










# Chapter 1

## Basic setting

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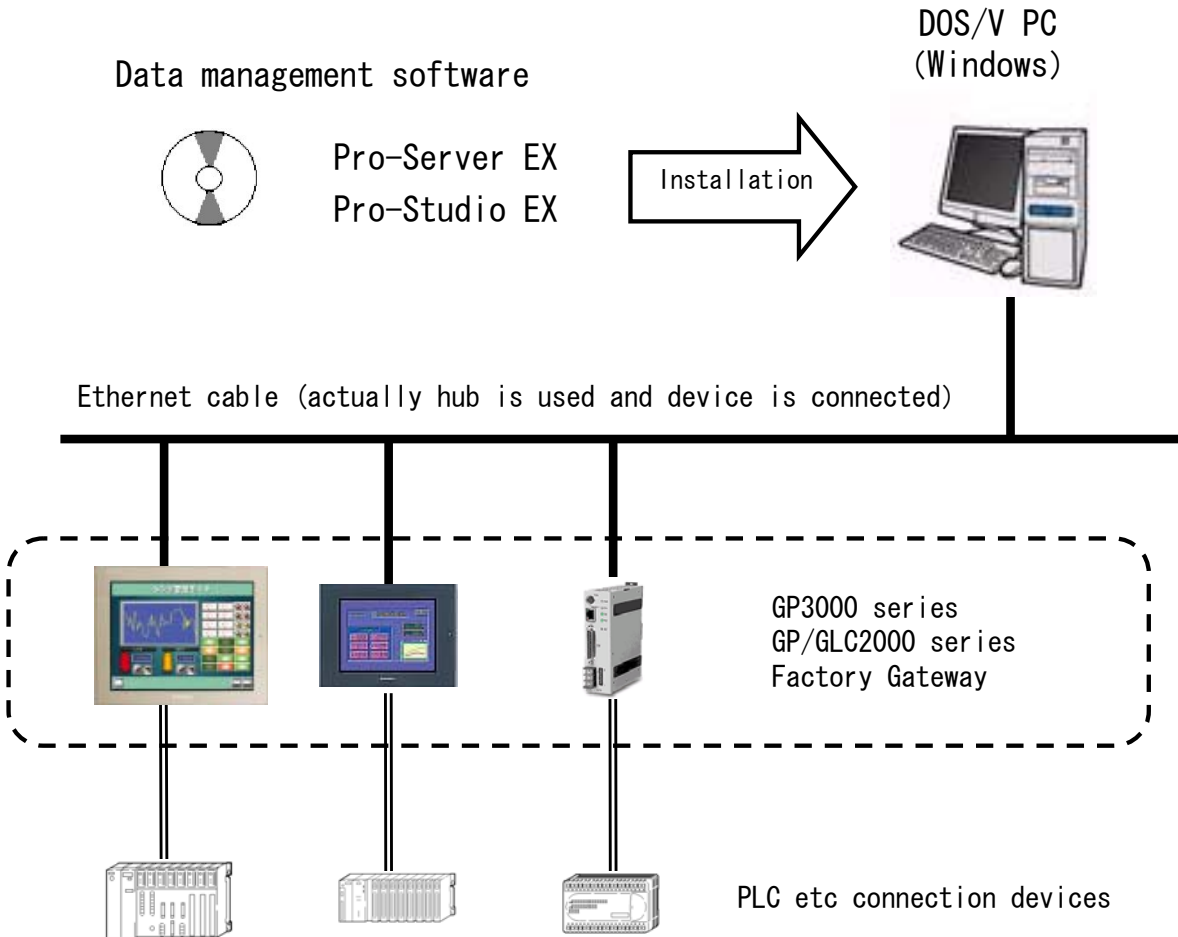
### Chapter 1 Basic setting

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## Development environment

«Prerequisite at the time of development»



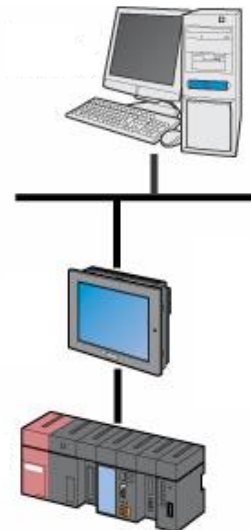
### Notes

#### Practice environment

Machines to be used in practice of this document are as follows.

- DOS/V PC  
Installation software: Pro-Server EX  
Pro-Studio EX  
Microsoft Excel
- GP3500T  
(Screen data used for practice)※1
- Mitsubishi Electric Corporation's PLC Melsec AnN + computer link unit  
(Ladder program used for practice)※2
- Ethernet cable, LAN hub
- Communication cable etc in indicator PLC

※1, 2 - For screen for practice and ladder program details, refer to appendix.



## «Installation»

”Pro-Server EX” and “Pro-Studio EX” are installed on PC.  
For installation operation details, refer to the installation guide of the packaged software.



- ① Install “Pro-Studio EX” and “Pro-Server EX”.
- ② Install only “Pro-Server EX”.

※ This screen is the set up menu when the Developer is purchased.

Only ② is displayed if only Runtime is purchased.

This document is targeted for the persons who have purchased the Developer.

### Notes

- Respective license codes need to be input at the time of installation of Pro-Server EX and Pro-Studio EX.
- One license is necessary, respectively, for each PC unit.  
If it is to be installed on multiple PC units, kindly purchase the equivalent quantity licenses.



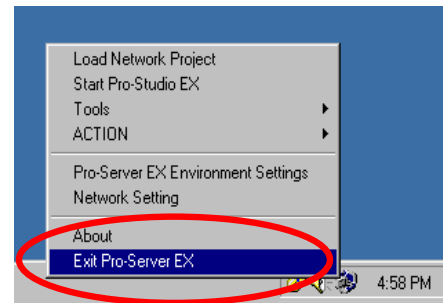
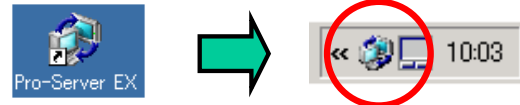
## Pro-Server EX and Pro-Studio EX

### 《Pro-Server EX》

It is a data management software that resides in higher rank PC and mediates the information exchange between indicators.

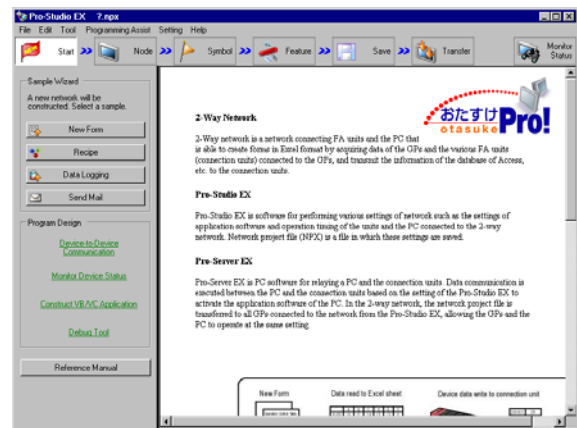
During the operation, as shown in the right side picture, an icon is displayed in taskbar on lower right of the PC screen.

To close, select “End of Pro-Server EX” by right click.



### 《What is Pro-Studio EX》

It is the development software that executes various settings of Pro-Server EX. Setting for data exchange is created as network project file (NPX).



### 《Status bar of Pro-Studio EX》

A large icon is arranged horizontally on upper part of the window of Pro-Studio.

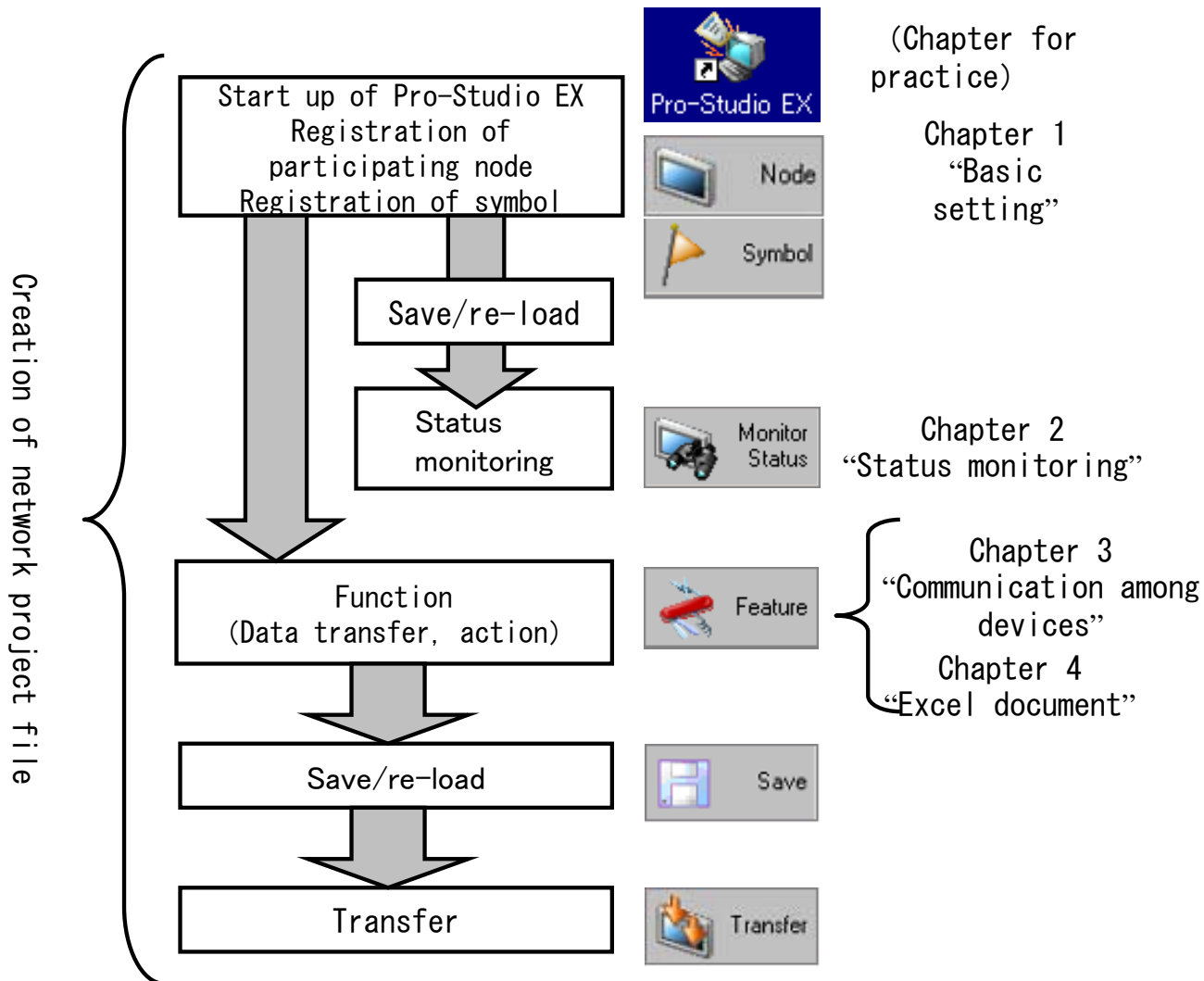
This is called status bar and by clicking from left to right, respective setting is executed and one network project file is completed.





Flow of basic design

«Flow of Pro-Studio EX setting»

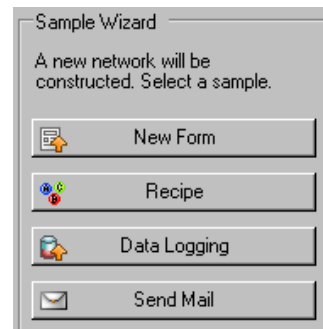


It resides in the task bar when Pro-Server EX is activated according to the timing of re-load.

★ One point

Sample wizard

Flow of setting of each function can be exercised in the sample wizard displayed in the left above part of the window at the time of activating Pro-Studio EX. However, it is not possible to use the created network project file as it is at work place.

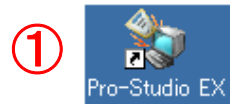




**New creation of network project file**

Create new network project file by activating Pro-Studio EX

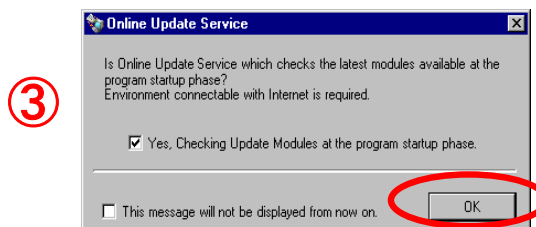
① Double click the icon of [Pro Studio EX] on desktop.



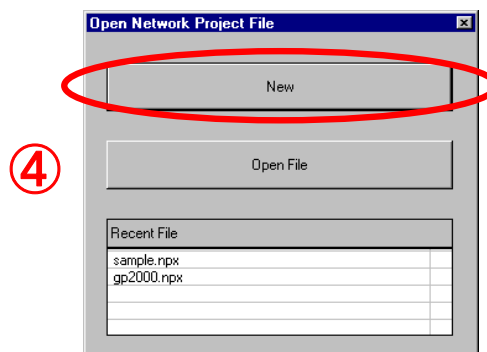
② Logo of [Pro Server EX] is displayed.



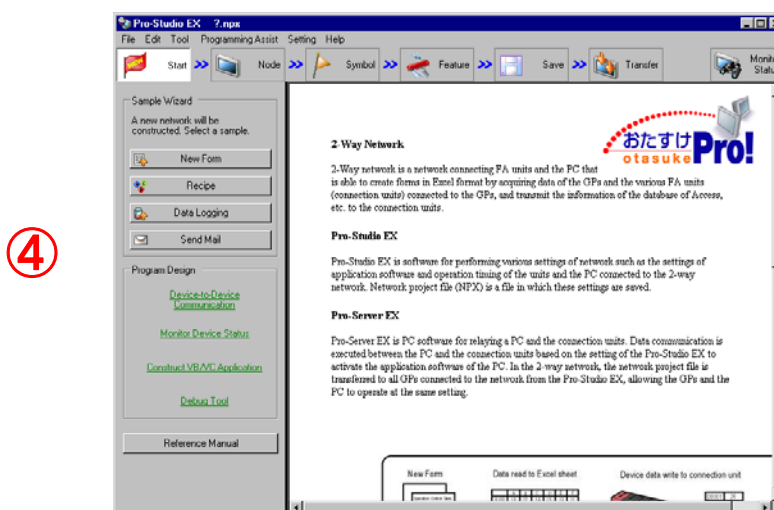
③ Dialog box of online update is displayed. Click [OK].



④ Click “Create new” button from dialog box of open network project file.



⑤ Pro-Studio EX is activated.





## Registration of participation node

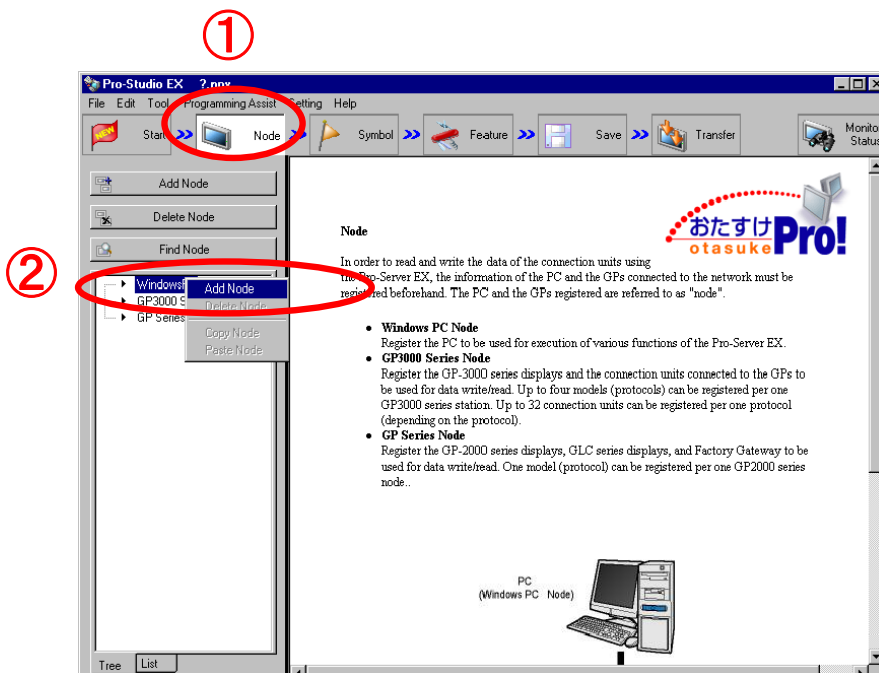
Registration of participation node (Windows PC and AGP etc) that exchanges data is executed. One PC and one AGP3500T are registered in practice.



For details, refer to reference manual “Chapter 29 About participation node registration”.

(1) PC is registered as participation node.

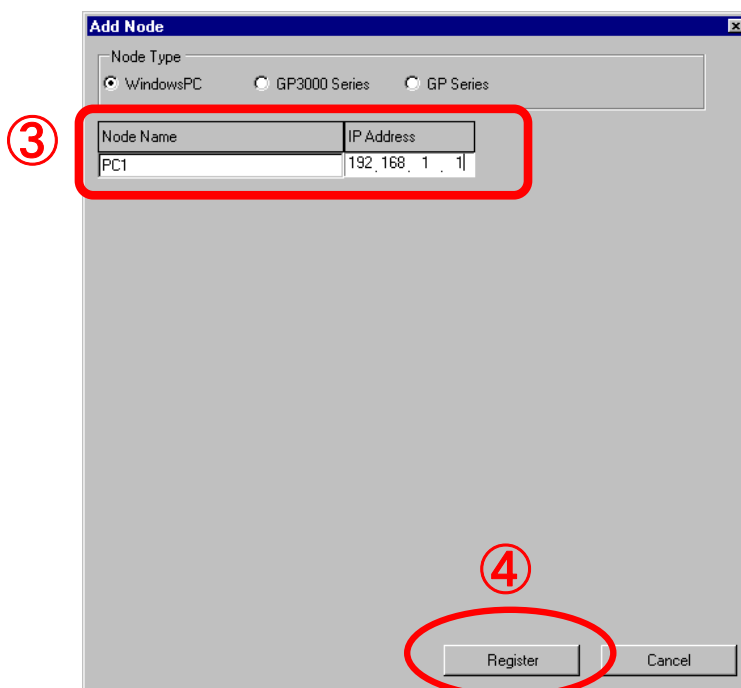
- ① Click “Participation node” of status bar.
- ② Right click on “Windows PC” and click on “Add participation node”.



③ Input node name and IP address.

[PC1 192.168.1.1]

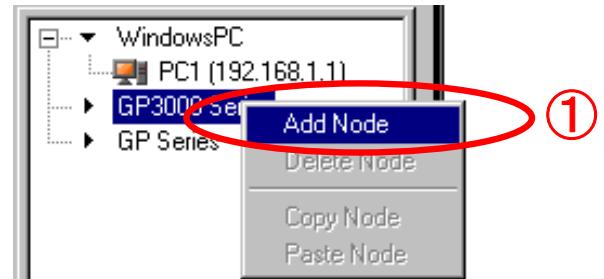
④ Click “Register”.





(2) Next, GP3500T is registered.

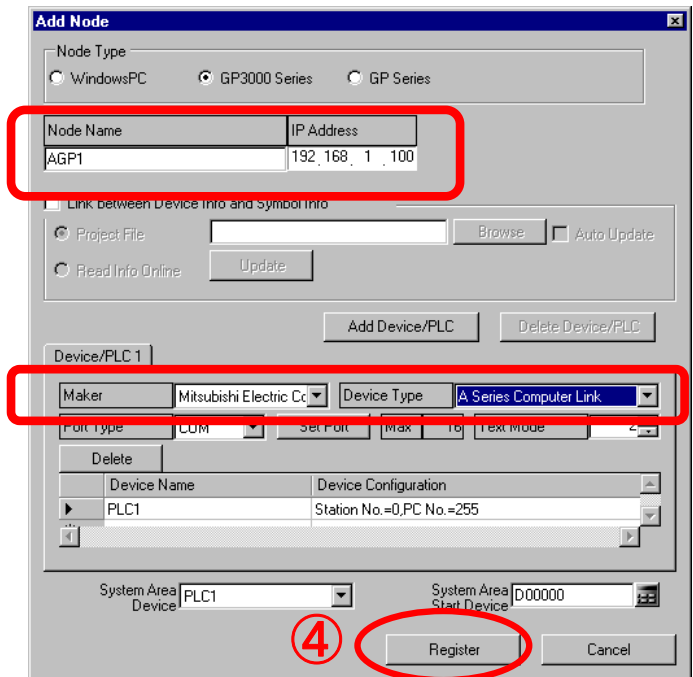
① Right click “GP3000 series” and click “Add Participation node”.



② Input node name and IP address.

[AGP1 192.168.1.100]

②



③ From pull down button, select [Mitsubishi Electric Corporation] in connector's maker name and [A series computer link] in type of device, respectively.


③

④ Click on “Register”.

⑤ PC and GP3000 series get registered as shown in the picture on right.



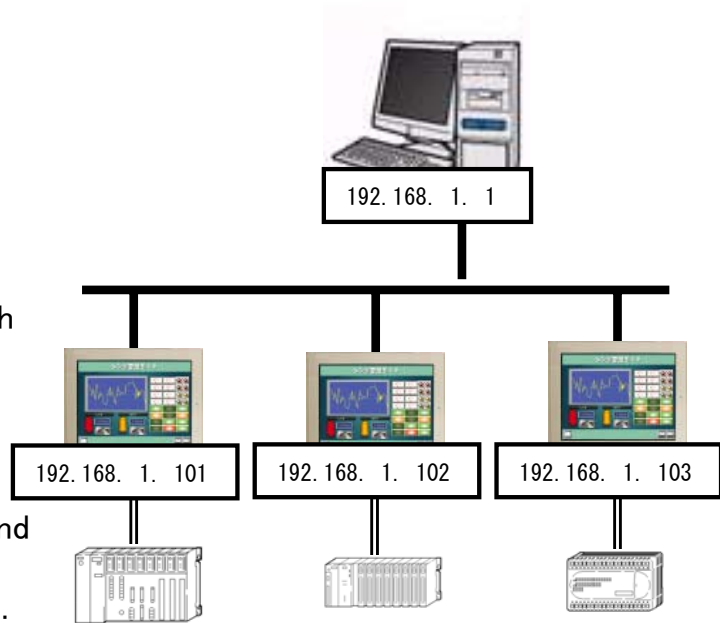
Registration of Participation node to be used in practice is complete.

 One-point

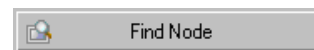
Simple method of registration of participation node


If each participation node is already connected to Ethernet, Participation node that can be communicated by Pro-Server is searched just clicking on “Search participation node” icon.

Registration of participation node can be done just by selecting node that is inserted and operated in network project file and clicking “Participate” button.

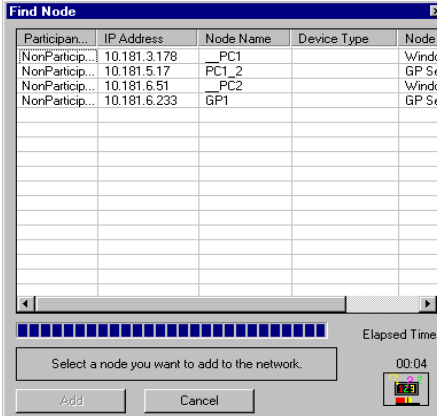


For example, in case of network structure of right above diagram, if “Search of Participation node” button is clicked, display as given in the picture on right is executed.





At that time, if Pro-Server EX is not activated, it is activated.



Participan...	IP Address	Node Name	Device Type	Node
NonParticip...	10.181.3.178	PC1	Wind	GP S4
NonParticip...	10.181.5.17	PC1_2	Wind	GP S4
NonParticip...	10.181.6.51	PC2	Wind	GP S4
NonParticip...	10.181.6.233	GP1	GP S4	

Elapsed Time: 00:04

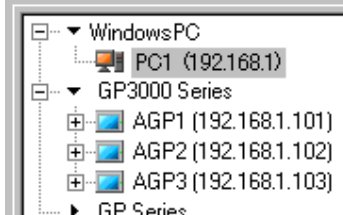
Select a node you want to add to the network.

[Add] [Cancel]



If the searched participation node is selected while pressing Ctrl key and “Participate” is clicked, all the nodes can be registered at the same time as shown in the picture given right below.

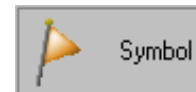
Confirm the setting by referring to “Communication setting of PC and confirmation method” of introductory chapter, if communication is not smooth.





## Registration of symbol

Symbol is the data contents to be used to access the device of connection for Pro-Server EX. Symbol corresponding to each device address is registered.



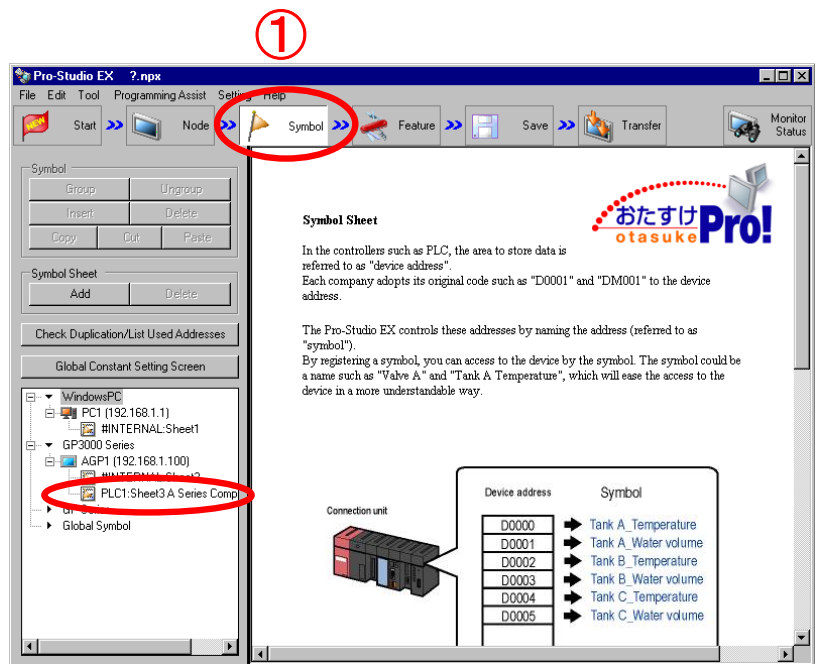
For details, refer to reference manual “Chapter 30 Symbol registration”.

(1) Symbol for Word address D50 of PLC1 is registered. (It is used in practice of chapter 2~4)

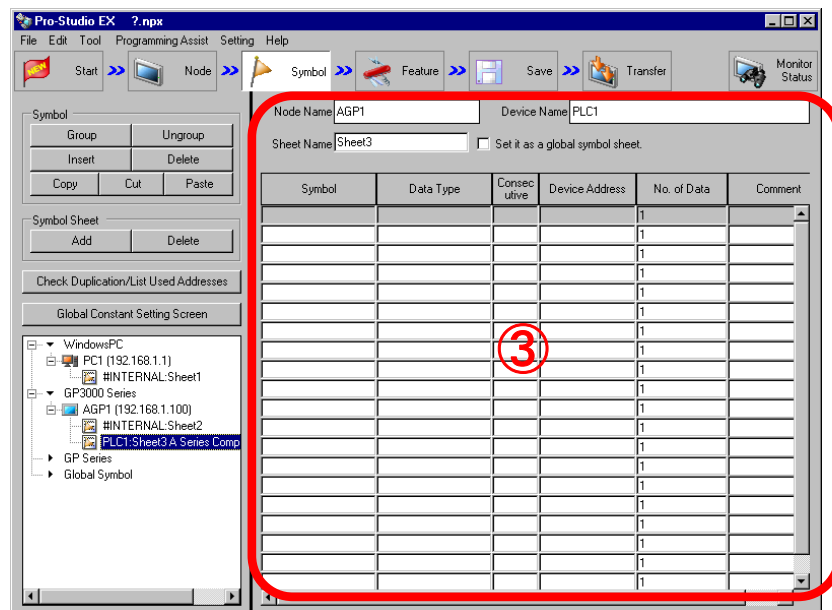
① Click “Symbol” of status bar.

② Select “PLC1 Sheet3 A series computer link unit” of “GP3000 series”.

②



③ Symbol sheet opens on right side.



④ Double click the cell of row of “Symbol” of gray line of the top.

④

Symbol	Data Type

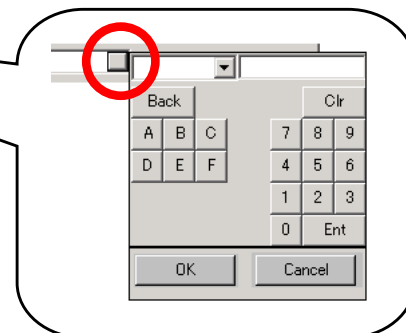
⑤

⑥

The 'Edit Symbol' dialog box contains the following elements:

- Symbol name: `_D00050_WORD`
- Address: `D00050`
- Data Type: `16 Bit` (selected)
- Options: `Signed Decimal` (selected), `Unsigned Decimal`, `Hexadecimal`, `BCD`
- Quantity: `No. 4`
- Buttons: `<`, `>`, `Continuous Insertion`, `OK`, `Cancel`

⑧



⑨

⑤ Input device address which is to be symbolized. [D50]

If input column is clicked and button in right is clicked, addresses can be input by mouse click from keyboard as shown in the picture on right.

⑥ Select [16 bit] in data type.

⑦ Quantity is considered to be [4].

⑧ Click “Symbolize address”.

⑨ “Click “OK” button.

(2) Symbol registration of serial 3 bit is executed from bit address M0 of PLC1. (It is used in the practice of chapter 2~4)

Symbol	Data Type	Consecutive	Device Address	No. of Data	Comment
<u>_D00050_WORD</u>	6Bit(Signed)		D00050	4	
				1	
				1	
				1	

① Double click the cell of row of 2<sup>nd</sup> “Symbol”.

② Input device address which is to be symbolized.

If input column is clicked and button in right is clicked, addresses can be input by mouse click from keyboard as shown in the picture on right.

③ Select “Bit” in data type.

④ Quantity is considered to be “1”.

⑤ Click “Symbolize address”.

⑥ **Click “Continuous insertion” twice.**

⑦ Click “OK”.

シンボル	データタイプ	連続	デバイスアドレス	データ個数
_D00050_WORD	16Bit(Signed)		D00050	4
_M0000_BIT	Bit		M0000	1
_M0001_BIT	Bit	+	M0001	1
_M0002_BIT	Bit	+	M0002	1

Registration of symbol is complete.

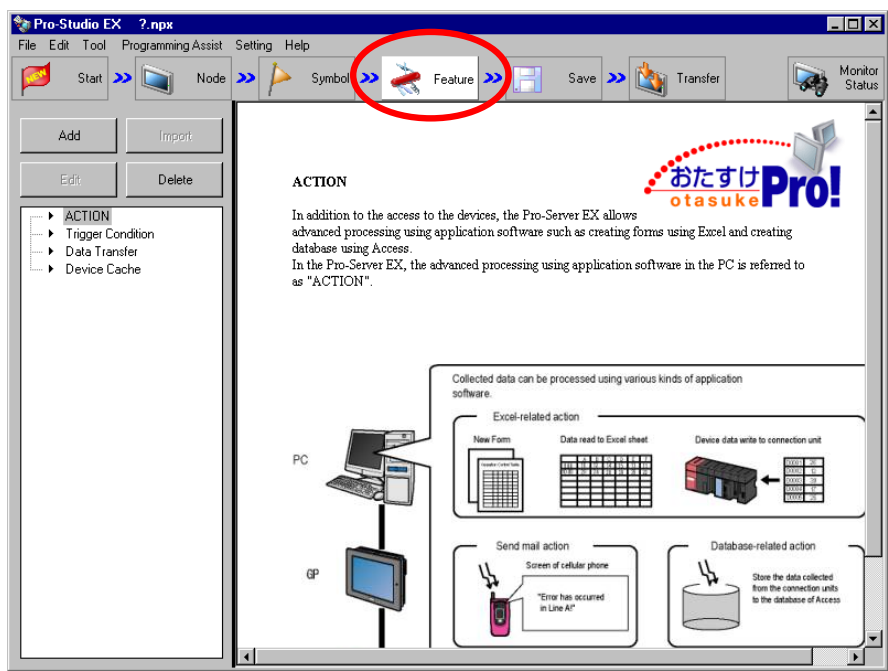


Setting of function

Action, activation condition, data transfer etc are set.



For details, select items matching to the needs of client from reference manual “Chapter 4 List of exchange items”.



Action.....It is a function that exchanges data with various application software in PC that starts with starting condition.

→Practice of excel document is executed in Chapter 4 Excel document.

Start up condition.....This operation becomes signal of process of action and data transfer.

Change in data, time and cycle can be specified.

Data transfer....Each participation node exchanges data that start with start up condition. 2 operations such as distribution type and collection type are possible in data transfer.

→Practice of data transfer between AGP and PC is executed in chapter 3.

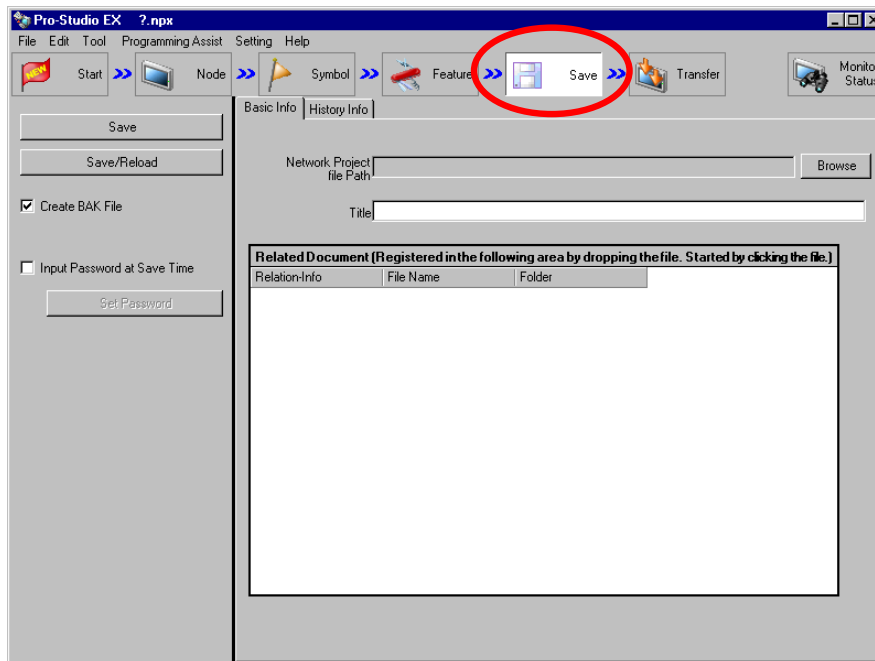


Save

Setting of participation node, symbol, function respectively, is saved on the PC as one network project.



For details, refer to reference manual “Chapter 24 Save”.



One-point

Save/Re-load



Network project file (NPX) created in Pro-Studio EX is saved on PC and read in Pro-Server EX.

Pro-Server EX starts operation based on the setting of NPX by re-loading.

With reference to next page, NPX is saved/re-loaded here.

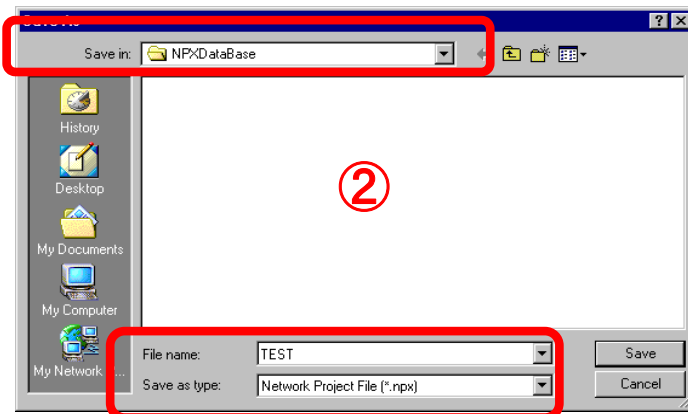
① Click save/re-load.

①

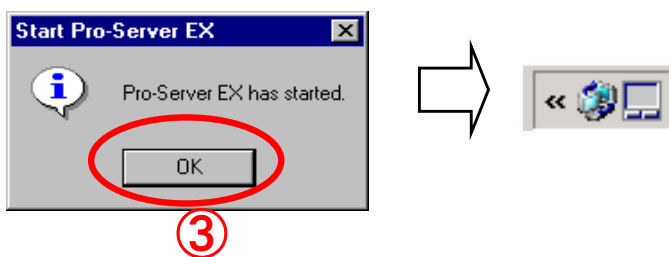


② Input save location, file name and save NPX.

※ Save by attaching "TEST.NPX" in practice.



③ Click "OK". Pro-Server EX is started and icon is displayed in task tray at the time of re-load.



③

④ Input as shown below in "Registration of file related information" and click "Register".

User administration No. : 1.0
Comments : Absent
Company name : *** (As per setting of PC)
Name of person in charge : *** (As per setting of PC)



④



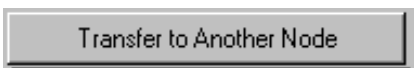
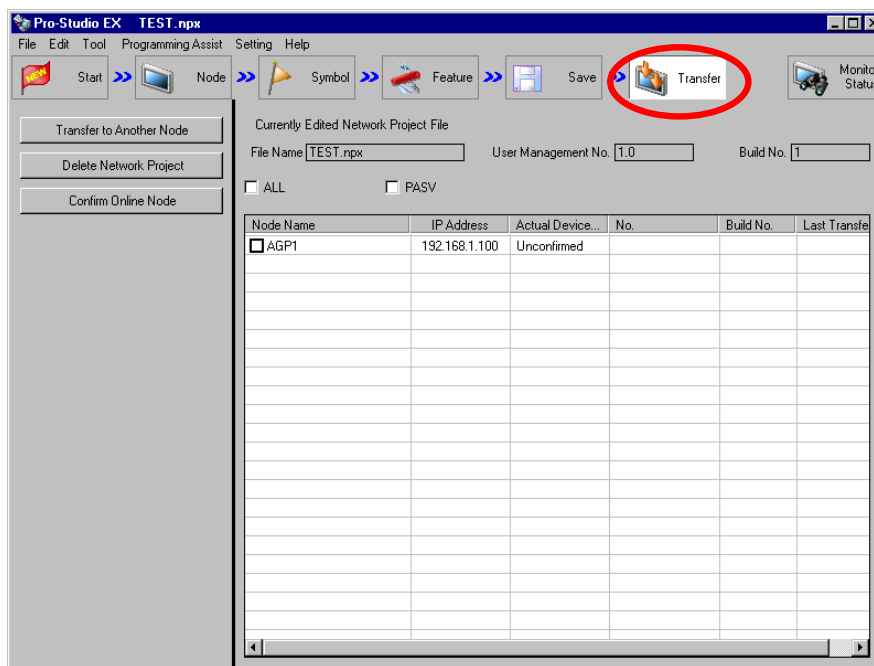


# Transfer

Saved network project file is transferred to participation node other than PC.



For details, refer to reference manual “Chapter 25 Transfer”.



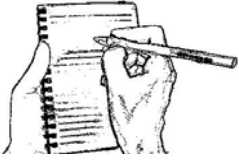
※Here, another node means “Participation node other than PC, on which, Pro-Studio EX has been installed”.

Check transfer destination of NPX from participation nodes given in the list on right and if “Transfer to another node” is clicked, NPX is transferred to respective node.

Here, Chapter 2 Practice of status monitoring is implemented without executing transfer.

## Notes

To execute setting of function, NPX is transferred to each participation node.  
Again, transfer to Pro-Studio EX PC itself is not required.



Memo (You can use following blank page for notes.)