

13.3 Reading a System Status List or Partial List with SFC 51 "RDSYSST"

Description

With system function SFC 51 "RDSYSST" (read system status), you read a system status list or a partial system status list.

You start the reading by assigning the value 1 to the input parameter REQ when SFC 51 is called. If the system status could be read immediately, the SFC returns the value 0 at the BUSY output parameter. If BUSY has the value 1, the read function is not yet completed.

Note

If you call SFC 51 "RDSYSST" in the diagnostic interrupt OB with the SSL-ID W#16#00B1 or W#16#00B2 or W#16#00B3 and access the module that initiated the diagnostic interrupt, the system status is read immediately.

With SFC 51 "RDSYSST" only complete data records are transferred.

System Resources

If you start several asynchronous read functions (the jobs with SSL_ID W#16#00B4 and W#16#4C91 and W#16#4092 and W#16#4292 and W#16#4692 and possibly W#16#00B1 and W#16#00B3) one after the other at brief intervals, the operating system ensures that all the read jobs are executed and that they do not interfere with each other. If the limits of the system resources are reached, this is indicated in RET_VAL. You can remedy this temporary error situation by repeating the job.

The maximum number of "simultaneously" active SFC 51 jobs depends on the CPU. You will find this information in /70/ and /101/.

Parameter	Declaration	Data Type	Memory Area	Description
REQ	INPUT	BOOL	I, Q, M, D, L, constant	REQ=1: Starts processing
SSL_ID	INPUT	WORD	I, Q, M, D, L, constant	SSL-ID of the system status list or partial list to be read.
INDEX	INPUT	WORD	I, Q, M, D, L, constant	Type or number of an object in a partial list.
RET_VAL	OUTPUT	INT	I, Q, M, D, L	If an error occurs while executing the SFC, the RET_VAL parameter contains an error code.
BUSY	OUTPUT	BOOL	I, Q, M, D, L	TRUE: Reading not yet completed.
SSL_HEADER	OUTPUT	STRUCT	D, L	See below.
DR	OUTPUT	ANY	I, Q, M, L, D	Destination area of the SSL list read or the SSL partial list read: <ul style="list-style-type: none"> If you have only read out the header information of an SSL list, you must not evaluate DR but only SSL_HEADER. Otherwise, the product of LENTHDR and N_DR indicates how many bytes were entered in DR.

SSL_HEADER

The SSL_HEADER parameter is a structure defined as follows:

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SSL_HEADER: STRUCT
    LENTHDR:    WORD
    N_DR:       WORD
END_STRUCT
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LENTHDR is the length of a data record of the SSL list or the SSL partial list.

- If you have only read out the header information of an SSL list, N_DR contains the number of data records belonging to it.
- Otherwise, N_DR contains the number of data records transferred to the destination area.

Error Information

Error Code (W#16#...)	Description
0000	No error.
0081	Result field too short. (Nevertheless as many data records as possible are supplied. The SSL header indicates this number.)
7000	First call with REQ=0: No data transfer active; BUSY has the value 0.
7001	First call with REQ=1: Data transfer started; BUSY has the value 1.
7002	Interim call (REQ irrelevant): Data transfer already active; BUSY has the value 1.
8081	Result field too short (not enough space for one data record).
8082	SSL_ID is wrong or is unknown in the CPU or SFC.
8083	INDEX wrong or not permitted.
8085	Due to a problem in the system, information is not currently available (for example, due to a lack of resources).
8086	The data record cannot be read due to a system error (bus, modules, operating system).
8087	Data record cannot be read because the module does not exist or does not acknowledge.
8088	Data record cannot be read because the actual module identifier is different from the expected module identifier.
8089	Data record cannot be read because the module is not capable of diagnostics or the data record is not supported.
80A2	DP protocol error (layer 2 error) (temporary error)
80A3	DP protocol error with user interface/user (temporary error)
80A4	Communication problem on communication bus (error occurs between the CPU and the external DP interface module)
80C5	Distributed I/Os not available (temporary error).
80C6	Data record transfer stopped due to priority class abort (restart or background)
80D2	Data record cannot be read because the module is not capable of diagnostics.
8xyy	General error information, see Evaluating Errors with Output Parameter RET_VAL

33.20 SSL-ID W#16#xy37 - Ethernet - Details of a Module

Purpose

The partial list with SSL-ID W#16#xy37 contains information about the configuration of the TCP/IP stack, the MAC address specified by the manufacturer and the connection properties on layer 2.

Header

The header of the partial list with SSL-ID W#16#xy37 has the following structure:

Contents	Meaning
SSL-ID	The SSL-ID of the partial list extract: <ul style="list-style-type: none"> W#16#0037: Details of all Ethernet interfaces W#16#0137: Details of 1 Ethernet interface W#16#0F37: Only SSL partial list header info
INDEX	<ul style="list-style-type: none"> W#16#0000, if the details of all Ethernet interfaces are requested (SSL-ID = W#16#0037) Logical base address of the Ethernet interface whose details are being requested (SSL-ID = W#16#0137)
LENTHDR	W#16#0030: A data record is 24 words long (48 bytes)
N_DR	Number of data records

Data Record

A data record of partial list with SSL-ID W#16#xy37 has the following structure:

Name	Length	Meaning
logaddr	2 bytes	Logical base address of the interface
ip_addr	4 bytes	IP address The IP address is stored in the following format (example. a.b.c.d): offset x: a, offset x+1: b, offset x+2: c, offset x+3: d
subnetmask	4 bytes	Subnet mask The subnet mask is stored in the following format (example. a.b.c.d): offset x: a, offset x+1: b, offset x+2: c, offset x+3: d
defaultrouter	4 bytes	IP address of the default router If you have not configured a default router, the IP address of the interface is entered here.
mac_addr	6 bytes	MAC address
source	1 byte	Origin of the IP address: <ul style="list-style-type: none"> • B#16#00: IP address not initialized • B#16#01: IP address was configured in STEP 7 • B#16#02: IP address was set via DCP • B#16#03: IP address was obtained from a DHCP server • B#16#04 to B#16#FF: reserved
reserve	1 byte	Reserved
dcp_mod_timestamp	8 bytes	Time stamp of the last change of the IP address via DCP Note: The content of this field must only be evaluated if bit 1 is set in the source.
phys_mode1	1 byte	Status of port 1: <ul style="list-style-type: none"> • Bit 0: Duplex mode (only relevant, if AUI mode = 0): 1: phys. layer functions full duplex, 0: phys. layer functions half duplex • Bit 1: Baud rate identifier (only relevant, if AUI mode = 0): 1: phys. layer works with 100 MBd, 0: phys. layer works with 10 MBd • Bit 2: Link status: 1: phys. layer has link pulse, 0: phys. layer has no link pulse • Bit 3: Auto mode: 1: phys. layer should automatically adjust itself to the LAN medium 0: phys. phys. layer should not automatically adjust itself to the LAN medium • Bit 4: 0 • Bit 5: 0 • Bit 6: 0 • Bit 7: Validity: 0: phys_mode1 contains no valid data, 1: phys_mode1 contains valid data <p>The numbering of the ports is identical with the numbering in the configuration. If the interface has only one port, its physical properties are entered for port 1.</p>
phys_mode2	1 byte	Status of port 2 (configured like phys_mode1)
phys_mode3	1 byte	Status of port 3 (configured like phys_mode1)
phys_mode4	1 byte	Status of port 4 (configured like phys_mode1)

Name	Length	Meaning
phys_mode 5	1 byte	Status of port 5 (configured like phys_mode1)
phys_mode 6	1 byte	Status of port 6 (configured like phys_mode1)
phys_mode 7	1 byte	Status of port 7 (configured like phys_mode1)
phys_mode 8	1 byte	Status of port 8 (configured like phys_mode1)
phys_mode 9	1 byte	Status of port 9 (configured like phys_mode1)
phys_mode 10	1 byte	Status of port 10 (configured like phys_mode1)
phys_mode 11	1 byte	Status of port 11 (configured like phys_mode1)
phys_mode 12	1 byte	Status of port 12 (configured like phys_mode1)
phys_mode 13	1 byte	Status of port 13 (configured like phys_mode1)
phys_mode 14	1 byte	Status of port 14 (configured like phys_mode1)
phys_mode 15	1 byte	Status of port 15 (configured like phys_mode1)
phys_mode 16	1 byte	Status of port 16 (configured like phys_mode1)
reserve	2 bytes	Reserved

Note

If you have not yet completed the IP configuration, the ip_addr, subnetmask and defaultrouter variables will each have the value zero.
