrete Outputs	A0.b- A4095.b*	Boolean	Read / Write
Note: Q and A access	.b is Bit Number 0-7	Byte, Char, String**	Read / Write
the same memory area.	AB0-AB4095	Word, Short, BCD	Read / Write
	AW0-AW4094	DWord, Long	Read / Write
	AW:KT0-AW:KT4094	Word, Short	Read / Write
	AW:KC0-AW:KC4094	DWord, Long, LBCD, Float	Read / Write
	AD0-AD4092		
Internal Memory	F0.b-F4095.b*	Boolean	Read / Write
	.b is Bit Number 0-7	Byte, Char, String**	Read / Write
	FB0-FB4095	Word, Short, BCD	Read / Write
	FW0-FW4094	DWord, Long	Read / Write
	FW:KT0-FW:KT4094	Word, Short	Read / Write
	FW:KC0-FW:KC4094	DWord, Long, LBCD, Float	Read / Write
	FD0-FD4092		
Internal Memory	M0.b-M4095.b*	Boolean	Read / Write
	.b is Bit Number 0-7	Byte, Char, String**	Read / Write
Note: F and M access	MB0-MB4095	Word, Short, BCD	Read / Write
the same memory area.	MW0-MW4094	DWord, Long	Read / Write
	MW:KT0-MW:KT4094	Word, Short	Read / Write
	MW:KC0-MW:KC4094	DWord, Long, LBCD, Float	Read / Write
	MD0- MD4092		
Data Block Boolean	DB1-N:KM0.b-KM4094.b*	Boolean	Read / Write
	1-N is Block Number		
	.b is Bit Number 0-15		

Address Type	Range	Туре	Access
	Alternates	Boolean	Read / Write
	DB1DBX0.b-DBNDBX4094.b*		
	1-N is Block Number		
	.b is Bit Number 0-15	Boolean	Read / Write
	DB1D0.b-DBND4094.b*		
	1-N is Block Number		
	.b is Bit Number 0-15		
Data Block Left Byte	DB1-N:KL0-KL4095	Byte, Char, String**	Read / Write
	1-N is Block Number		
	Alternates	Byte, Char, String**	Read / Write
	DB1DBB0-DBNDBB4095		
	1-N is Block Number	Byte, Char, String**	Read / Write
	DB1DL0-DBNDL4095		
	1-N is Block Number		
Data Block Right Byte	DB1-N:KR0-KR4094	Byte, Char, String**	Read / Write
	1-N is Block Number		
	Alternates	Byte, Char, String**	Read / Write
	DB1DR0-DBNDR4094		
	1-N is Block Number		
Data Block Unsigned	DB1-N:KH0-KH4094	Word, Short, BCD	Read / Write
Word	1-N is Block Number		
Data Block Signed Word	DB1-N:KF0-KF4094	Word, Short , BCD	Read / Write
	1-N is Block Number		
	Alternates	Word, Short , BCD	Read / Write
	DB1DBW0-DBNDBW4094		
	1-N is Block Number	Word, Short , BCD	Read / Write
	DB1DW0-DBNDW4094		
	1-N is Block Number		
Data Block Signed Long	DB1-N:KD0-KD4092	DWord, Long, LBCD, Float	Read / Write
	1-N is Block Number		
	Alternates	DWord, Long, LBCD, Float	Read / Write
	DB1DBD0-DB1DBD4092		
	1-N is Block Number	DWord, Long, LBCD, Float	Read / Write
	DB1DD0-DB1DD4092		
	1-N is Block Number		
Data Block Float	DB1-N:KG0-KG4092	Float	Read / Write
	1-N is Block Number		
Data Block BCD	DB1-N:BCD0-BCD4094	Word, Short	Read / Write
	1-N is Block Number		
Data Block S5 Timer as	DB1-N:KT0-KT4094	DWord, Long	Read / Write
DB	1-N is Block Number		
Data Block S5 Counter as	DB1-N:KC0-KC4094	Word, Short	Read / Write
DB	1-N is Block Number		
Data Block String	DB1:S0.n-DB1:S4095.n*	String	Read / Write
	.n is string length		
	0 <n<=932< td=""><td></td><td></td></n<=932<>		

*These memory types/subtypes do not support arrays. **Byte memory types (MB) support strings. The syntax for strings is *<address>.<length>* where 0<length<=932.

Notes:

- 1. All offsets for memory types I, Q, and F represent a byte starting location within the specified memory type.
- 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 modifies 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 to prevent overlapping bytes.
- 3. For strings, the total number of bytes requested cannot exceed the data portion of the negotiated PDU size. If raw strings exceed the negotiated PDU size, they may fail to be read or written.

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] returns ID0, ID4, ID8 and ID12.

For all arrays, the total number of bytes being requested cannot exceed the data portion of the negotiated PDU size. For example, given a 960 byte PDU size, the largest single array that may be read or written is 932 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	А	В	С
Byte	0	1	2	3	4

Example 1

DB1:KH0=0x89 DB1:KL0=0x8 DB1:KR0=0x9 DB1DBB0=0x8

Example 2

DB1:KH1=0x9A DB1:KL1=0x9 DB1:KR1=0xA DB1DBB1=0x9

Examples

- To access bit 3 of Internal Memory F20, declare an address as follows: F20.3
- To access Data Block 5 as word memory at byte 30, declare an address as follows: DB5:KH30
- To access Data Block 2 byte 20 and bit 7, declare an address as follows: DB2:KM20.7
- To access Data Block 1 as left byte memory at byte 10, declare an address as follows: DB1:KL10
- To access Internal Memory F20 as a DWord, declare an address as follows: FD20
- To access Input Memory I10 as a Word, declare an address as follows: IW10

Event Log Messages

The following information concerns messages posted to the Event Log pane in the main user interface. Consult the OPC server help on filtering and sorting the Event Log detail view. Server help contains many common messages, so should also be searched. Generally, the type of message (informational, warning) and troubleshooting information is provided whenever possible.

Tip: Messages that originate from a data source (such as third-party software, including databases) are presented through the Event Log. Troubleshooting steps should include researching those messages online and in vendor documentation.

Failure to start unsolicited communications. | Port number = <number>.

Error Type:

Error

Possible Cause:

- 1. The driver was not able to create a listen socket for unsolicited communications. Another application may be using the port specified.
- 2. There may be low system resources.

Possible Solution:

- Use network monitor software to see if another application is using the port. If so, shut down the conflicting application and restart the OPC Server. If the conflicting application is free to pick any available port, make sure the server is always started first so it can claim the required port. If both the PLC programming software and this driver must use the same port, they may not be able to be used simultaneously.
- 2. Verify there are adequate system resources or release resources from other processes.

See Also:
Channel Setup

Appendix: Configuring Connections Using the SIMATIC Manager

Connections are configured using the SIMATIC Manager software. The following topics provide information on configuring the Siemens TCP/IP Server Ethernet Driver to run in unsolicited mode, and demonstrate a basic setup using the S7-300 PLC as the active partner and the driver as the passive partner.

• Note: The Siemens TCP/IP Server Ethernet Drivercan configure 256 devices, each with an associated slot/rack. When the active partner (Siemens client) communicates with the passive partner (unsolicited or Siemens server driver), it directs its requests to a specific device in the unsolicited driver. Multiple remote partners can talk to the same device.

To jump to a specific section, select a link from the list below.

 Step One: Creating a New Project

 Step Two: Configuring the Siemens Client and PC Station

 Step Three: Connecting the Siemens Client and the Siemens Server Driver

 Step Four: Inserting Function Blocks

 Step Five: Creating the DB3 Data Block

 Step Six: Inserting PUT FB

 Step Seven: Downloading to the PLC

Step One: Creating a New Project

1. To start, open the SIMATIC Manager software and then create a new project. In this example, the project being used is "Setup".

New Project	X
User projects Libraries Multiprojec	sts
Name	Storage path
🞒 Russian	C:\Program Files\Siemens\Step7\s7
🞒 Russian_Proj	C:\Documents and Settings\Adminis
STPAUL_WTP_March_2_2011	C:\Documents and Settings\Adminis
2	
Add to current multiproject	
Na <u>m</u> e:	<u>I</u> ype:
Setup	Project
	🗖 <u>E</u> Library
Storage location (path):	
C:\Program Files\Siemens\Step7\s7p	roj <u>B</u> rowse
ОК	Cancel Help



2. Create the Siemens client and PC Station. To do so, right-click in the right pane of the window and then select Insert New Object | SIMATIC 300 Station.

Tip: The Siemens client 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.

SIMATIC Manager - [Setup	C:\Pro	gram Files\Sie	mens\Step7\s7pro	j\Setup]	
Di File Edit Insert PLC View	Options	Window Help		-	8 ×
D 📽 🚼 🕾 🕺 X 🖻 🖻	0	R. R	註 /甜 / 💼 / < No	> Filter > 💌 🍸	1 22
- All Setup	8° MPI(1	Cut Copy Poste	Cbl+X Cbl+C Cbl+V		
		Insert New Ob PLC	ject •	SIMATIC 400 Station SIMATIC 300 Station	
		Object Propert	ies At+Return	SIMATIC PC Station Other Station SIMATIC SS PG/PC	
				MPI PROFIBUS Industrial Ethernet PTP Foundation Fieldbus	
Inserts the object to be selected at th	e cursor po	sition.		S7 Program M7 Program	



3. Name the new station "SIEMENS-CLIENT" because it represents the communication's active partner.

SIMATIC Manager - [Setup	C:\Program Files\Siemens\Step7\s7proj\Setup]	
Ele Edit Insert PLC View	Options Window Help	- 6 ×
D 📽 🎛 🛲 🗴 🖻 🖻	💼 😨 🐾 💁 🦕 🏣 🏢 💼 < No Filter >	• 70
🟵 🎒 Setup	SIEMENS CLIENT	

		· ₽2 5 E m	CNo F	iter > 👱	30	1
By Setup	SP MPI(1)	SIEMEN	SCLIENT			
		Cut	Orl+X			
		Copy Page	Ctrl+C Ctrl+Y			
		Delete	Del			
	i i	Insert New Object	•	SIMATIC 400 Station		
		PLC Object Properties	AP+Return	SIMATIC 300 Station SIMATIC H Station		
		Object Propercission	ACTION	SIMATIC PC Station Other Station SIMATIC S5 PG/PC		
				MPI PROFIBUS		
erts the object to be selec	ted at the cursor position	in.		Industrial Ethernet		

4. Right-click in the right pane of the window and select Insert New Object | SIMATIC PC Station.

For more information, refer to Step Two: Configuring the Siemens Client and PC Station.

Step Two: Configuring the Siemens Client and PC Station

Industrial Ethernet (IE) is the protocol used for communication.

1. To start, right-click in the right pane of the SIMATIC Manager window. Select Insert New Object | Industrial Ethernet.

0 📽 🔐 🛲 🐰 🛍 🛍	論	0 2 20	日本語の「	No Filter >	- 70	뮝	
🖲 🎒 Setup	89M	PI(1)	SIEMENS CLIENT	SIMATIC PC Station			
		Cut Copy Paste	Ctrl+X Ctrl+C Ctrl+V				
		Delete	Del				
		Insert New Ol PLC	oject >	SIMATIC 400 Station SIMATIC 300 Station			
			Object Proper	operties Alt+Return SIMATIC	SIMATIC H Station SIMATIC PC Station	tion ation	
				Other Station SIMATIC 55 PG/PC			
				MPI PROFIBUS Industrial Ethernet PTP Foundation Fieldbus			
				S7 Program M7 Program			

BE Edit Insert PLC Yew		_ 8 ×	
0 📽 🔐 🕾 🕺 🗞 🕲 🕄	💼 🗢 🐾 🗣 🗁 註 前 🙆 (No Filter >	• 70	28 380 4
Betup SEMENS CLIENT B SIMATIC PC Station	SIEMENS CLIENT 🧟 SIMATIC PC Station	88 MPI(1)	Ethernet
Press F1 to get Help.	1	TO	P/IP(Auto) -> VMware Accelera

2. Select the SIEMENS CLIENT icon in the left pane of the window and double-click Hardware.



💐 HW Config - [SIEMENS CLIENT (Configuration) Setup]	
💵 Station Edit Insert PLC View Options Window Help	_ 8 ×
D 😂 💱 🖉 🗞 🎒 🖻 🖻 🕍 🏙 🏙 🚯 🗔 🞇 🐶	
SIEMENS CLIENT	
Slot Designation	

- 3. Open the View tab and select Catalog.
- 4. Expand the SIMATIC 300 menu and the Rack 300 menu.

5. To insert the racks, double-click on Rail.



6. Expand the **PS 300** menu. Double-click on **PS 307 10A** or any other suitable option to insert the power supply into slot 1.

HW Config - [SIEMENS	CLIENT (Configuration) Setup] C View Options Window Help
	Eind: Erofile: Standard
4 5 6 7 2	
(0) UR Slot Module 1 2 3 4 5 5 6 7	PS-300 PS 305 2A Outdoor PS 307 10A PS 307 10A PS 307 10A PS 307 2A PS 307 2A PS 307 5A PS 307 5A PS 307 5A PS 307 5A Outdoor RACK-300 RACK-300

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

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



9. To insert the CPU into slot 2, click OK.

Properties	- PROFIBUS interface DP	(R0/S2.1)
General	Parameters	
<u>A</u> ddress:		If a subnet is selected, the next available address is suggested.
<u>S</u> ubnet:		
not r	etworked	<u>N</u> ew
		P <u>r</u> operties
		Dejete
OK]	Cancel Help

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

HW Config - [SIEMENS CLIENT (Configuration) Setup]				
D Station Edit Insert PL	C View Options Window Help			
0 🔊 🐂 🖉 🐐 🍯	1 10 18 🛍 🏜 🗊 🗖 🐮 🕺			
Image: Note of the second se	Eind: Profile: Standard PROFIBUS DP PROFIBUS-PA SIMATIC 300 C7 C7 CP-300 AS-Interface Industrial Ethemet			
(0) UR Slot Module 1 PS 307 10A 2 CPU 315-2 DP X2 DP 3	CP 343-1 GGK7 343-1E×00-0×E0 GGK7 343-1E×10-0×E0 GGK7 343-1E×11-0×E0 GGK7 343-1E×11-0×E0 GGK7 343-1E×20-0×E0 GGK7 343-1E×20-0×E0 GGK7 343-1E×21-0×E0 GGK7 343-1E×21-0×E0 GGK7 343-1E×20-0×E0 GGK7 343-12			
4 5 6 7 8 9 10 11				

Properties - Ethernet interface CP 343	-1 (R0/S4)	×
General Parameters		
Set MAC address / use ISO protocol		
MAC address:	It a subnet is selected, the next available addresses are suggested.	
IP protocol is being used		
IP address: 192.168.0.1	Gateway • Do not use router	
Su <u>b</u> net mask: 255.255.255.0	C Use router	
	Address:	
<u>S</u> ubnet:		
not networked Ethernet	<u>N</u> ew	
	Properties	
	Delete	
ОК	Cancel Help	

13. Enter the PLC's IP address and subnet mask. Select **Ethernet** from the subnet box.

14. Click **OK** to configure the Siemens client.

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 suggested.					
IP protocol is being used					
IP address: 192.168.0.1 Gateway					
Subnet mask: 255.255.255.0 C Use router					
Address:					
<u>S</u> ubnet:					
not networked Ethemet					
Properties					
Dejete					
OK Cancel Help					

- 15. Once finished, open the View tab and select Catalog to hide the catalog window.
- 16. Save and exit the HW Configuration window.
- 17. To configure the PC station, click on the SIMATIC PC Station in the left pane of the SIMATIC Manager window.
- 18. Double-click on **Configuration**.

SIMATIC Manager - [Setup	C:\Program Files\Siemens\Step7\s7proj\Setup]	
B Ele Edit Insert PLC Yew	Options Window Help	_ 8 ×
0 📽 🔐 🛲 🐰 🛍 🖻	🚵 🔍 🗣 😫 🦕 🖽 🏥 🔁 (No Filter)	- 7/ 22 @
Setup SIEMENS CLIENT SIEMENS CLIENT SIMATIC PC Station	Dig Configuration	
Press F1 to get Help.		TCP/IP(A

19. Click on the **View** tab and select **Catalog**.

	н н с	Confi	g - [SIMAT	IC PC Station	(Configura	tion) Setu	P]	
8	Static	n Eo	dit Insert	PLC View Opt	ions Window	w Help		
] [D 🛩	<u>م</u>	• •) h c	<u>á á E</u>) 🗖 🗞 N	?	
Γ	🔍 (0) F	PC						
	1	-						
	2							
	3							
	5							
	6							
	7							
'								
<	1			<u> </u>				
		(0)	PC					
	Index		Module	Order numbe	Firmware	MPI address	I address	Commen
	1							
	3	-						
	4							
	5							
	7	-						
	8							
	9							
					-			
	10	<u> </u>						
	10 11 12							
	10 11 12 13							

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

HW Config - [SIMATIC	PC Station (Configuration) Setup]
Station Edit Insert PL	C View Options Window Help
0 📽 🐂 🖉 🖓 🚳	12 C 🔬 🎪 🗊 🗖 😤 🐶
0) PC	Eind: Profile: Standard
(0) PC Index I Module (1 2	CP 1411 CP 1413 CP 1511 CP 1512 CP 1604 CP 1612
3 4 5 6 7	CP 1613 CP 1616 CP 1616 CP 1616 CP 1616 onboard CP 1623 CP 1623 CP 1628
8 9 10 11	CP PROFIBUS HMI User Application

Properties - Ethernet interface IE Gene	ral (R0/S1)	×
General Parameters		
Set MAC address / use ISD protocol		
MAC address:	If a subnet is selected, the next available addresses are suggested.	
IP protocol is being used		
IP address: 192.168.0.1	Gateway • Do not use router	
Su <u>b</u> net mask: 255.255.255.0	C Use router	
	Address:	
Subnet:		
not networked Ethernet	<u>N</u> ew	
	P <u>r</u> operties	
	Delete	
ОК	Cancel Help	

- 22. Enter the IP address of the PC running the SIMATIC Manager software, in addition to the correct subnet mask.
- 23. Select Ethernet from the subnet box.

24. Click **OK** to configure the PC station.

Properties - Ethernet interface IE General (RG	D/S1) 🛛 🔀				
General Parameters Set MAC address / use ISO protocol If a suit the network of the network	bnet is selected, xt available addresses are suggested.				
IP protocol is being used IP address: 192.168.0.2 Subnet mask: 255.255.255.0 Gateway © Do not use router Address:					
Ethemet	<u>N</u> ew P <u>r</u> operties Delete				
ОК	Cancel Help				

- 25. Once finished, open the View tab and select Catalog to hide the catalog window.
- 26. Save and exit the HW Configuration window.
- For more information, refer to Step Three: Connecting the Client and the Server Driver.

Step Three: Connecting the Siemens Client and the Siemens Server Driver

Once the Siemens client and the PC Station have been successfully configured, the Siemens client and the Siemens server must be connected.

1. To start, open the Options tab in the SIMATIC Manager window and select Configure Network.

Ethernet Iodustrial Ethernet	1	
MPI(1)		
CPU CP CP 315-2 : 343-1 CP GP 0P : 343-1 GP	#P	
2 2		

2. Click on the Siemens client's CPU 315-2 DP block. A series of rows should be displayed in the lower half of the window.

NetPro - [Set	up (Network) C:\Pro	ogram Files\V	Step7\s7proj\Setup]	
Network Edit	Insert PLC View Option	ons <u>Window</u> Help		_ 8 ×
		1 d d 🗗 🗊	1 ! N?	
Ethernet Jock style1	No. or other		1	^
Industrial E	unernet.			
MPI(1) MPI	1			
	0		1	
SIE	MENS CLIENT	SIMAT	IC PC Station	
	OP CP 343-1	Genera		
2	2			
<				3
Local ID	Partner ID	Partner	Туре	^
				~
<				2
Ready			TCP/IP(Auto	i) -> VMware Acceleratec //

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



4. Click OK.

Insert New Co	nnection	×			
Connection Partner					
In the current project Setup Unspecified All broadcast stations All multicast stations In unknown project					
Project:	Project:				
<u>S</u> tation:	Station: (Unspecified)				
<u>M</u> odule:	Module:				
- Connection -		-			
<u>T</u> ype:	S7 connection				
Display properties before inserting					
ОК	Apply Cancel Help				

neral Status	nformation	
Local Connect	tion End Point	Block Parameters
Configured	at one end	
🔽 Establish a	in active connection	
Send oper	ating mode messages	
Connection Pa	Logal	Partger
End Point:	SIEMENS CLIENT/ CPU 315-2 DP	Unspecified
	CP 343-1(R0/S4)	▼ Unspecified ▼
Int <u>e</u> rface:	Ethernet [Industrial Ethernet]	[Industrial Ethernet]
Int <u>e</u> rface: Subnet:		
Int <u>e</u> rface: Subnet: Address:	192.168.0.1	
Int <u>e</u> rface: Subnet: Address:	192.168.0.1	Address Details

5. Enter the IP address of the machine on which the Siemens TCP/IP Server Ethernet Driver runs.

and Conner	tion Find Daint	Plank Promotoro	
Contigurer	I denemic connection	Local ID (Hev): W#16#1	
7 Continuer	at one end		3
Establish a	in active connection		2
Send oper	aling mode messages	Default]
			200
Connection Pa	ath		_
	Logal	Partner	
	presentation and a second s	Unspecified	-
End Point:	SIEMENS CLIENT/ CPU 315-2 DP	Chipecald	
End Point: nt <u>e</u> rface:	CPU 315-2 DP CPU 343-1(R0/S4)	Unspecified	4
End Point: Int <u>e</u> rface: Subnet:	SIEMENS CLIENT/ CPU 315-2 DP CP 343-1(R0/S4) Ethemet [Industrial Ethemet]	Unspecified [Industrial Ethernet]	9
End Point: Int <u>e</u> rface: Subnet: Address:	SIEMENS CLIENT/ CPU 315-2 DP CP 343-1(R0/S4) Ethemet [Industrial Ethemet] 192.168.0.1	Unspecified [Industrial Ethernet] [192.168.111.6	9
End Point: Int <u>e</u> rface: Subnet: Address:	SIEMENS CLIENT/ CPU 315-2 DP CP 343-1(R0/S4) Ethemet [Industrial Ethemet] 192.168.0.1	Unspecified [Industrial Ethernet]	36

6. Click **Address Details** and enter the rack/slot values of the device in the unsolicited driver with which the Siemens client should communicate.

Address Details		X
End Point:	Local SIEMENS CLIENT/ CP 343-1	Partner Unspecified
<u>R</u> ack/Slot:	0 4	0 4
<u>C</u> onnection Resource (hex):	10 -	03 💌
TSAP:	10.04	03.04
S7 Subnet ID:	0071 - 0002	·
ОК		Cancel Help

7. Click **OK** twice to successfully connect the Siemens client and server drivers. The Siemens client uses these settings to communicate with the destination device at rack 0 and slot 2.



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

- 8. Save and compile the data by opening the Network tab and selecting Save and Compile. Click OK.
 - Note: There should be no errors on compilation.

Save and Compile	X
Compile Compile and check everything Compile changes only	
OK Cancel	Help

For more information, refer to Step Four: Inserting Function Blocks.

Step Four: Inserting Function Blocks

Once the Siemens client has been configured and connected with the Siemens server or unsolicited driver, it must also be prepared to generate requests for the unsolicited partner. This is done by creating function blocks, which can be used to read data from or write data to an 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. Expand the Siemens client menu, the CPU 315-2 DP menu, and the S7 Program[1] menu.
- 2. Double-click on **Blocks** and **OB1**.



3. LAD, STL, or FBD can be used to create function blocks. In this example, FBD is used. In the LAD/STL/FBD window, click on the **Insert** menu.



4. Click Program Elements.

) 📽 🖁	Bloc	ect k Template		(2) ● ● ●
Conten Nam UB OB1 UB OB1	e Ded Neto	laration Line work work Comment bol	Alt+Ins Cbrl+R Cbrl+J	erface\TEMP' Comment Bits 0-3 = 1 (Coming event), Bits 4-7 = 1 (Event class 1 (Cold restart scan 1 of OB 1), 3 (Scan 2-n of OB 1) Priority of OB Execution
12 081 12 081 12 081 12 081 12 081 12 081 12 081 12 081	RE _RE _PR _MI _MA _DA	Byte Byte Int Int Int Date	4.0 5.0 6.0 8.0 10.0 12.0	1 (Organization block 1, OB1) Reserved for system Reserved for system Cycle time of previous OB1 scan (milliseconds) Minimum cycle time of OB1 (milliseconds) Maximum cycle time of OB1 (milliseconds) Date and time OB1 started
OB1 : Commen	"Main t:	Program	Зыеер (С	ycle)"

5. Expand the Libraries, SIMATIC_NET_CP, and CP 300 menus.

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



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

ta Type Address	Comment
te 0.0	
te 1.0	Bits 0-3 = 1 (Coming event), Bits 4-7 = 1 (Event class 1)
-A+U	1 (Cold restart scan 1 of OB 1), 3 (Scan 2-n of OB 1)
te 2.0	Priority of OB Execution
te 3.0	1 (Organization block 1, OB1)
te 4.0	Reserved for system
te 5.0	Reserved for system
t 6.0	Cycle time of previous OB1 scan (milliseconds)
t 8.0	Ninimum cycle time of OB1 (milliseconds)
t 10.0	Maximum cycle time of OB1 (milliseconds)
te 12.0	Date and time OB1 started
	- 1 - 1 - 1
ogram Sweep (Cy	ste)
tle:	
tle:	
tle: 777 "GET"	
ttle: 777 "GET"	
277 "GET" EN	
rtie: 777 "GET" EN REQ	NDR
PREQ ID	NDR ERROR
PREQ ID ADDR 1	NDR ERROR
277 "GET" - EN - REQ - ID - ADDR_1	NDR ERROR STATUS
	ce 4.0 ce 5.0 c 6.0 c 8.0 c 10.0 cc 12.0

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

9. Enter the name of a data block. In this example, it is "DB2".

	Contents Of: 'Envir	onment\Inter	foce\TERP'
@ Interface	Nome Data Ty	pe Address	Connent
S S TERP	us osi EV Syte	0.0	Bits 0-3 = 1 (Coming event), Bits 4-7 = 1 (Event class
D 001_EV_CLASS	to obi_Sc Syte	1.0	1 (Cold restart scan 1 of OB 1), 3 (Scan 2-n of OB 1)
TR COL PRIORITY	TH OBI FR Byte	210	Priority of OB Execution
TO COL ON NUMBR	IN ORI DE Bute	4.0	Beserved for system
TO COL PESERVED 1	W OB1 PE Byte	5.0	Benerved for avatem
10 OD1_RESERVED_2	us OB1 FR Int	6.0	Cycle time of previous OB1 scan (milliseconds)
TO COL_PREV_CYCLE	UB OD1 MI Int	0.0	Ninimum cycle time of OB1 (milliseconds)
CO COL MIN_CYCLE	10 001_NA Int	10.0	Reximum cycle time of OB1 (milliseconds)
THE COL_DATE_TIME	13 (B1_DA Date	12.0	Date and time OB1 started
081 : "Main Frogram Sweep Comment:	(Cycle) =		
001 : "Main Frogram Sweep Comment:	(Cycle)*		
001 : "Main Frogram Sweep Comment:	(Cycle) =		
001 : "Main Program Sweep Comment: Dictoritie: Title:	(cycle) =	1	
001 : "Main Frogram Sweep Comment: Discourse: Title: Discourse: Title: Discourse: Title: Discourse: Title:	(cycle) =]	
001 : "Main Frogram Sweep Comment:	(Cycle) = 2 14 • Frem e cru]	
001 : "Main Frogram Sweep Comment:	(Cycle) = 22 14 15 From a 17 CPU 17]	
001 : "Main Frogram Sweep Comment:	(Cycle) = 22 14 14 14 15 16 16 17 17 17 10 10 10 10 10 10 10 10 10 10]	
001 : "Main Program Sweep Comment:	(cycle) * (cycle) * 12 14 15 17 17 17		
001 : "Main Program Sweep Comment:	(cycle) "]	
001 : "Main Program Sweep Comment:	(Cycle) =		
Comment: Com	(Cycle) =		
Comment: Com	(Cycle) *		

10. Click **Yes** to create the data block.

	The instance data block DB 2 doe	es not exist. Do you
	want to generate it?	
Ye	s No	Help

- 11. Fill in the other details as appropriate for the fields in the function block. Users should 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 Siemens client and the Siemens server driver in the ID field. In this example, the Local ID number is 1.

The number of bytes in both the "ADDR_1" and "RD_1" fields should be same for the unsolicited driver to respond correctly. Otherwise, an error occurs.

	Contents Of: "Environ	ment\Intertac	e TERP!	
E interface	Hatter	Data Typ	e Address	Coment
S SP TERP	SH COL EV_CLASS	Byte	0.0	Bits 0-3 = 1 (Coming event), Bits 4-7 = 1 (Event of
B OBI_EV_CLASS	UB OBI_BCAN_1	Byte	1.0	1 (Cold restart scan 1 of OB 1), 3 (Bcan 2-n of OB
WD OB1_BCAN_1	UN OB1_PRICEITY	Byte	2.0	Priority of CO Execution
UB OB1_PRIORITY	W OB1_OB_NUMBR	Byte	3.0	1 (Organization block 1, OB1)
TB CO1_CO_NUEBR	US COL_RESERVED_1	Byte	4.0	Reserved for system
UB OD1_REBERVED_1	US OB1_RESERVED_2	Byte	5.0	Reserved for system
SB OB1_PESERVED_2	UN ON PREV_CYCLE	Int	6.0	Cycle time of previous OB1 scan (milliseconds)
TB OB1_PREV_CTCLE	TO OB1_MIN_CYCLE	Int	0.0	finisus cycle time of OB1 (milliseconds)
TB OBL_HIN_CYCLE	UN COL MAX CYCLE	Int	10.0	Raximum cycle time of OB1 (williseconds)
- CO OBI_RAX_CYCLE	IN COL DATE TIME	Date	12.0	Date and time (0) started
W ODI PARE TIRE	0	1.		
1 : "Main Program Dimen Namenti	(Cycle)*			
l : "Main Frogram Sweep newst: Televick D: Title:	(Cycla)*			
11 : "Main Frogram Domesti comment: convention: convention: title:	(Cycla)*	1		
11 : "Main Frogram Domesti comment: convention: conven	(cpcle)*	1		
1 : "Main Program Damep commut: Columnia : Title: Find Dat	(Cpcle) *	17		
Di : "Main Program Damop comment: 	(Cpcle) * 82 114 * From * 6 CPU 12*			
ND.0 - EN	(Cpcle) *	1		
11 1 "Main Program Dumen comment:	(Cpcle)*	17 		
11 i "Main Program Eweep comment: IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	(Cpcle)* 82 14 * From * e CPU 82**			
NO.0 - EN NO.1 - REQ Series 1 NO.1 - REQ Series 1 NO.1 - REQ	(Cpcle) *			
1 : "Main Program Damep mment:	(Cpcle)* 82 15 • Cros • • CPU 17* 809M0.2			
1 : "Main Program Damep meents Tatles Find Dat Find	(Cpcle) * 82 14 * From * * CPU 17 * RDR -M0,2 RBR08 -M0,3			
Di : "Main Program Eweep comment:	(Cpcle) * 82 14 * From * * CPU 17* * SDR -940,2 ESR08 -940,3 0TAT03 -9541			
1 : "Main Program Eweep comment:	(Cpole) * 82 14 * From * e CPU ET* RDR -MO.2 ESROB -MO.3 DTATO3 -Meil			

Note: Now that the GET function block has been created successfully, users must remember that the block gets executed / triggered only on a rising edge (REQ).

12. Click Save and close the LAD/STL/FBD window.



For more information, refer to Step Five: Creating the DB3 Data Block.

Step Five: Creating the DB3 Data Block

While configuring GET FB, the data block "DB3" was used for the "RD_1" field. This is the data block that stores read values.

1. Right-click in the right pane of the SIMATIC Manager window and then select Insert New Object | Data Block.



2. Change the name to "DB3."

Properties - Data Block	k —	×
General - Part 1 General	- Part 2 Calls Attributes	
Name and type:	DB3 Shared DB	3
<u>S</u> ymbolic Name:		
Symbol <u>C</u> omment:		
Created in <u>L</u> anguage:	DB	
Project path:		
Storage location of project:	C:\Program Files\Siemens\Step7\s7proj\Setup	
N	Code Interface	
Date created: Last modified:	12/22/2020 08:10:45 AM 12/22/2020 08:10:45 AM	
C <u>o</u> mment:		
ОК	Cancel Help	



 Double-click on DB3. To assign some memory to the data block, users can make changes similar to those shown below. Although the array size in this example is arbitrary, values should be specified to fit a particular need.

Ge Edet Ensert PLC Debug View Options Window Help D Ge 음소 🖬 🚳 🐰 Parel 이 이 이 안님 🎰 🗢 음을 위해 한다. 가지 🖸 🖭 🏷					
Address	Name	Туре	Initial value	Comment	
0.0		STRUCT			
+0.0	DB_VAR	ARRAY[1500]			
*1.0		BYTE			
=500.0		END_STRUCT	100		
*1.0 =500.0		BYTE END_STRUCT		Abs x 5.2 Torast Cha	

- 4. Save and close the LAD/STL/FBD window.
- For more information, refer to Step Six: Inserting PUT FB.

Step Six: Inserting PUT FB

Create a separate data block for the PUT FB, which holds the data that is written to the remote partner. To
insert this new data block, follow the steps in <u>Step Five: Creating the DB3 Data Block</u> but name it "DB5."



Double-click on DB5, then specify a memory size. Although the array size in this example was chosen arbitrarily, the values should be specified to fit a particular need.

🚟 LAD/STL/FBD	DB5 Setup	SIEMENS CLIENTICPU	315-2 DP]				
🖬 Ele Edit Insert	t PLC Debug	jiew Options <u>W</u> indow H	elp	- 8 ×			
0 📽 🐂 🖬 🖉	D 😂 🖫 🚭 🗴 🖻 🖻 🗠 🕫 🕼 🎃 🖕 📽 🕼 😒 ! 🔲 🖾 📢						
Address	Name	Туре	Initial value	Comment			
0.0		STRUCT					
+0.0	DB_VAR	ARRAY[1500]					
*1.0		BYTE					
=500.0		END STRUCT					

- 3. To insert the PUT FB, double-click on ${\bf OB1}$ in the SIMATIC Manager window.
- 4. In LAD/STL/FBD, right-click in the blank space below GET FB.

5. Click Insert Network and select the blank space below.

Contents Of: 'Envi	conment\Int	erface)	TENP
Name	Data Typ	e Addres	Rise 0.3 = 1 (Compare event) Rise 4.7 = 1 (Event class 1
OB1_2V_COADD	Bute	1.0	1 (Cold restart scan 1 of OB 1) 3 (Scan 2-n of OB 1)
B OB1 PRIORITY	Bote	2.0	Priority of OB Execution
OB1 OB NUMBR	Bute	3.0	1 (Organization block 1, OB1)
OB1 RESERVED 1	Byte	4.0	Reserved for system
B OB1 RESERVED 2	Byte	5.0	Reserved for system
B OB1 PREV CYCLE	Int	6.0	Cycle time of previous OB1 scan (milliseconds)
B OB1 MIN CYCLE	Int	8.0	Ninimum cycle time of OB1 (milliseconds)
B OB1 MAX CYCLE	Int	10.0	Maximum cycle time of OB1 (milliseconds)
B OB1 DATE TIME	Date	12.0	Date and time OB1 started
		on and	
Comment:			
Comment:	: PB14 Read Data Remote "GET"	From a CPU	
Comment:	PB2 FB14 Read Data Remote "GET"	Prom a CPU	
Comment: B Network 1 : Title MO.0 - EN MO.1 - PE	r: PB14 Read Data Remote "GET" Q	From a CPU	
MO.0 - EN MO.1 - RE W#16#1 - II	r: PB2 PB14 Read Data Remote "GET" Q	From a CPU	
MO.0 - EN MO.1 - RE W#16#1 - II	r: PB2 FB14 Read Data Remote "GET" Q	From a CPU "	PRM0.2
MO.0 - EN MO.1 - PE W#16#1 - II P#I 0.0	PB2 FB14 Read Data Remote "GET"	Prom a CPU ND	PR →M0.2
MO.0 - EN MO.1 - PE W#16#1 - II P#I 0.0 BYTE 10 - AD	PB2 PB14 Read Data Pemote "GET" Q DR_1	Prom a CPU ND ERRO	PR -MD.2 PR -MD.3
Comment: Network 1 ; Title M0.0 - EN M0.1 - PE W#16#1 - II P#I 0.0 BYTE 10 - AD D#D22	PB2 PB14 Read Data Pemote "GET" Q DR_1	Prom a CPU ND ERRO	PR -M0.2 PR -M0.3
Comment: Network 1 ; Title M0.0 - EN M0.1 - PE W#16#1 - II P#I 0.0 BYTE 10 - AD P#DB3. DEVD.0	PB2 FB14 Read Data Pemote "GET" Q DR_1	Prom a CPU " ND ERRO STATU	PR -M0.2 PR -M0.3 PS -M41
Comment: Network 1 ; Title M0.0 - EN M0.1 - PE W#16#1 - II P#I 0.0 BYTE 10 - AD P#DB3. DEX0.0 RVTF 10 - RD	: PB14 Pend Data Remote "GET" Q DR_1 1	From a CPU ND ERRO STATU	PR -M0.2 PR -M0.3 PR -M0.3
MO.0 - EN MO.0 - EN MO.1 - RE W#16#1 - II P#I 0.0 BYTE 10 - AD P#DB3. DEXC.0 BYTE 10 - RD	:: PB14 Read Data Remote "GET" Q DR_1 _1	Prom a CPU ND ERRO STATU EN	PR -M0.2 PR -M0.3 PS -MW1 PO -
Comment: Network 1 : Title M0.0 - EN M0.1 - RE W#16#1 - ID P#I 0.0 BYTE 10 - AD P#DB3. DBXD.0 BYTE 10 - RD E Metwork 2 : Title	: PB14 Read Data Remote "GET" Q DR_1 _1 :	From a CPU ND ERRO STATU EN	PR M0.2 PR M0.3 PR M0.3 PM 1
Comment: Network 1 : Title M0.0 - EN M0.1 - RE W#16#1 - II P#I 0.0 BYTE 10 - AD P#DE3. DEXO.0 BYTE 10 - RD ETE 10 - RD	: PB14 Pend Data Remote "GET" Q DR_1 _1 :	Prom a CPU ND ERRO STATU EN	PR M0.2 PR M0.3 PM M1 PO M0

- 6. Click Insert | Program Elements.
- 7. Expand the Libraries, SIMATIC_NET_CP, and CP 300 menus.
- 8. To insert a function block to write data, double-click on FB15 PUT.

9. Close the Program Elements window.

Contents Of: 'Environment/Interface/TEMP'					
Name	Data Type	Address	Comment		
B OB1_EV_CLASS	Syte	0.0	Bits 0-3 = 1 (Coming event), Bits 4-7 = 1 (Event class)		
DOB1_SCAN_1	Byte	1.0	1 (Cold restart scan 1 of OB 1), 3 (Scan 2-n of OB 1)		
B OB1_PRIORITY	Byte	2.0	Priority of OB Execution		
OB1_OB_NUMBR	Byte	3.0	1 (Organization block 1, OB1)		
OB1_RESERVED_1	Byte	4.0	Reserved for system		
OB1_RESERVED_2	Syte	5.0	Reserved for system		
OB1_PREV_CYCLE	Int	6.0	Cycle time of previous OB1 scan (milliseconds)		
BOB1_MIN_CYCLE	Int	8.0	Minimum cycle time of OB1 (milliseconds)		
OB1_MAX_CYCLE	Int	10.0	Maximum cycle time of OB1 (milliseconds)		
2002/02/02/2002					
P#DB3. D8X0.0 SYTE 10 - PD_1	STAT	US -MW1			
P#DB3. DBX0.0 SYTE 10 PD_1 BRetwork 2: Title:	STAT E	NO -			
P#DB3. DBX0.0 BYTE 10RD_1	STAT E 277 FB15 ite Data to a Remote CPU "PUT"	US -MW1 NO -			
P#DB3. DBXD.0 BYTE 10RD_1 B Metwork 2: Title: Wc	STAT E 277 FB15 ite Data to a Remote CPU "PUT"	US -MW1 NO -			
PNDB3. DBX0.0 SYTE 10 PD_1 3 DETWORK 2: Title: EN REQ	STAT E PB15 Ste Data to a Remote CPU "PUT" DO	NS			
PWDB3. DBX0.0 BYTE 10RD_1 3 Network 2: Title:	STAT E 777 FB15 ite Data to a Remote CPU "PUT" DO ERR	NE			
PWDB3. DBX0.0 BYTE 10RD_1 BYTE 10RD_1 BYTE 10RD_1 EN EN EN ID ADDR	277 PB15 Ste Data to a Penote CPU "PUT" DO EPR 1 STAT	NE NO -			

- 10. Associate a data block (DB) with the function block (FB). To do so, click above the FB where there are three red question marks.
- 11. Specify a name. In this example, "DB4" is used.
- 12. A window prompt requests confirmation of data block creation. Click Yes.
- 13. Fill in the other details as appropriate. Users should consider the following:
 - "ADDR_1" address is 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 Siemens client and the Siemens server 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 occurs.

	A Real Property in the second	and the second second second	
Concentration of Providence			
Johcenes off Enviro	onment\Inter:	face\TEMP	
Name	Data Type	Address	Comment
OB1_EV_CLASS	Byte	0.0	Bits 0-3 = 1 (Coming event), Bits 4-7 = 1 (Event class :
OB1_SCAN_1	Byte	1.0	1 (Cold restart scan 1 of OB 1), 3 (Scan 2-n of OB 1)
BOB1_PRIORITY	Byte	2.0	Priority of OB Execution
OB1_OB_NUMBR	Byte	3.0	1 (Organization block 1, OB1)
OB1_RESERVED_1	Byte	4.0	Reserved for system
OB1_RESERVED_2	Byte	5.0	Reserved for system
B OB1_PREV_CYCLE	Int	6.0	Cycle time of previous OB1 scan (milliseconds)
OB1_MIN_CYCLE	Int	8.0	Minimum cycle time of OB1 (milliseconds)
OB1_MAX_CYCLE	Int	10.0	Maximum cycle time of OB1 (milliseconds)
B OB1_DATE_TIME	Date	12.0	Date and time OB1 started
Bill to - 10-	DB4		
	Write Data to Remote CPU	o a J	
NO.0 - EN NO.1 - REO	Write Data t Remote CPU "PUT"	o a J	
MO.O — EN MO.1 — REQ W#16#1 — ID	Write Data t Remote CPU "PUT"	DONR	10 4
NO.0 - EN MO.1 - REQ W#16#1 - ID R#0.0.0	Write Data t Remote CPU "PUT"	DONE -p	10.4
M0.0 - EN M0.1 - REQ W#16#1 - ID P#Q 0.0 BYTE 10 - ADD	Write Data t Remote CPU "PUT"	DONE -P	10.4 10.5
M0.0 - EN M0.1 - REQ W#16#1 - ID P#Q 0.0 BYTE 10 - ADD P#DB5.	Write Data t Remote CPU "PUT" R_1	DONE	10.4 10.5 142

14. Click Save and close LAD/STL/FBD.



For more information, refer to Step Seven: Downloading to the PLC.

Step Seven: Downloading to the PLC

Once the Siemens client has been prepared to generate Read / Write requests for the remote unsolicited partner, the information must be downloaded to the PLC.

- 1. Click **Siemens client** in the left pane of the SIMATIC Manager window.
- 2. Select the PLC menu.
- 3. Select **Download** to begin downloading the project to the PLC.

s	top Target Modules			
	The following modules will be stop data.	oped for loading	g of the syst	iem
	Module		Racks	Slot
	CPU 315-2 DP		0	2
	<u>ОК</u>	Cancel	н	elp

4. Click OK.

Download	X
Station: SIEMENS CLIENT	
Module: [0/2/0] CPU 315-2 DP	

5. Click Yes.

Downloa	ad (13:4363)
<u>.</u>	The module [0/2/0] CPU 315-2 DP is in the STOP mode. Do you want to start the module now (complete restart)?
Ye	s No

• Note: The Siemens client must be run to trigger the function blocks that generate Read / Write requests.

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



7. In LAD/STL/FBD, click Debug | Monitor.

	setupisitimities cuttin	TIVEPU 315-7	2 DP]
File Edit Insert PLC	Debug View Options Wi	ndow Help	
Contents Of: 'En'	Monitor Monitor Selected Range Call Environment Operation	Ctrl+F7	NIKNI III III III III III III III III II
UB OB1_EV_CLASS UB OB1_SCAN_1 UB OB1_PRIORITY	Modify Address Modify Address to 0 Modify Address to 1		Bits 0-3 = 1(Coming event), Bits 4-7 = 1(Event class 1(Cold restart scan 1 of OB 1), 3(Scan 2-n of OB Priority of OB Execution
UB OB1_OB_NORBR -	Control at Contact		1 (Organization block 1, OB1) Reserved for system Reserved for system Cycle time of previous OB1 scan (milliseconds) Minimum cycle time of OB1 (milliseconds) Maximum cycle time of OB1 (milliseconds) Date and time OB1 started
UB OB1_RESERVED_2 UB OB1_PREV_CYCLE UB OB1_MIN_CYCLE UB OB1_MAX_CYCLE UB OB1_DATE_TIME	Set Breakpoint Delete All Breakpoints Breakpoints Active Show Next Breakpoint Resume Execute Next Statement Execute Call	Cbi+H Cbi+Shift+H Cbi+F8 Cbi+F8 Cbi+F9 Cbi+F12	
B Network 1: Titl	e:		
	582		
_			
MO.0 - E! MO.1 - RJ	"GET" N EQ		
MO.0 — E! MO.1 — RI W#16#1 — II	"GET" N EQ D	IDR -M0.2	
MO.0 - E! MO.1 - P! W#16#1 - I! P#I 0.0 BYTE 10 - AI	"GET" N EQ D DDR_1 ERF	1DR MO. 2 10R MO. 3	
MO.0 - EI MO.1 - RJ WW16#1 - IJ P#I 0.0 BYTE 10 - AI P#DB3. DBX0.0	"GET" N EQ D DDR_1 ERF STAT	IDR —M0.2 ROR —M0.3 IUS —Mw1	

• Note: LAD/STL/FBD should appear in Online Mode.

LAD/STL/FBD - [@0B1	Setup\SIEM	ENS CLIENT	ACPU 315-2 DP_ONLINE]
File Edit Insert PLC D	ebug View Opl	tions Window	Help
		网合	
Contents Of: 'Envi	ronment\Int	terface\T	ENP
Name	Data Type	e Address	Comment
DB1_EV_CLASS	Byte	0.0	Bits 0-3 = 1 (Coming event), Bits 4-7 = 1 (Event class
U OB1_SCAN_1	Byte	1.0	1 (Cold restart scan 1 of OB 1), 3 (Scan 2-n of OB 1)
B OB1_PRIORITY	Byte	2.0	Priority of OB Execution
1 OB1_OB_NUMBR	Byte	3.0	1 (Organization block 1, OB1)
B OB1_RESERVED_1	Byte	4.0	Reserved for system
<pre>OB1_RESERVED_2</pre>	Byte	5.0	Reserved for system
BOB1_PREV_CYCLE	Int	6.0	Cycle time of previous OB1 scan (milliseconds)
BOB1_MIN_CYCLE	Int	8.0	Minimum cycle time of OB1 (milliseconds)
B OB1_MAX_CYCLE	Int	10.0	Maximum cycle time of OB1 (milliseconds)
B OB1_DATE_TIME	Date	12.0	Date and time OB1 started
Connent:			
Hetwork 1: Title	18. 		
	DB2		
	"GET"		1
0			
MO.O EN	13		
M0.1 - RE	0		
10H16H1	8		
WW 2 0 0 2		NDR	-M0.2
P#I 0.0			
BYTE 10 - AD	DR_1	ERROR	-M0.3
P#DB3.		STATUS	Mul
DBX0.0	201 9 1		1.2
BYTE 10 - RD	_1	ENO	-
BYTE 10 AD P#DB3. DBX0.0 BYTE 10 RD BYTE 10 RD	_1 :: 	ERROR STATUS ENO	-M0.3 -M01
M0.0 EN	Ř.		
MO.1RE	e.		
W#16#1 ID	91	DOWR	_ wo 4
P#Q 0.0	222.02	PORD.	

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

🗃 🔓 🚽 🖨	X BB C	ə (cu) 🖬 🎰	
Contents Of:	Environment	\Interface	\TEMP'
Name	Data Ty	pe Address	Comment
B OB1 EV CLAS	S Byte	0.0	Bits 0-3 = 1 (Coming event), Bits 4-7 = 1 (Event class 1)
B OB1 SCAN 1	Byte	1.0	1 (Cold restart scan 1 of OB 1), 3 (Scan 2-n of OB 1)
B OB1_PRIORIT	TY Byte	2.0	Priority of OB Execution
OB1_OB_NUME	R Byte	3.0	1 (Organization block 1, OB1)
B OB1_RESERVE	D_1 Byte	4.0	Reserved for system
DB1_RESERVE	D_2 Byte	5.0	Reserved for system
BI_PREV_CI	CLE Int	6.0	Cycle time of previous OB1 scan (milliseconds)
B OB1_MIN_CYC	LE Int	8.0	Minimum cycle time of OB1 (milliseconds)
B OB1_MAX_CYC	LE Int	10.0	Maximum cycle time of OB1 (milliseconds)
B OB1_DATE_TI	ME Date	12.0	Date and time OB1 started
B1 : "Main H	Program Sweep	p (Cycle)"	
B1 : "Main) Comment:	Program Sweep Title:	p (Cycle)"	
Bl : "Main) Comment:	Program Sweep Title:	p (Cycle)" DB2	
081 : "Main) Comment: Comment:	Program Sweep Title: 	p (Cycle)" DB2 BT"	
081 : "Main) Comment:	Title:	p (Cycle)" DB2 GET"	
081 : "Main) Comment: Dictwork 1 : MO.0	Title: 0 EN	p (Cycle)" DB2 SET"	
B1 : "Main) Comment: Dietwork 1: M0.0	Title:	p (Cycle)" DB2 SET"	
B1 : "Main) Comment: Metwork 1: MO.0	Title:	DB2 BET" Ctrl+C	
<pre>B1 : "Main 1 Comment: MO.0 MO.0 MO.1 W#16#</pre>	Title:	DB2 BET" Ctrl+C Ak+F9	
<pre>B1 : "Main 1 Comment: MO.0 MO.0 MO.0 MO.0 MO.0</pre>	Title:	DB2 BT" Ctrl+C Ak+P9 Ctrl+J	Р. –M0.2
<pre>B1 : "Main 1 Comment: M0.0 M0.0 M0.0 M0.0 M0.0 M0.0 M0.0 </pre>	Title:	DB2 BT" Ctrl+C Ak+F9 Ctrl+J	ия -мо. 2
<pre>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>></pre>	Title:	DB2 BT" Ctrl+C Ak+F9 Ctrl+J	/R -M0.2 /R -M0.3
<pre>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>></pre>	Title:	DB2 BT" Ctrl+C Ak+P9 Ctrl+J	/R -M0.2 /R -M0.3 /S -M01
DB1 : "Main 1 Comment: Dtetwork 1: MO.0 MO.0 MO.0 MO.0 MU.1 W#16# P#I 0.0 BYTE 1 P#DB3 DEXC.0	Title:	DB2 BT" Ctrl+C Ak+P9 Ctrl+J	/R -M0.2 /R -M0.3 /S -Mu1
DB1 : "Main 1 Comment: DETwork 1: MO.0 MO.0 MO.0 MU.1 W#16# P#I 0.0 BYTE 1 P#DB3 DEXC.0 BYTE 1	Title:	DB2 BT" Ctrl+C Ak+P9 Ctrl+J Ak+Return	VR -MO.2 DR -MO.3 VS -MW1 VO -

9. 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\SII	MENS CLIER	NTVCPU 315-2 DP_ONLINE]
File Edit Insert	PLC Debug View (Options Wind	ow Help
) 🗃 🔓 🖬 🧯	· · · · · · · · ·	~ 回論	□ = 60 101 □■ 22 後後 8 2 0 11 € 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Contents Of:	'Environment\I	nterface\	TEMP
Name	Data Typ	e Address	Comment
OB1_EV_CL	ASS Byte	0.0	Bits 0-3 = 1 (Coming event), Bits 4-7 = 1 (Event class 1
OB1_SCAN	1 Byte	1.0	1 (Cold restart scan 1 of OB 1), 3 (Scan 2-n of OB 1)
BI_PRIOR	ITY Byte	2.0	Priority of OB Execution
OB1_OB_NU	MBR Byte	3.0	1 (Organization block 1, OB1)
OB1_RESER	VED_1 Byte	4.0	Reserved for system
B OB1_RESER	VED_2 Byte	5.0	Reserved for system
B OB1_PREV_	CYCLE Int	6.0	Cycle time of previous OB1 scan (milliseconds)
B OB1 MIN C	YCLE Int	8.0	Minimum cycle time of OB1 (milliseconds)
B OB1 MAX C	YCLE Int	10.0	Maximum cycle time of OB1 (milliseconds)
B OB1 DATE	TIME Date	12.0	Date and time OB1 started
Network 1	: Title:		
	DB	2	
	"GE	r"	
MO	0 .0 EN		
10.1	Copy Ctrl+	c)	
10#1			
P#I 0	Insert Empty Box Alt+P Insert Symbol Ctrl+	3 ND	R - M0.2
BYTE	Modify to D Modify to 1	2RC	PR MO. 3
DBXO BYTE	Go To Edit Symbols Alt+F	teturn EN	
	Representation	•	- 12) E.

• Note: Both of the FBs must next be configured to respond to the same rising edge for the SIMATIC Manager's variables to be locally monitored and modified.

10. In LAD/STL/FBD, click on PLC and select Monitor/Modify Variables.

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 with which the Siemens client is communicating is "rack:0 slot:2". The values can be changed from the NetPro window. Users must make sure that the Siemens server or unsolicited driver on the other end has a device with these values and is running.

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