
29 Node Registration

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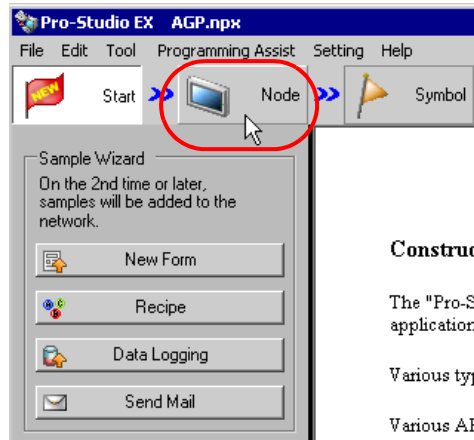
29.1 Registration and Deletion of Entry Nodes

To use 'Pro-Server EX', you must first register the PC and GP connected on the network as entry nodes. You set the node name, communication information like IP addresses, and Device/PLC type as registration information.

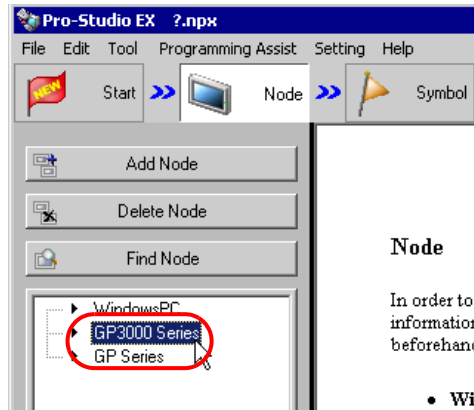
This section describes the procedure to register and delete entry nodes.

29.1.1 Registration of Entry Nodes

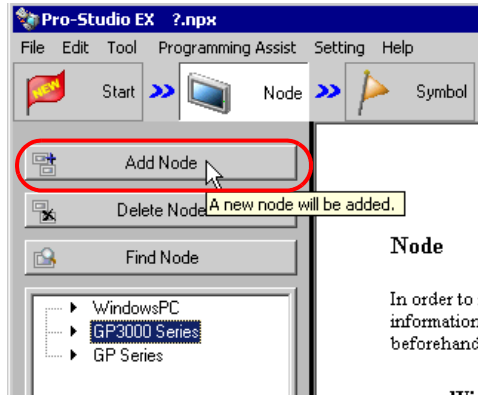
- 1 Click the [Node] icon on the status bar.



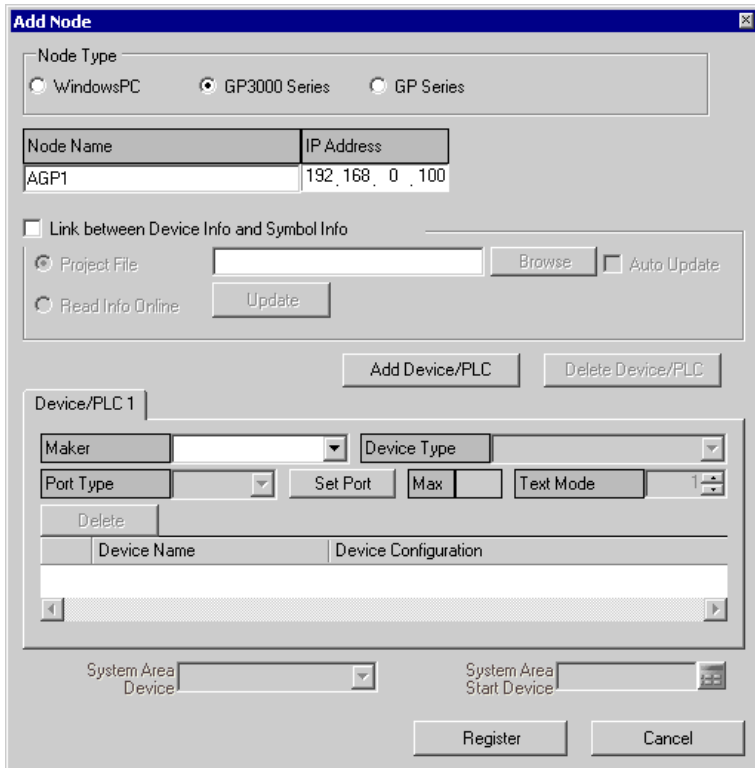
- 2 Select a node type from the tree display on the left of the screen: "Windows PC", "GP3000 Series" or "GP Series".



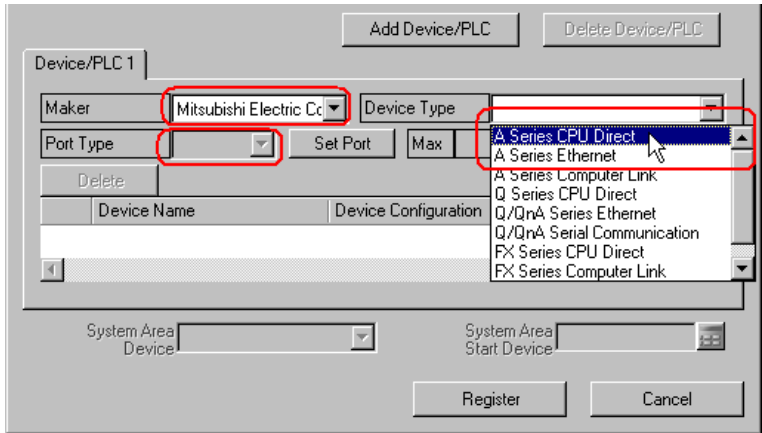
3 Click the [Add Node] button.



4 Enter [Node Name] and [IP Address]. (Enter [Subnet Mask] and [Gateway] as well in the GP Series case, if required.)

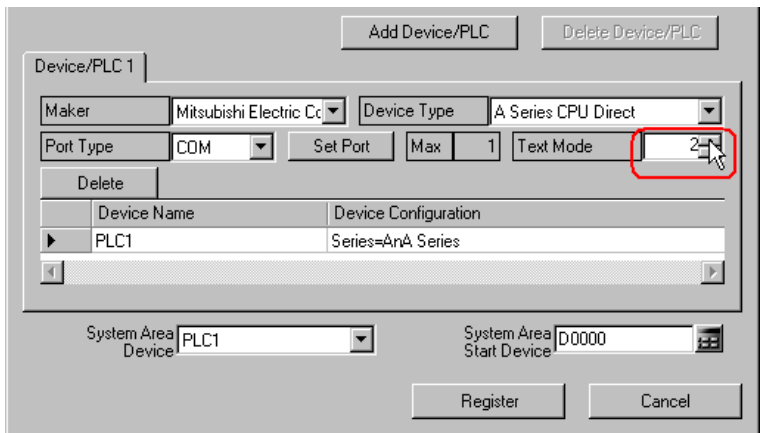


- 5 Click the list buttons of [Manufacturer], [Device Type] and [Port Type], and set these items related to Device/PLC.
 (When you select "GP Series" as the node type, set [Device Type] only.)



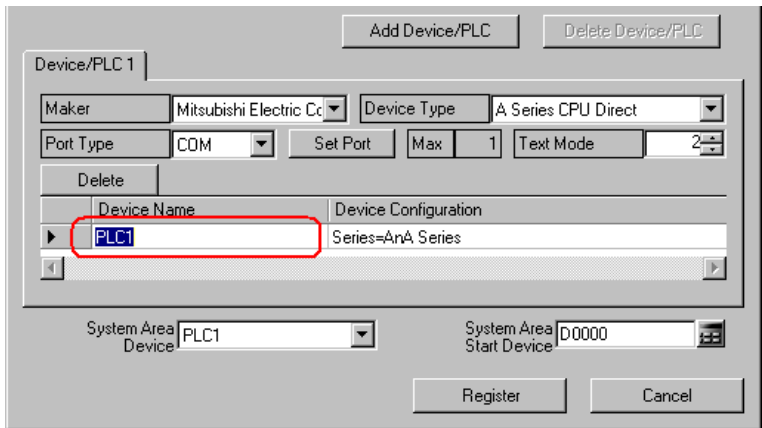
- NOTE**
- The following items are automatically determined according to the selection of Device/PLC type. To change the setting, please follow the steps given below.
 - Please correspond the registered information of Device/PLC to that of the actual Device/PLC of the GP. If the setting is incorrect, proper operation is not expected.

- 6 Click the [▲] or [▼] button of [Text Mode] to specify the text mode adopted by Device/PLC.



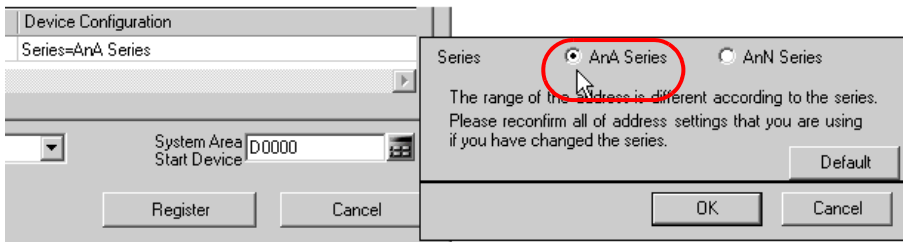
- NOTE**
- Text mode is automatically set when [Device Type] or [Port Type] is selected. This step is necessary only when you wish to change this setting.

7 Click the [Device Name] field and enter a Device/PLC name. (GP3000 Series only)

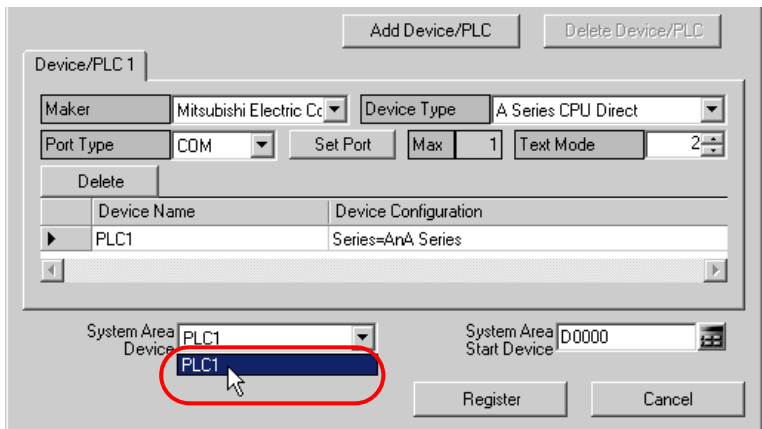


NOTE • Please make sure to totally conform the device name, type and setting to the data specified in 'GP-Pro EX'. Inconsistency may cause access to unauthorized devices.

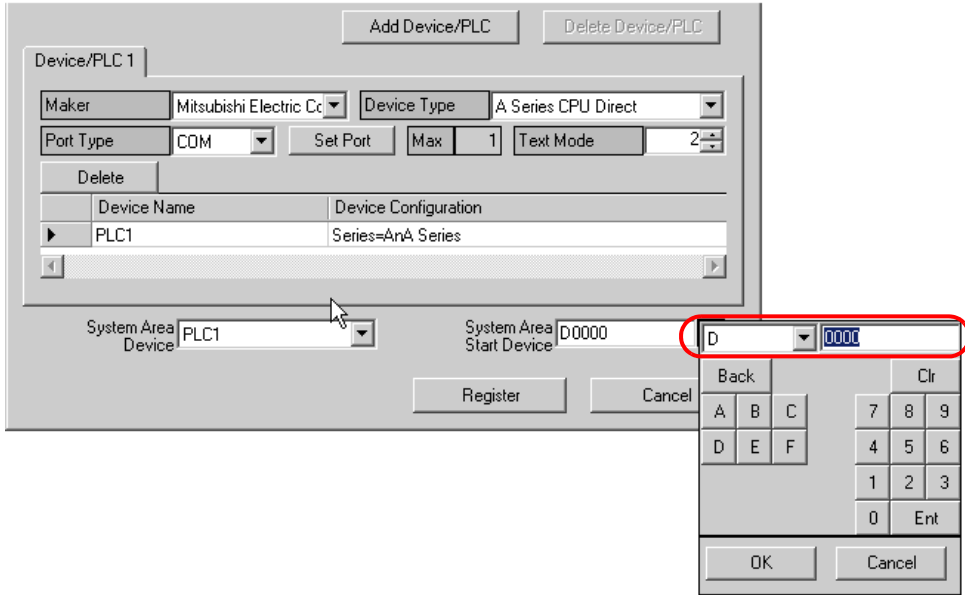
8 Click the [Device Setup] field to set a device. (GP3000 Series only)



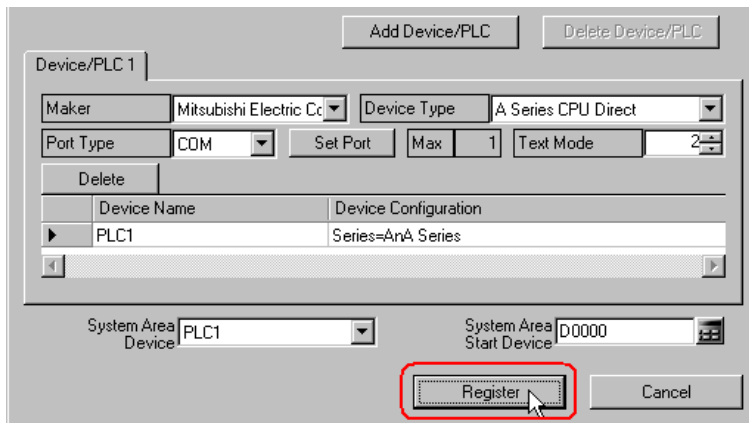
9 Click the list button of [System Area Device] to select the Device/PLC to which the system address is assigned. (GP3000 Series only)



- 10 Enter the first device address of the assigned system area in [System Area Start Device]. (GP3000 Series only)
 Enter the address directly or click the Calculator icon to enter it on the device address input screen.



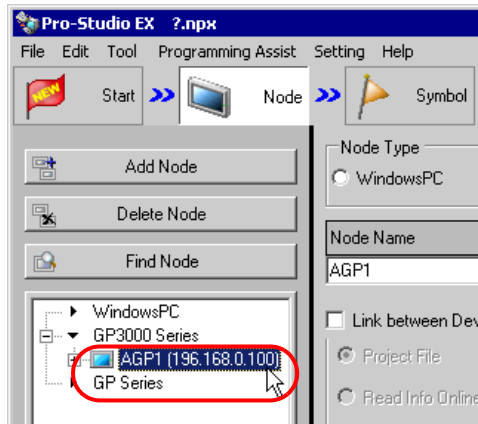
- 11 Click the [Register] button.



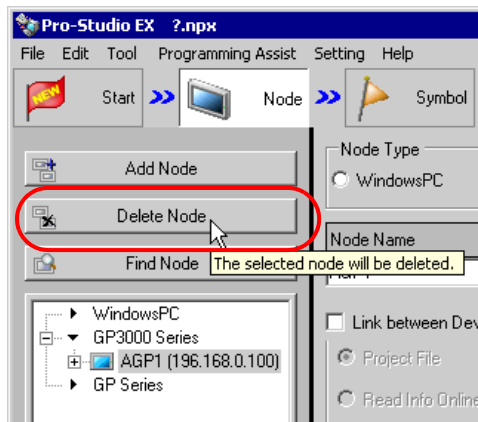
The entry node is now registered with the set contents.

29.1.2 Deletion of Entry Nodes

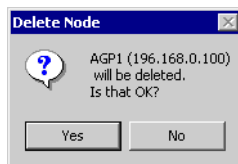
- 1 Select the entry node you wish to delete from the node list on the left of the screen.



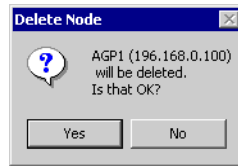
- 2 Click the [Delete Node] button.



The following message appears confirming the deletion.



3 Click the [Yes] button.



The selected node is now deleted.

NOTE

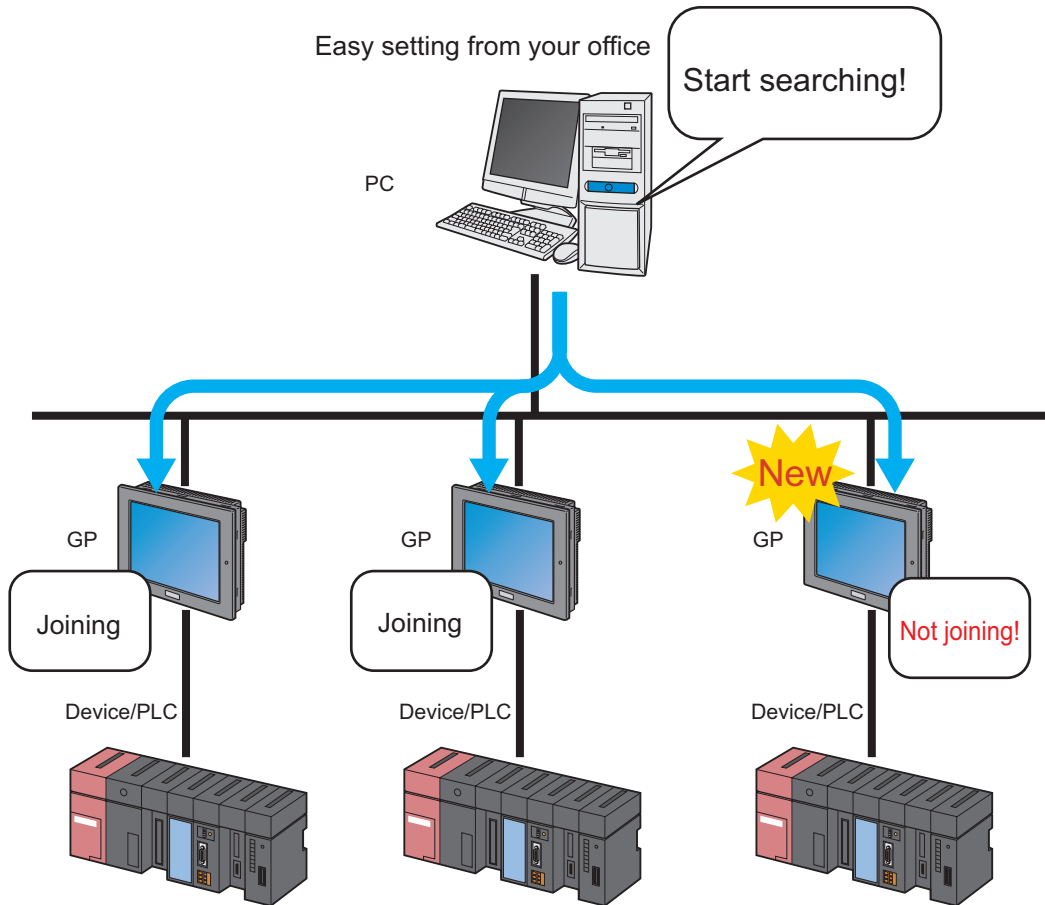
- Node deletion may cause inconsistency in the contents specified on the feature screen. Please check the contents of a network project file to confirm the consistency before reloading and transferring it.
-

29.2 Searching Nodes

29.2.1 What is "Searching Nodes"?

You can register the PC and GPs that are active on the network, individually as a node, and also detect and register any node that is not in the network project file by using the search function.

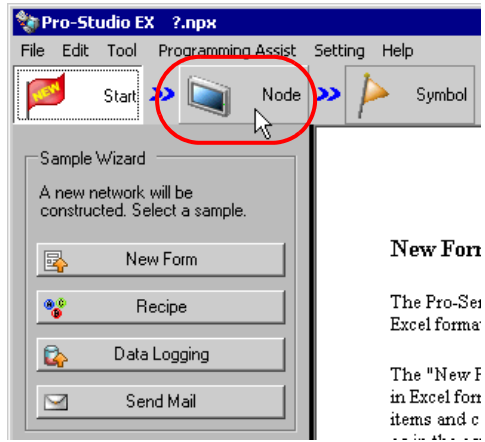
It allows you to register network nodes easily, without confirming on the spot the Ethernet setting of each GP.

**NOTE**

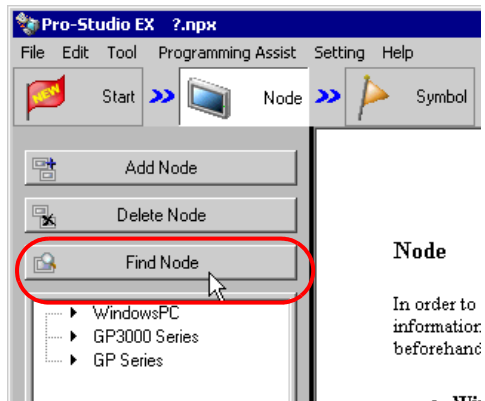
- The search area (where nodes can be found) covers the nodes having the same class ID as that of the IP address of the PC to search. You cannot search the nodes located in the different class or over the router.

This section describes how to use the search function and register entry nodes.

1 Click the [Node] icon on the status bar.

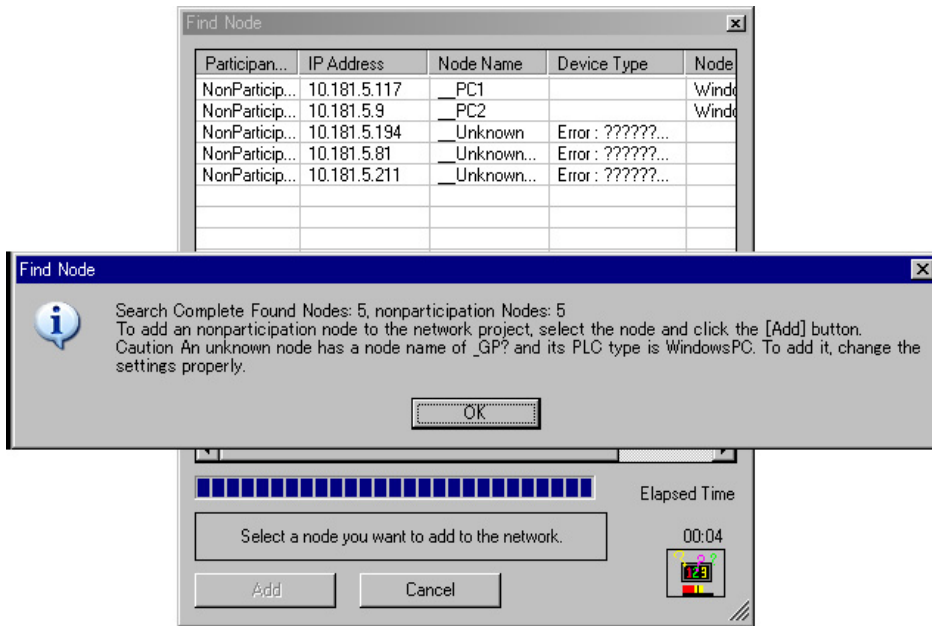


2 Click the [Search Node] button.



The search of entry nodes now starts and the "Search Node" screen appears.

The "Search Node" screen shows the number of the entry nodes currently connected on the network (detected nodes) and the number of those not registered (Non-entry nodes).

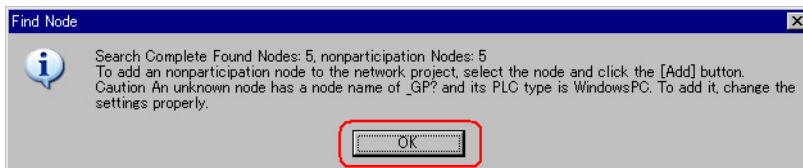


- NOTE** • To perform the node search function, 'Pro-Server EX' should be operated. If 'Pro-Server EX' is not running, the following dialog message appears.

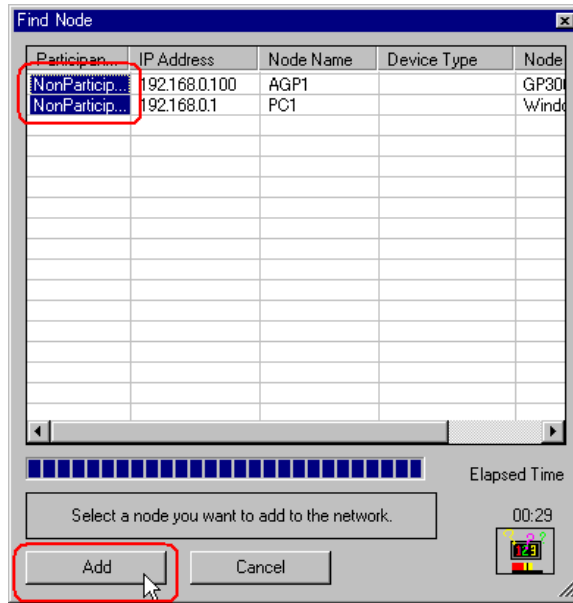


Clicking the [Yes] button activates 'Pro-Server EX' and starts searching entry nodes. Clicking the [No] button stops the node search.

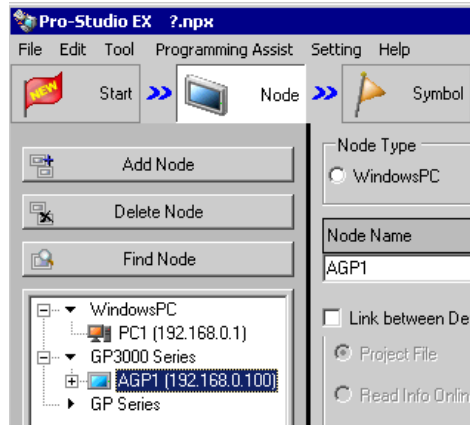
3 Click the [OK] button after checking the message.



- 4 Select [Non-entry] on the "Search Node" screen, and then click the [Entry] button.

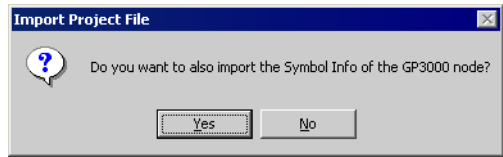


The selected non-entry node is registered as an entry node and indicated in the node list with a temporary name.



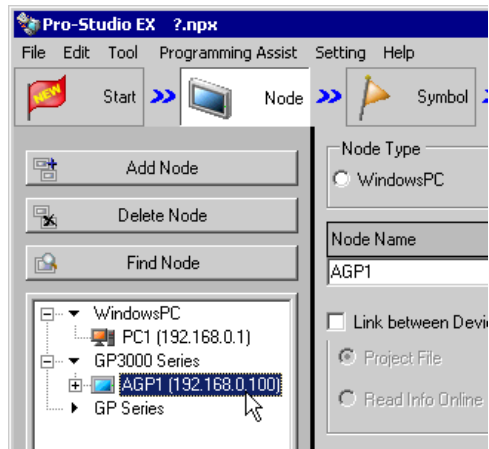
NOTE

- To select more than one node at one time, click the non-entry nodes with pressing the [Shift] key.
- When you attempt to register GP3000 Series (as long as a network project file has already been transferred to that node), the following screen appears.

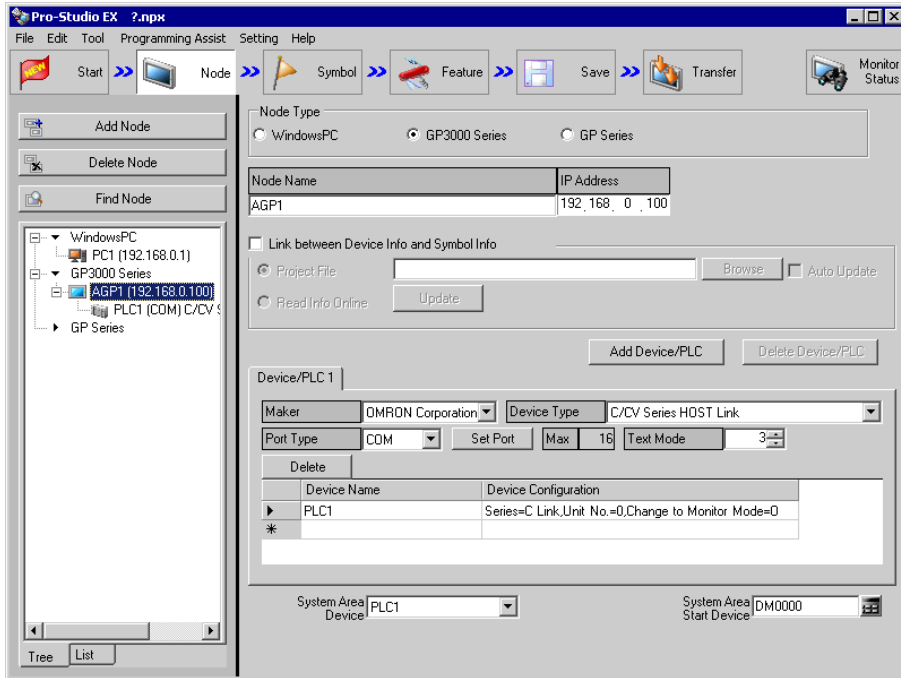


To import the symbol data of the network project file simultaneously, click the [Yes] button. If you wish not, click the [No] button.

5 Click a node name in the node list.



The details of the selected entry node are displayed on the right of the screen.



6 Set the items related to Device/PLC.

Refer to "29.1.1 Registration of Entry Nodes" for more details about the setting items.

NOTE • To change the node name, move the cursor to the text box of [Node Name] and enter a new name.

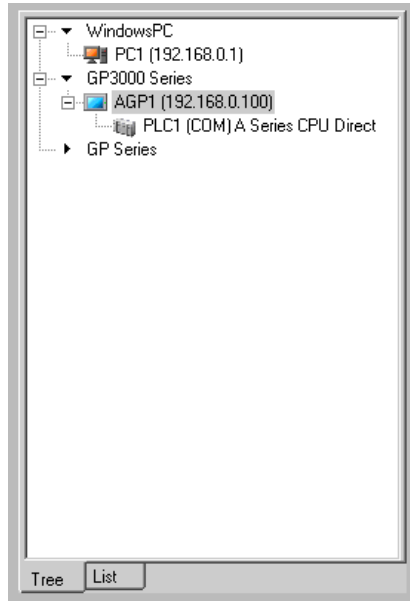
7 Click the [Register] button.



The entry node is now registered with the set contents.

- NOTE**

 - There are 2 types of display formats of a node list: "Tree format" and "List format". (Normally, nodes are displayed in a tree format.)
 In a tree format, the top layer shows a node type ("WindowsPC", "GP3000 Series" or "GP Series") and the lower layers indicate a node name and a Device/PLC name respectively.
 In a list format, node names and IP addresses are indicated in order of "WindowsPC", "GP3000 Series" and then "GP Series".



Tree format



List format

- You can change the display format by clicking the tab at the bottom of the node list.
-

29.2.2 Countermeasure Against Unrecognized Nodes

When no entry node is recognized by the search function, please check the following items.

(1) Cable and LAN hub

Check if the Ethernet cable is not disconnected.

(2) Network setting on the PC and GP side

Check if the IP address and subnet mask are specified properly.

- Confirmation of GP setting

☞ "2.4 Setting GP Network"

- Confirmation of PC setting

☞ "2.3 Setting PC Network"

NOTE

- You can check the setting of the IP address and subnet mask by the following method.

(1) From the [Start] button in Windows, select [All Programs (P)] - [Accessory] - [Command Prompt].

(2) Enter "ipconfig" on the command prompt screen.

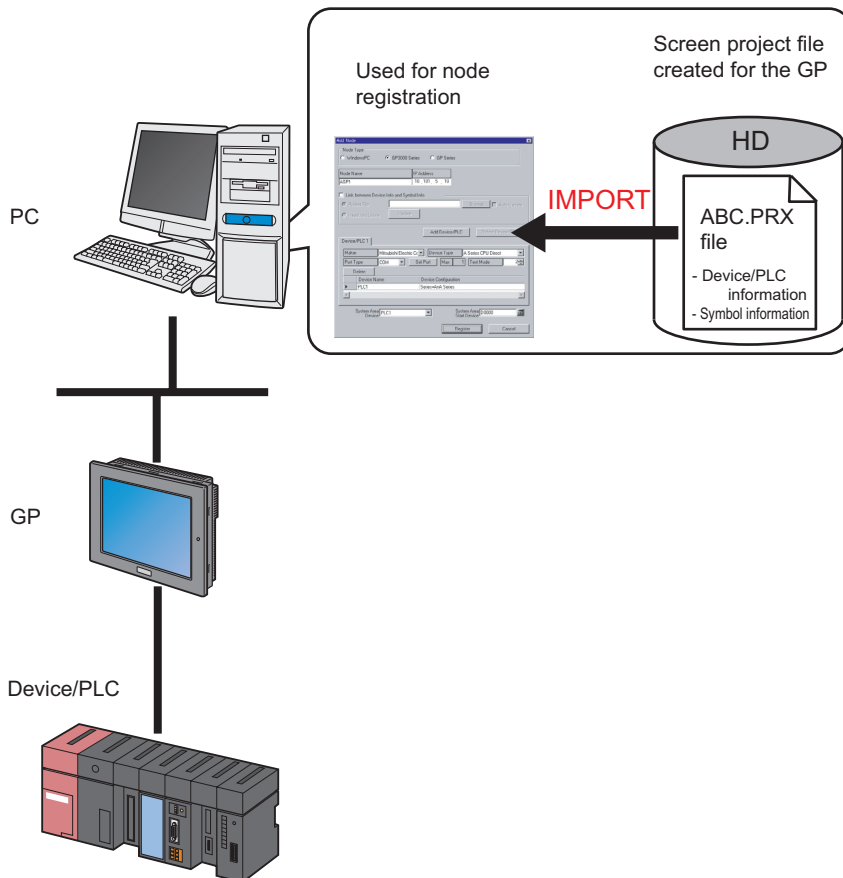
(3) The following screen appears, displaying [IP Address] and [Subnet Mask].

```
Connection-specific DNS Suffix . :  
IP Address. . . . . : 192.168.0.1  
Subnet Mask . . . . . : 255.255.255.0  
Default Gateway . . . . . :
```


29.3 Getting Data from a Screen Project File (PRX)

This feature allows you to obtain (import) the Device/PLC data and symbol data from a screen project file (*.PRX) made by a screen creation application like 'GP-Pro EX'.

By utilizing a screen project file made by a screen creation application, it is possible to register the accurate data of entry nodes for a short time.

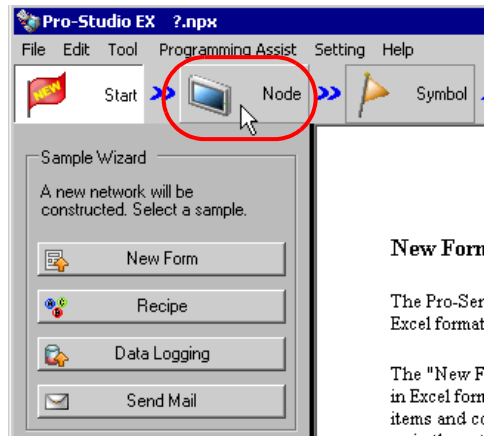


NOTE

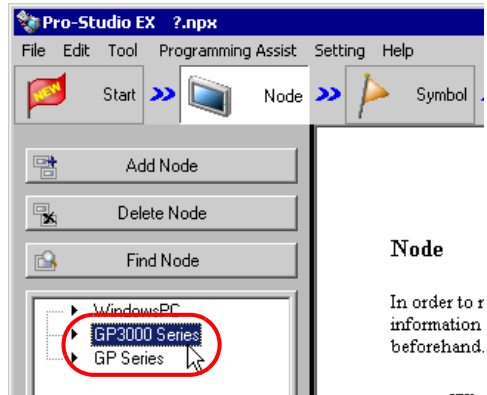
- The data that can be imported from a screen project file is that of Device/PLC and of symbols. Import of data saves the effort of inputting the same data to 'Pro-Studio EX'. You can also import data from a screen project file (*.PRW) made by the old version of the screen creation application as well.
- When you import a screen project file of 'GP-Pro EX' or 'GP-PRO/PBIII for Windows', the data type of word symbol is "Unknown". Please set the data type on 'Pro-Studio EX' again.
- When specifying "Unknown" one more time, you cannot set the bit type.

This section describes the setting required for importing the data of a screen project file (PRX) already saved in the PC.

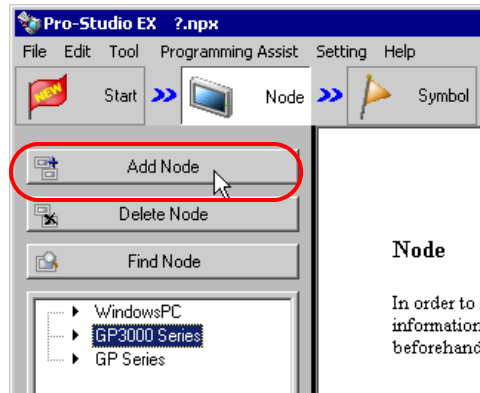
- 1 Click the [Node] icon on the status bar.



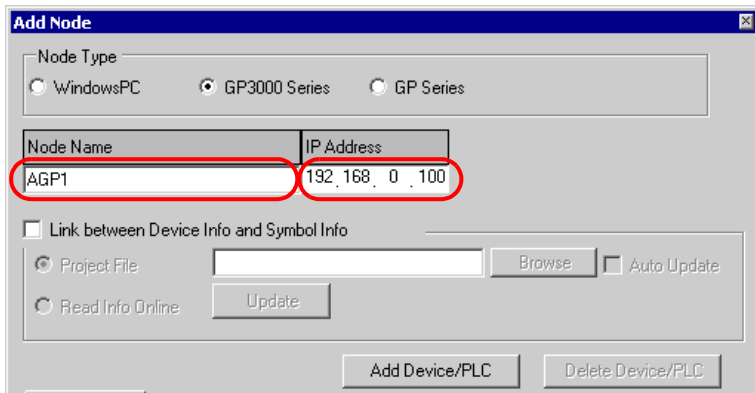
- 2 Select a node type from the tree display on the left of the screen: 'GP3000 Series' or 'GP Series'.



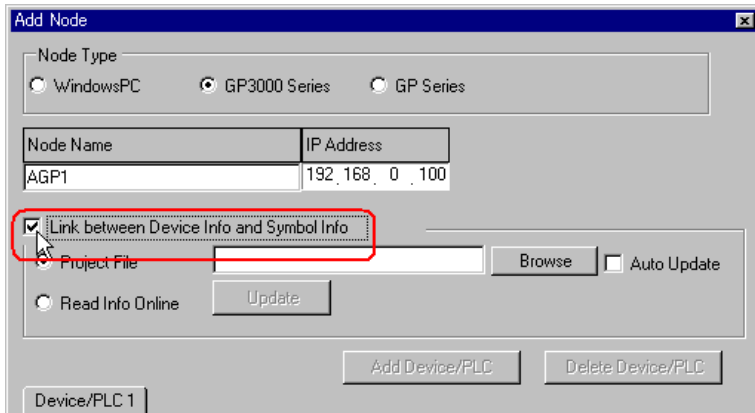
3 Click the [Add Node] button.



4 Enter [Node Name] and [IP Address]. (Enter [Subnet Mask] and [Gateway] as well in the GP Series case, if required.)

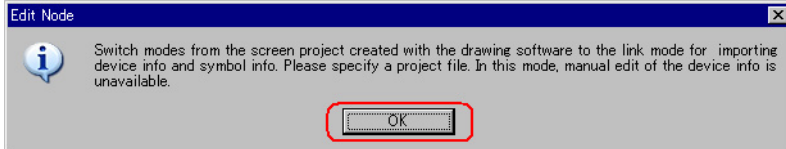


5 Check [Link to Device Data and Symbol Data].



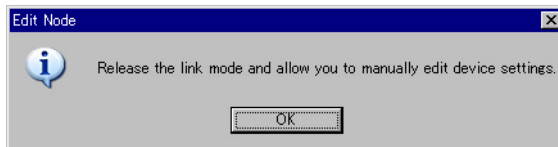
- NOTE**
- When [Auto Update] is checked, the screen project file that has been imported is automatically updated if there is any change to it.
- "29.5 Setting Guide"

The confirmation screen for data import appears. Click the [OK] button.

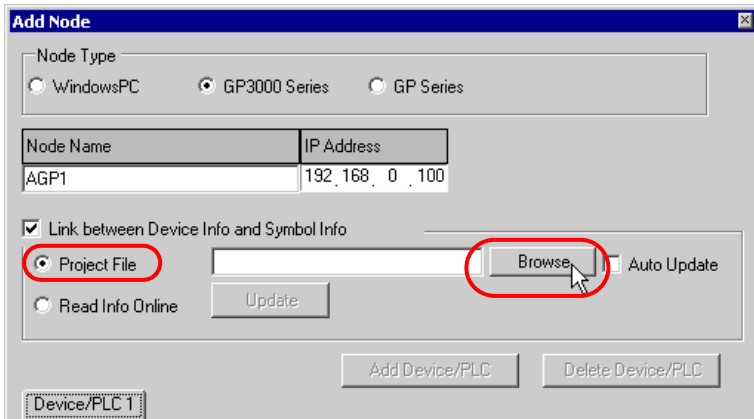


The mode is switched to the link mode that allows the data import.

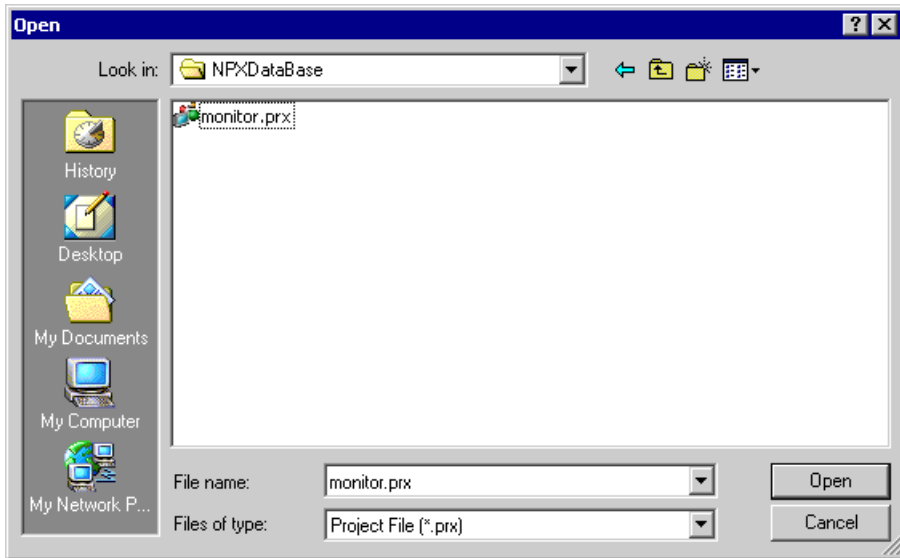
- NOTE**
- When [Link to Device Data and Symbol Data] is unchecked, the confirmation screen of link-mode cancellation appears.
- Click the [OK] button to cancel the link mode.



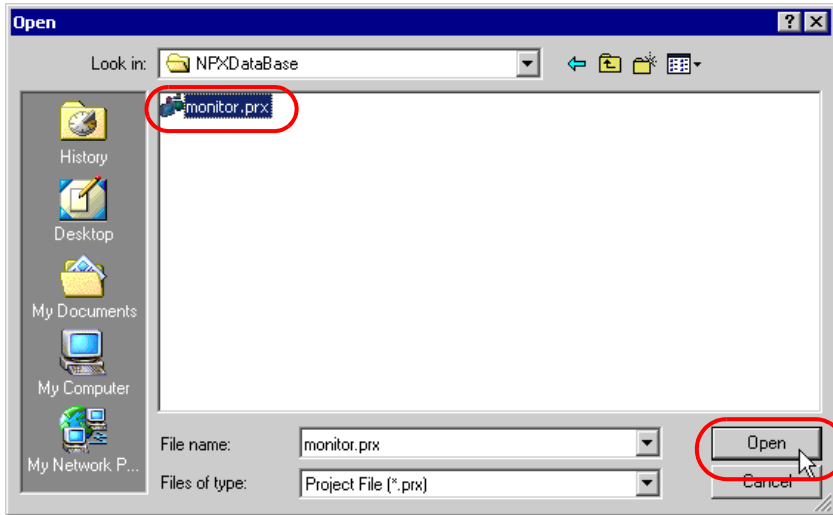
6 Select [Project File] and click the [More] button.



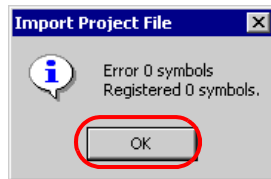
The "Open File" dialog box appears.



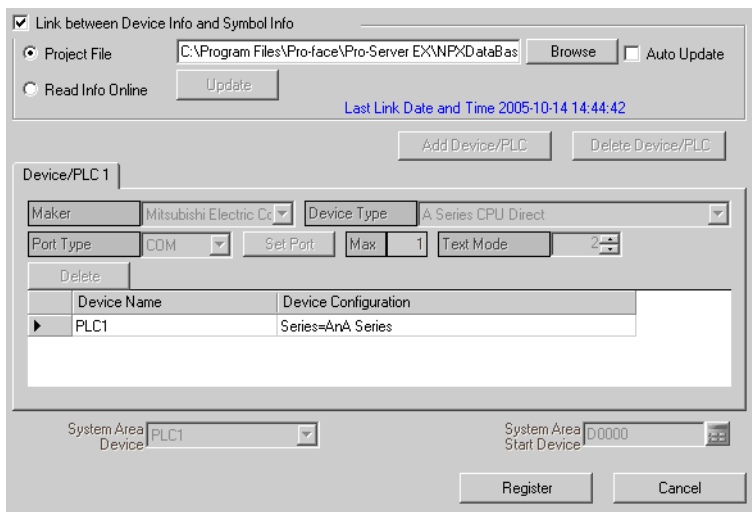
7 Select your target screen project file (*.prx) and click the [Open] button.



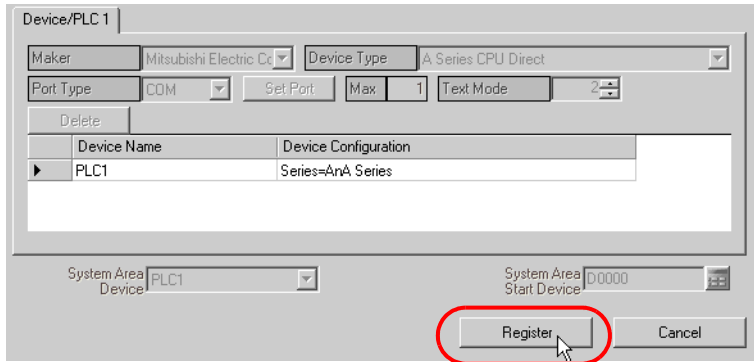
The [Import Project File] screen appears. Click the [OK] button.



The Device/PLC data set in the screen project file is displayed in each item in the [Device/PLC] tab.



8 Click the [Register] button.

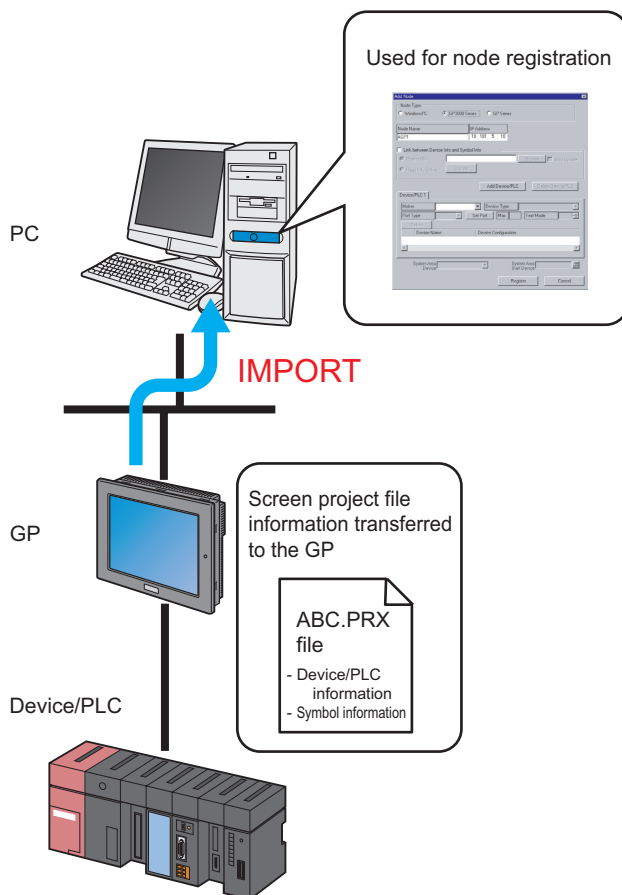


The entry node is now registered with the set contents.

29.4 Getting Data from the Screen Project File (PRX) Transferred to GP

You can obtain (import) via the network the Device/PLC data and symbol data from the screen project file (*.PRX) transferred to the GP.

By utilizing a screen project file made by a screen creation application, it is possible to register the accurate data of entry nodes for a short time.

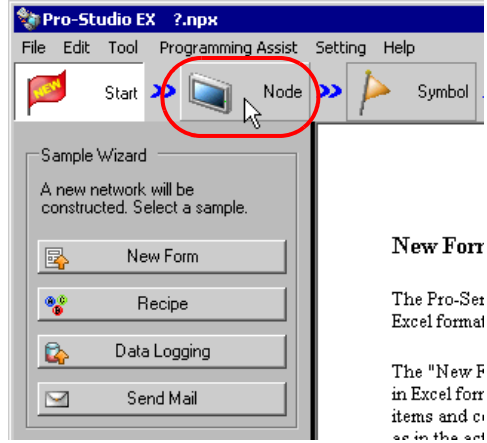


NOTE

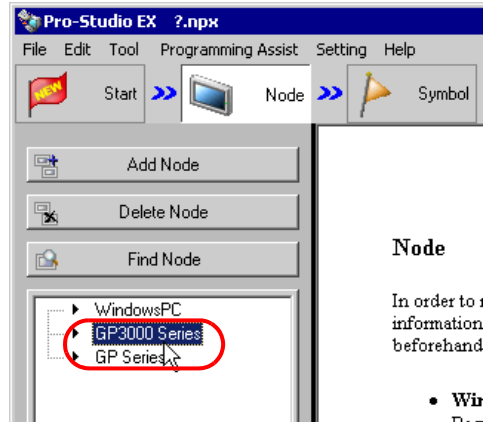
- The data that can be imported from a screen project file in the GP is that of Device/PLC and of symbols. Import of data saves the effort of inputting the same data to 'Pro-Studio EX'. However, this function is available only for GP3000 Series.
- When you import a screen project file of 'GP-Pro EX' or 'GP-PRO/PBIII for Windows', the data type of word symbol is "Unknown". Please set the data type on 'Pro-Studio EX' again.
- When specifying "Unknown" one more time, you cannot set the bit type.

This section describes the setting required for importing the data of a screen project file (PRX) from each GP on the network.

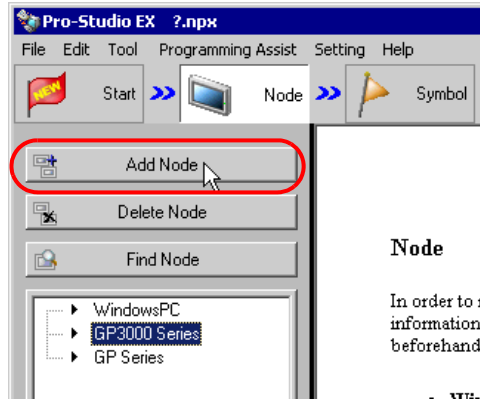
- 1 Click the [Node] icon on the status bar.



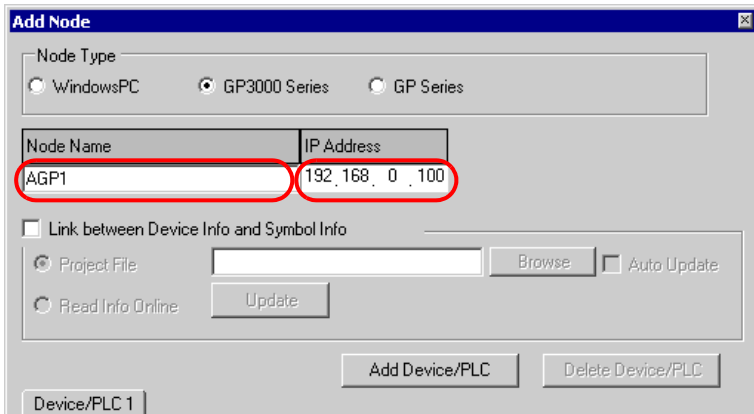
- 2 Select 'GP3000 Series' from the tree display on the left of the screen.



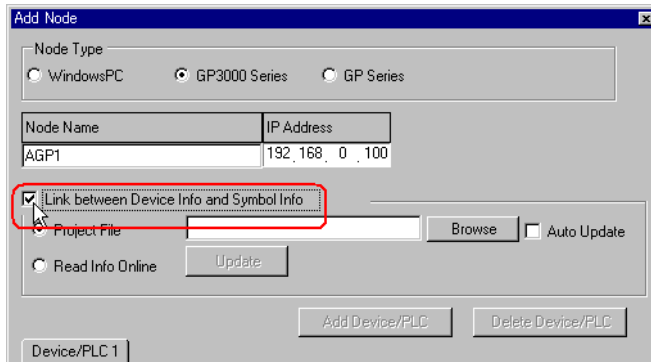
3 Click the [Add Node] button.



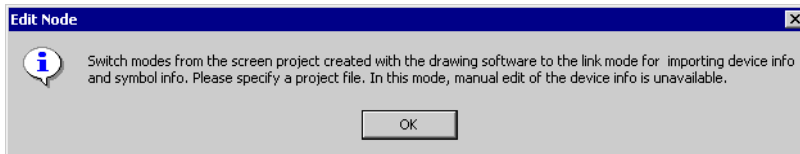
4 Enter [Node Name] and [IP Address]. (Enter [Subnet Mask] and [Gateway] as well in the GP Series case, if required.)



5 Check [Link to Device Data and Symbol Data].



The confirmation screen for data import appears. Click the [OK] button.

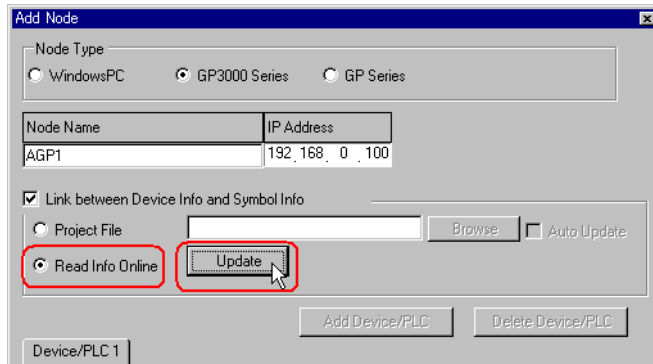


The mode is switched to the link mode that allows the data import.

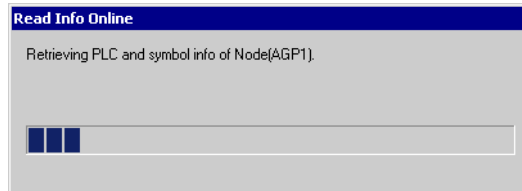
-
- NOTE**
- When [Link to Device Data and Symbol Data] is unchecked, the confirmation screen of link-mode cancellation appears.
Click the [OK] button to cancel the link mode.



6 Select [Online Data Read] and click the [Update] button.



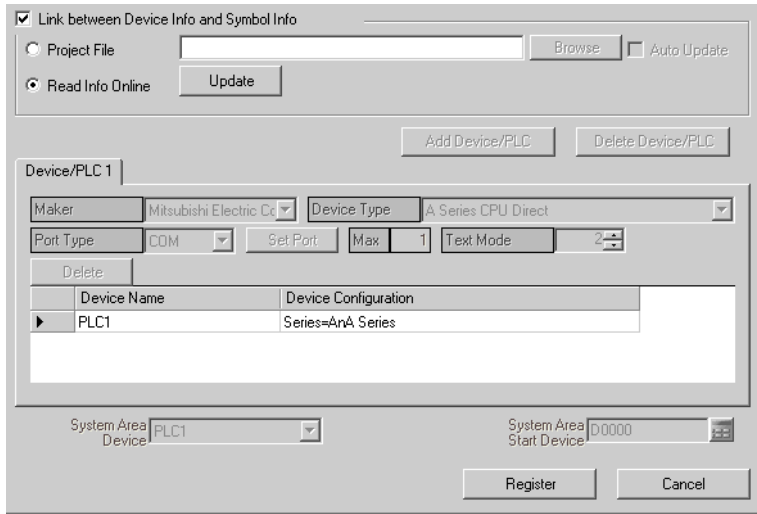
The "Online Data Read" dialog box appears and starts communication with the GP whose IP address you entered in Step 4. Online read is carried out without GP3000 switching to offline mode.



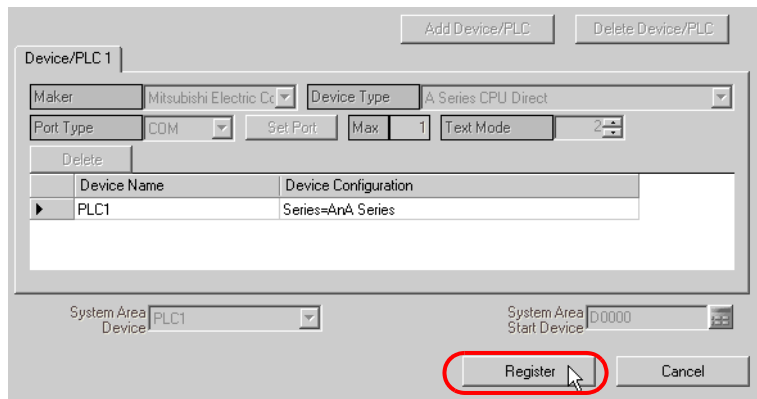
NOTE

- If "Transfer password" is set for GP3000 Series, the "Transfer password entry" screen appears. Enter the password and click the [OK] button.

7 When the communication is completed, the Device/PLC data set in the screen project file is displayed in each item in the [Device/PLC] tab.



8 Click the [Register] button.



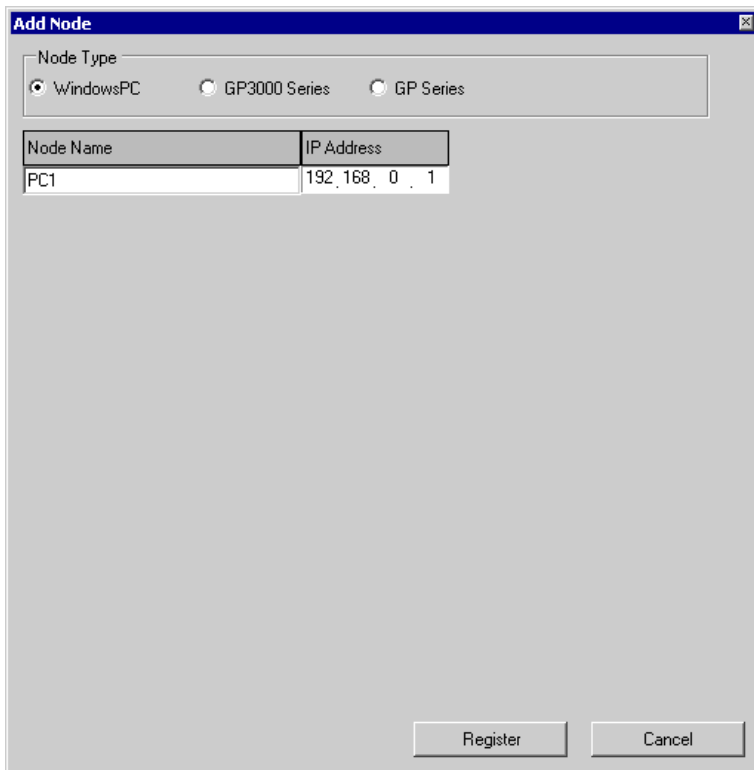
The entry node is now registered with the set contents.

29.5 Setting Guide

29.5.1 WindowsPC Node

This section explains the settings on the screen displayed on the conditions below:

- 1) When you select "WindowsPC" from the node list and click the [Add Node]; or
- 2) When you click a node name from the node list.



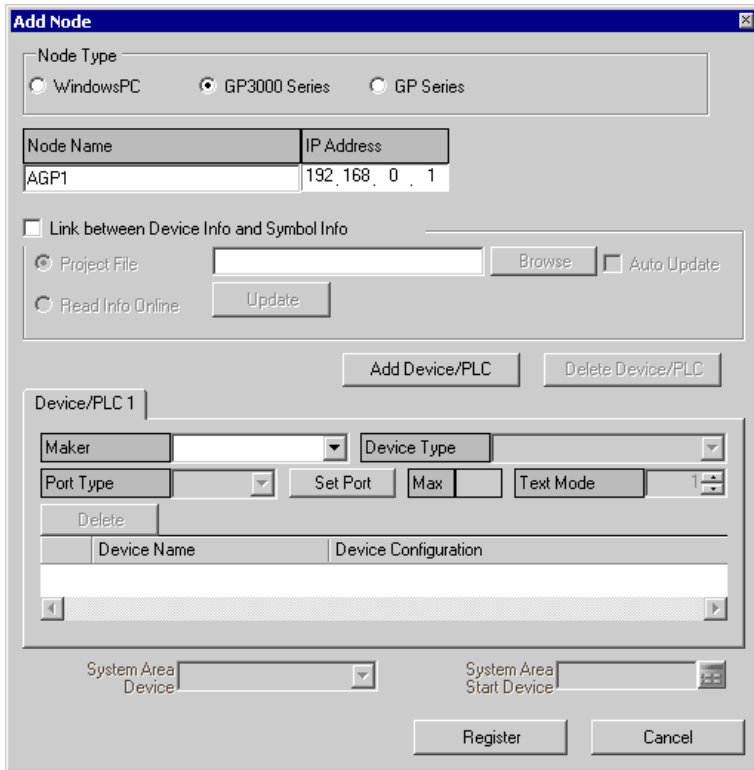
Setting item	Setting content
Node Type	<p>"WindowsPC" is selected.</p> <p>NOTE</p> <ul style="list-style-type: none"> When the node type is changed, the following dialog box appears. <div data-bbox="647 1456 980 1603" style="text-align: center;"> </div> <p>Clicking the [Yes] button deletes the set data of the Device/PLC and of symbols.</p>

Setting item	Setting content
Node Name	Enter the node name to be registered. Example) PC_1 NOTE <ul style="list-style-type: none">• Restrictions on a node name are as follows:<ul style="list-style-type: none">• Must be entered at maximum 32 Unicode characters.• Cannot begin with a number.• Is distinguished between uppercase and lowercase letters, hiragana and katakana.
IP Address	Enter the IP address of the entry node.


29.5.2 GP3000 Series Node

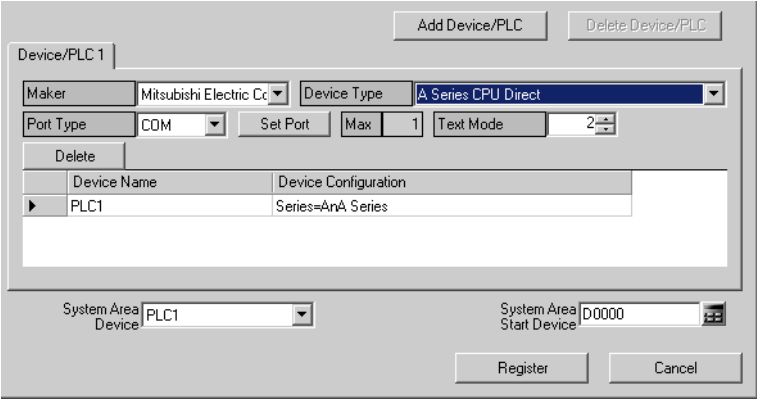
This section explains the settings on the screen displayed on the conditions below:



- 1) When you select "GP3000 Series" from the node list and click the [Add Node]; or
- 2) When you click a node name from the node list.



Setting item	Setting content
Node Type	<p>"GP3000 Series" is selected.</p> <p>NOTE</p> <ul style="list-style-type: none"> When the node type is changed, the following dialog box appears. <div data-bbox="651 1367 985 1514" style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <p style="text-align: center; margin: 0;">Change Node Type</p> <p style="text-align: center; margin: 0;">? Change the node type. Is that OK?</p> <p style="text-align: center; margin: 0;"> <input type="button" value="はい(Y)"/> <input type="button" value="いいえ(N)"/> </p> </div> <p>Clicking the [Yes] button deletes the set data of the Device/PLC and of symbols.</p>

Setting item	Setting content
Node Name	Enter the node name to be registered. Example) AGP_1 <div style="border: 1px solid black; padding: 2px; display: inline-block; margin: 5px 0;">NOTE</div> <ul style="list-style-type: none"> • Restrictions on a node name are as follows: <ul style="list-style-type: none"> • Must be entered at maximum 32 Unicode characters. • Cannot begin with a number. • Is distinguished between uppercase and lowercase letters, hiragana and katakana.
IP Address	Enter the IP address of the entry node.
Link between Device Info and Symbol Info	Import the Device/PLC data or symbol data from a screen project file (*.PRX). <div style="border: 1px solid black; padding: 2px; display: inline-block; margin: 5px 0;">NOTE</div> <ul style="list-style-type: none"> • Import of data saves the effort of inputting the same data to 'Pro-Studio EX'.
Project File	Select a screen project file in a folder on the PC.
Browse	The "Open File" screen appears. Select the screen project file you wish to use on this screen.
Auto Update	The screen project file that has been imported is automatically updated if there is any change to it. The following dialog box appears to indicate updating occurrence, if any. <div style="text-align: center; margin: 10px 0;">  </div> Click the [Yes] button when you want to import the updated data. The following messages also appear indicating the link status. <ul style="list-style-type: none"> • When Auto Update has been successful: "The link has been updated. The latest link date: yyyy/mm/dd hh:mm:ss" • When a link error has occurred: "Failed to update. The latest link date: yyyy/mm/dd hh:mm:ss" • When [Cancel] has been selected in the Update dialog box: "Canceled to update. The latest link date: yyyy/mm/dd hh:mm:ss"
Read Info Online	Select this to import the Device/PLC data or symbol data in the screen project file that has been transferred online from GP3000 Series which is registered as a entry node.
Update	Read the data of a screen project file online.

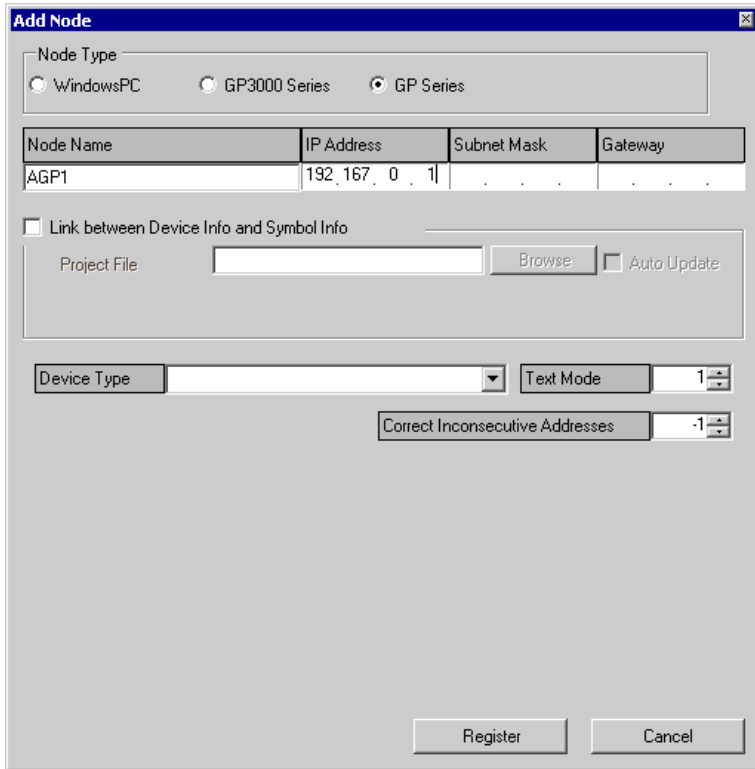
Setting item	Setting content
<p>Add Device/PLC</p>	<p>Add Device/PLCs. You can add Device/PLCs up to 4 drivers. Added Device/PLCs are displayed in each tab.</p> 
<p>Delete Device/PLC</p>	<p>Delete the Device/PLC currently displayed. The message "Delete xxx (Device/PLC name). Continue?" appears. Click the [Yes] button to delete it.</p>
<p>Maker</p>	<p>Select the name of the manufacturer of Device/PLC.</p>
<p>Device Type</p>	<p>Select the type of Device/PLC.</p>
<p>Port Type</p>	<p>Select the type of port that connects GP3000 Series and Device/PLC.</p>
<p>Set Port</p>	<p>Set the details of communication. For further information, please refer to "Communication Setup" for the corresponding manufacturer in 'GP-Pro EX Device/PLC Connection Manual'.</p>
<p>Max.</p>	<p>Displays the maximum number of Device/PLCs that can be connected.</p> <p>NOTE</p> <ul style="list-style-type: none"> No change can be made.
<p>Text Mode</p>	<p>Specify the text mode of Device/PLC. Refer to "■Text Mode" for more details.</p>
<p>Device Name</p>	<p>Enter the name of Device/PLC which is connected. Restrictions on its name are as follows:</p> <ul style="list-style-type: none"> Must be entered at maximum 32 Unicode characters. [Cannot begin with a number. <p>NOTE</p> <ul style="list-style-type: none"> As for the Device/PLC data, please confirm the contents set on 'GP-Pro EX', and specify the set items to meet such contents. If there is inconsistency in the set contents like the device name, communication is not established.
<p>Device Configuration</p>	<p>Set up the Device/PLC.</p> <p>NOTE</p> <ul style="list-style-type: none"> The set contents may vary according to the Device/PLC. For further information, please refer to "Communication Setup" for the corresponding manufacturer in 'GP-Pro EX Device/PLC Connection Manual'.

Setting item	Setting content
System Area Device	<p>Select the Device/PLC where the system area is assigned.</p> <p>NOTE</p> <ul style="list-style-type: none">By default, displays the device name set in [System Area Device] on the "System Area Setting" screen (accessible from [Main Unit Setting] on "System setup window" in 'GP-Pro EX'). <p> 'GP-Pro EX Reference Manual'</p>
System Area Start Device	<p>Enter the device address where system area is assigned. Enter the address directly or click the Calculator icon to enter it on the device address input screen.</p> <p>NOTE</p> <ul style="list-style-type: none">By default, displays the device set in [System Data Area] on the "System Area Setting" screen (accessible from [Main Unit Setting] on "System setup window" in 'GP-Pro EX'). <p> 'GP-Pro EX Reference Manual'</p>
Register	<p>An entry node is registered with the set contents.</p>


29.5.3 GP Series Node

This section explains the settings on the screen displayed on the conditions below:

- 1) When you select "GP Series" from the node list and click the [Add Node]; or
- 2) When you click a node name from the node list.



Setting item	Setting content
Node Type	<p>"GP Series" is selected.</p> <p>NOTE</p> <ul style="list-style-type: none"> When the node type is changed, the following dialog box appears. <div data-bbox="655 1367 989 1514" style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <p style="text-align: center; margin: 0;">Change Node Type</p> <p style="text-align: center; margin: 0;">? Change the node type. Is that OK?</p> <p style="text-align: center; margin: 0;">はい (Yes) いいえ (No)</p> </div> <p>Clicking the [Yes] button deletes the set data of the Device/PLC and of symbols.</p>

Setting item	Setting content
Node Name	<p>Enter the node name to be registered. Example) GP_1</p> <p>NOTE</p> <ul style="list-style-type: none"> Restrictions on a node name are as follows: <ul style="list-style-type: none"> Must be entered at maximum 32 Unicode characters. Cannot begin with a number. Is distinguished between uppercase and lowercase letters, hiragana and katakana.
IP Address	Enter the IP address of the entry node.
Subnet Mask	Enter the subnet mask value of the network on which the node is connected.
Gateway	Enter the IP address of the gateway when accessing the node via the gateway.
Link between Device Info and Symbol Info	<p>Import the Device/PLC data or symbol data from a screen project file (*.PRX).</p> <p>NOTE</p> <ul style="list-style-type: none"> Import of data saves the effort of inputting the same data to Pro-Studio EX'. When Auto Update is not checked, a screen project file (*.PRX) needs to be updated manually after editing. Specify the edited file and click the [More] button to import the data again.
Project File	Select a screen project file in a folder on the PC.
Browse	The "Open File" screen appears. Select the screen project file you wish to use on this screen.
Auto Update	<p>The screen project file that has been imported is automatically updated if there is any change to it. The following dialog box appears to indicate updating occurrence, if any.</p>  <p>Click the [Yes] button when you want to import the updated data.</p> <p>The following messages also appear indicating the link status.</p> <ul style="list-style-type: none"> When Auto Update has been successful: "The link has been updated. The latest link date: yyyy/mm/dd hh:mm:ss" When a link error has occurred: "Failed to update. The latest link date: yyyy/mm/dd hh:mm:ss" When [Cancel] has been selected in the Update dialog box: "Canceled to update. The latest link date: yyyy/mm/dd hh:mm:ss"
Device Type	Select the type of Device/PLC.
Text Mode	Specify the text mode of Device/PLC. Refer to "■Text Mode" for more details.

Setting item	Setting content
Correct Inconsecutive Addresses	<p>Specify the data number of protocol communication to be optimized.</p> <p>In the case of "-1", the maximum data number supported by the protocol is adopted and optimization is executed.</p> <p>In the case of "0", optimization is not performed. Address spaces having 1-address space between each other are regarded as non-sequential. Please use it under the circumstance that holds a device which causes trouble when accessed.</p> <p>NOTE</p> <ul style="list-style-type: none"> • Enter the number in the range of -1 to 255.
Register	An entry node is registered with the set contents.

■ Text Mode

The order of the characters in a string can vary according to the manufacturer of Device/PLC.

Please check the Device/PLC you are using, and select the storage order of the characters in a string from the following table to set the text mode.

- (I) Device storage order of data
- (II) Byte LH/HL storage order in Word
- (III) Word LH/HL storage order in Double-Word

NOTE

- If the text mode of the GP display does not conform to that of 'Pro-Server EX', the read strings consequently differ and cannot be handled as character strings.
Please set the text mode of the GP in the character string data mode on the "Device/PLC Setting" screen (accessible from [System Setup Window] in 'GP-Pro EX').
-

List of Text Mode

(I) Device storage order of data	(II) Byte LH/HL storage order in Word	(III) Word LH/HL storage order in Double-Word	Text mode
Store from the front data	LH	LH	4
		HL	2
	HL	LH	5
		HL	1
Store from the end data	LH	LH	6
		HL	7
	HL	LH	8
		HL	3

Example) When the character string is "ABCDEFGHJIJ", the following patterns are available.

Character string A B C D E F G H I J
 └┘ └┘ └┘ └┘ └┘

- AB CD EF GH IJ Text mode 4
- BA DC FE HG JI Text mode 2
- CD AB GH EF IJ Text mode 5
- DC BA HG FE JI Text mode 1

- IJ GH EF CD AB Text mode 6
- JI HG FE DC BA Text mode 7
- GH IJ CD EF AB Text mode 8
- HG JI DC FE BA Text mode 3

