

36



Restrictions

36.1	Restrictions on Names	36-2
36.2	Restrictions on Pro-Server EX	36-3
36.3	Restriction on Protocol	36-12

36.1 Restrictions on Names

■ Specifying a Macro to Use the Same Save File Name for each ACTION

You can change file names to [Node Name] or [Saved Data in Device Name (Symbol Name) of Provider Node] by specifying one of the macro codes shown below in [Saved File Name] in the parameter settings for each ACTION.

- Provider node name (Macro code: %NODE)

(Ex.) If the entry node "AGP1" is specified using "Data_%NODE", the file name will become "Data_AGPI".

- Saved data in the device name of provider node (Macro code: %DEV[Device Name or Symbol Name])

(Ex.) When storing "2043" to D100, if "Data_%DEV[D100]" is used, the file name will change to "Data_2043".

NOTE

- When using a macro for a save file name, be sure to enter the macro code correctly. Entering incorrectly, you could not save the file.

When you convert the data saved in the provider's device name (symbol name) to a file name, please pay attention to the following notes:

- Data types when specifying the device name (Default: Decimal, signed 16 bits)

The data type can be changed if after the device name a single-byte space and one of the data type specifications shown in the table below are attached.

(Ex.) When using decimal, unsigned 16 bits, and storing "40505" to D100, specifying "Lot_No%DEV[D100].WORD]" will change the file name to "Lot_No40505"

Data type	Data type specifying characters	Data type	Data type specifying characters
Bit	.BIT	32 bits without decimal code	.DWORD
16 bits with decimal code	.+WORD	Hexadecimal 32 bits	.HEXDWORD
16 bits without decimal code	.WORD	BCD 32 bits	.BCDDWORD
Hexadecimal 16 bits	.HEXWORD	Single-precision floating point	.FLOAT
BCD 16 bits	.BCDWORD	Double-precision floating point	.DOUBLE
32 bits with decimal code	.+DWORD	Character string	.STR

- Precautions when using non-character strings for symbol names

The file name is created using the data type registered on the "Symbol Registration" screen.

(Ex.) If the value "0x999" is stored to the BCD-type symbol "Product_3", when "Data_%DEV[Product_3]" is specified, the file name changes to "Data_9999".

- Precautions when using character strings for symbol names

Attaching an asterisk (*) plus a number after a symbol name allows you to specify the number of characters. The default value is 32 characters, and the maximum is 255 characters.

(Ex.) "%DEV[MOJI.STR.*10]" means that 10 characters after the symbol name "MOJI" are read out, and file names are created until the string NULL is reached.

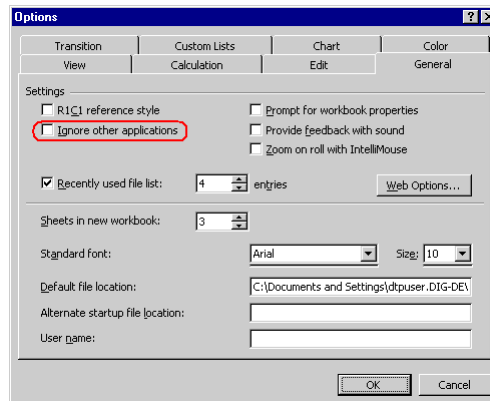
36.2 Restrictions on Pro-Server EX

■ In case that the "Excel Report" ACTION is forcibly terminated

If the "Excel Report" ACTION is forcibly terminated for some reasons, chances are that you cannot open Excel files by double-click. (Excel starts with no book.)

In this case, follow the steps below to open Excel files:

- (1) On the Excel menu bar, select [Tools] - [Option] - [General].
- (2) Uncheck "Ignore other applications" shown below.



<Excel 2000>

■ The maximum registration number of each setting item

The maximum registration number for each item is shown in the table below.

Item	Limit value	Remarks
Maximum registration No. of nodes	1022 nodes	
Maximum symbol sheet No.	140 sheets for each entry node	
Maximum row No. for one symbol shee	1500 rows	
Row No. for one group	1499 rows	
Byte size of a group	When using data transfer function or device cache function: 10 Kbytes or less When using APIs: 1 Mbyte or less	
Maximum registration No. of communications between devices	3000 records	The total number of records of a distribution type of data transfer, a collection type of data transfer, and data transfer for ACTION in the whole network project.
Maximum registration No. of device caches	1000 or less	Note that alarm appears when over 100.
Maximum record No. in one device cache	1000 records	Note that alarm appears when over 100.
Total byte No. in one device cache	Always: 1 Kbyte Polling: 10 Kbytes	
Maximum registration No. of ACTIONS	500	
No. of data transfers or ACTIONS available with one trigger condition	300	
Accessible data No. using API queuing access	1500 or less, and also the number of data bytes is 1 Mbyte or less	
File name specification	250 characters or less by full path	

■ Guide to memory in use

The maximum size of a network project file is as follows.

Pro-Server EX Node: There is no restriction.

GP3000 Series Node: 262144 bytes

WinGP Node: There is no restriction.

LT3000 Node: 262144 bytes

GP Series Node: 59526 bytes

The following is the lowest amount of used memory with 'Pro-Server EX' loading a network project file.

Pro-Server EX Node: 1700 bytes approx.

GP3000 Series Node: 1000 bytes approx.

WinGP Node: 1000 bytes approx.

LT3000 Node: 1000 bytes approx.

GP Series Node: 400 bytes approx.

The table below shows used memory capacity for each item.

		Incremental memory for Pro-Server EX nodes	Incremental memory for GP Series nodes	Incremental memory for GP3000 Series nodes/WinGP nodes/LT3000 nodes	Supplement
Additional Function	Add one Pro-Server EX node	320 bytes approx.	100 bytes approx.	20 bytes approx.	
	Add one GP Series node	320 bytes approx.	100 bytes approx.	20 bytes approx.	
	Add one GP3000 Series node, WinGP node or LT3000 node	600 bytes approx.	100 bytes approx.	20 bytes approx.	
	Add one Device/PLC to a GP3000 Series node, WinGP node or LT3000 node	180 bytes approx.	0	50 bytes approx.	Depends on the type of Device/PLC or parameters.
	Add one trigger condition	200 bytes approx.	160 bytes approx.	200 bytes approx.	
	Add one record of a distribution type of data transfer	120 bytes approx.	1. Except for groups: 50 bytes approx. 2. The groups other than alignment groups: No. of group members x 50 bytes approx. 3. Alignment groups: No. of members x No. of elements x 50 bytes approx.	120 bytes approx.	For constant distribution, increases by the byte size of the constant.
	Add one record of a collection type of data transfer	120 bytes approx.	1. Except for groups: 50 bytes approx. 2. The groups other than alignment groups: No. of group members x 50 bytes approx. 3. Alignment groups: No. of members x No. of elements x 50 bytes approx.	120 bytes approx.	
	Add one device cache	50 bytes approx.	0	0	
	Add one record to a device cache	30 bytes approx.	0	0	
	Add one ACTION	250 bytes approx.	50 bytes approx.	120 bytes approx.	Depends on the type of ACTION or parameters.

		Incremental memory for Pro-Server EX nodes	Incremental memory for GP Series nodes	Incremental memory for GP3000 Series nodes/WinGP nodes/LT3000 nodes	Supplement
Additional Symbol	Add one SymbolSheet	120 bytes approx.	0	0	
	Add one symbol which does not belong to Group Symbol	60 bytes approx.	0	0	
	Add one Group Symbol	180 bytes approx.	80 bytes approx.	0	
	Add one symbol is increased in Group Symbol	60 bytes approx.	120 bytes approx.	0	

■ Rules for Specifying Names

'Pro-Server EX' frequently requests you to specify names such as node names, symbol names. Please take the following rules into consideration when naming:

- (1) A name must consist of 32 double-byte characters (64 single-byte characters) or less.
- (2) The following characters are not available for names: + - * / % & ^ | < > \ : @ . , " [] # ? (Space) (TAB)
Some are used, however, in certain reserved words or concatenators.
- 3) You can use "#" at the beginning of a name when specifying a new node or symbol name, but 'Pro-Server EX' recognizes these words starting with "#" as reserved words. Therefore, don't use "#" at the beginning of a name.
- (4) You cannot use single-byte numeric characters at the beginning of a name.
- (5) You may connect names, for example, for grouped symbols, but don't exceed the maximum number of characters (255 double-byte characters) including extensions like "." (dot) and "[" "]" (brackets), elemental numbers, and global constant numbers.

Ex.) Group1[1].Symbol1
Group2[LOTNO].OpeName[MACHINE1].Temp

- 6) Names are not case-sensitive.

<Recommended Rules>

Sometimes 'Pro-Server EX' exchanges data with other applications.

Names are then used as keywords, and thus 'Pro-Server EX' can fail to exchange data according to specifications of other applications. To prevent such possible trouble, the following rules are recommended:

- (1) Don't start a name with "__" (2 underscores).
- (2) 'Pro-Server EX' internally uses UNICODE character strings for name data, but on the other hand, many applications uses multi-byte character strings. Thus, character strings are frequently converted between UNICODE and Multi-byte. Depending on the OS language you are using, characters may be garbled. In this case, 'Pro-Server EX' does not work properly, so it is recommended to avoid using machine-dependent characters as much as possible.
In addition, use only alphanumeric characters when using DDE function of Excel. Katakana or double-byte characters exit the Excel DDE function (due to Excel specifications).

■ Accessing the backup SRAM

While 'Pro-Server' is accessing the backup SRAM, the status data of "0500h" is stored in the mode of the control address when the GP has received a request for transfer from the backup SRAM to the CF card.

In this case, perform the transfer again to the CF card.

■ BCD Conversion

BCD16→BIT	Convert to 0 and 1 per 16 bits
BCD16→BCD16, BCD32	No conversion
BCD16→16BIT	Convert from BCD to Binary at read
BCD16→String	Convert from BCD to Binary at read and write to character strings under text mode at write
BCD16→ACTION	Convert from BCD to Binary at read
BCD32→BIT	Convert to 0 and 1 per 32 bits
BCD32→BCD16, BCD32	No conversion
BCD32→16BIT	Convert from BCD to Binary at read
BCD32→String	Convert from BCD to Binary at read and write to character strings under text mode at write
BCD32→ACTION	Convert from BCD to Binary at read
BIT→BCD16	Extend bit to 16-bit unit
BIT→BCD32	Extend bit to 32-bit unit
16BIT→BCD16, BCD32	Convert from Binary to BCD at write
32BIT→BCD16, BCD32	Convert from Binary to BCD at write
String→BCD16, BCD32	Read character strings at read and convert from Binary to BCD at write

■ When renewal of a screen data, reading processing, etc. are delayed

In a GP3000 Series Node, WinGP Node and LT3000 Node, write-to-device processes take precedence over read processes such as screen update and sampling.

Therefore, when a large quantity of data is written to a Node, or when multiple Nodes try to write data (even if in small quantity) to a Node at a time, read processes may be delayed because they have a lower priority.

This problem occurs via a network as well.

GP screen data is not updated if the read process is delayed.

Referring to the communication cycle time^{*1}, tune the amount of data to write via the network.

NOTE

- If writing a large quantity of data is required, Pro-Server EX provides a "Writing in progress" indicator lamp or message by turning ON a certain device bit before start of writing, and by turning it OFF after completion of writing, to inform the operator of a delay caused by writing.
- When writing data from multiple Nodes at a time is required, the method that writes the data from each Node into the internal device first and then writes the integrated data into the device of the device/PLC may improve the performance.

*1 Communication cycle time is the time between data request from GP to the device and acquisition.

■ If you install 'Pro-Server EX' and 'WinGP' in the same system

If you install 'Pro-Server EX' in the system with 'WinGP' installed, 'WinGP' will be deleted. To install 'WinGP', install 'Pro-Server EX' first, then install 'WinGP'.

In this case, "WinGP SDK" is not installed, however, if you set the node in 'Pro-Server EX', you can use application software using "WinGP SDK" without any steps.

■ Real variables on 'GP-Pro EX'

In 'Pro-Server EX', you cannot use real variables on 'GP-Pro EX'. Therefore, you cannot use "R_" when specifying the device address in address format.

■ OPC Configuration Tool

LT3000 nodes are categorized as GP3000 Series nodes in the OPC Configuration Tool.

■ OPC Server

While connected to the OPC Server, do not perform a reload using 'Pro-Server EX'. To change the network project, shut down all connections to the OPC Server before performing a reload.

■ MES ACTION

- An error occurs when the CF function is used in MES ACTION with GP3200 Series or LT3000, because they do not have a CF card slot.
- MES ACTION cannot be copied or pasted on the 'Pro-Studio EX' feature setting screen.
- For "MES Action: GP CF-card Alarm-History-File Collection", once the table to which data is output is deleted, the output table may not be recreated even if the ACTION is activated. In this case, navigate through the 'Pro-Server EX' installation folder → the Content folder → the ProCfAlarm folder to find the appropriate Action GUID file and delete it.
- Symbols imported from 'GP-Pro EX' have fixed [Data Type] and [No.], which cannot be edited.

■ Device Monitor for Multiple Addresses

No support is available for bit-type multiple-point access to the devices listed in the following table.

Manufacturer	Driver Name	Target Device
Siemens AG	SIMATIC S7 MPI Direct	Data Block (DB)
		Input (I/E)
		Output (Q/A)
		Marker (M)
		Variable (V)
Siemens AG	SIMATIC S7 3964 (R)/RK512	Data Block (DB)
		Input (I/E)
		Output (Q/A)
		Marker (M)
Siemens AG	SIMATIC S7 Ethernet	Data Block (DB)
		Input (I/E)
		Output (Q/A)
		Marker (M)

Manufacturer	Driver Name	Target Device
PROFIBUS International	PROFIBUS DP Slave	Data Block (DB)
		Input (I/E)
		Output (Q/A)
		Marker (M)
		Direct I/O Input (PI)
		Direct I/O Output (PQ)
Siemens AG	SIMATIC S5 CPU Direct	Input Relay (I)
		Output Relay (Q)
		Internal Relay (F)

■ Device Addresses When Omitting Bit Position

If a device address is specified as Bit type without specifying its bit position, the first bit represents the bit position.

36.3 Restriction on Protocol

■ Special Protocol

'Pro-Server EX' does not support the following 12 types of special protocol required when connecting to GP Series.

- MITSUBISHI MELSECNET/10
- OMRON SYSMAC-CS1 (ETHER)
- HITACHI HIDIC H (ETHER)
- Siemens S7-200 via MPI
- Siemens S7-300/400 via MPI
- SIEMENS S7-300/400 (ETHER)
- AB Slc500 DH485
- AB ControlLogix (EtherNet/IP)
- Allen Bradley SLC5/05 (ETHER)
- Schneider TSX via UNI-TELWAY
- Schneider Modbus TCP (ETHER)
- Schneider Modbus RTU 1:n comm.
- AB ControlLogix (EtherNet/IP)

■ Protocols unsupported

"ControlLogix/CompactLogix Series Native" Series are not supported.

■ Restrictions When Accessing 64-bit Device

In 'Pro-Server EX', when accessing a 32-bit device using double-precision floating point, the access target is 2 sequential 32-bit devices.

Refer to the following access order regarding Low/High placement of the data when accessing 32-bit device of Device/PLCs.

Via GP Series Node: Access in the order of Low to High.

Via GP3000 Series Node, WinGP Node or LT3000 Node: Access in the order of High to Low.

Protocol name in GP Series Node	Protocol name in GP3000 Series Node, WinGP Node or LT3000 Node	Target Device Name
Fuji Electric Co., Ltd. MICREX-F Series	Fuji Electric FA Components and Systems Co., Ltd. MICREX-F Series SIO	BD
		DI
		TR
		TS
		W9.
		CR
		CS
		W33.
		W34.

Protocol name in GP Series Node	Protocol name in GP3000 Series Node, WinGP Node or LT3000 Node	Target Device Name
Allen Bradley ControlLogix DF1	Rockwell Automation, Inc. DF1	REAL

■ Sequential Address Specification

'Pro-Server EX' has restrictions when specifying sequential addresses in the following protocols required for connecting to GP Series.

Yokogawa Electric Corp. FACTORY ACE 1:1 communication

Yokogawa Electric Corp. FACTORY ACE 1:n communication

Yokogawa Electric Corp. FA-M3(ETHER)

Sequential specification is not available in X and Y devices.

Sequential specification in the same link number is available in L and W devices.

Hitachi Industrial Equipment Systems Co., Ltd. HIDIC H Series

Hitachi Industrial Equipment Systems Co., Ltd. HIDIC H2 Series

Sequential specification is not available in X, Y, WX and WY devices.

SIEMENS S5 90-115 Series

SIEMENS S5 135-155 Series

Sequential specification in the same Data Block is available in SIEMENS S5 3964(R) D, X devices.

Sequential bit specification is not available in I, Q and F devices.

Sequential bit specification is not available in DB*W(* shows 1 to 60) device.

Sequential bit specification is not available in I, Q, M, SM, V, T and C devices.

Sequential bit specification is not available in I, O, M and DB*W(* shows 2 to 60) devices.

Sequential bit specification is not available in I, O, M and DB*W(* shows 2 to 60) devices.

Allen Bradley SLC500 Series

Allen Bradley PLC-5 Series

Sequential specification in the same file number is available in PLC devices of Allen Bradley.