12 Writing Excel Data in Device/PLC

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12.1 Try to Write Recipe Data in Device/PLC

[Action Example]

Detect the rising of the trigger device (bit device: "M01") of Device/PLC and write recipe sheet data created in Excel into 5 devices (word device: address "D50" to "D54") of Device/PLC.

(Example) Writing the data of record No. "1" of a recipe sheet.



This section describes the setting procedures for executing the above action (ACTION) as an example.

[Setting Procedure]

1	Creating a Recipe Sheet (page12-4)	This step creates a recipe sheet in 'Microsoft Excel' to write in Device/PLC.
2	Starting 'Pro-Studio EX' (page12-5)	This step starts 'Pro-Studio EX'.
	+	
3	Registering Entry Nodes (page12-5)	This step registers the PC and the display units as entry nodes.
4	Registering Symbols (page12-6)	This step registers as a symbol the device of Device/ PLC to write data in.
5	Specifying a Recipe Sheet and its Output File (page12-8)	This step sets the following items:Specify a recipe sheetSpecify an output file
6	Setting the Contents of a Recipe Sheet (page12-11)	This step sets the following items:Set a writing deviceSet the area to read out
7	Setting ACTION Node/Process Completion Notification (page12-24)	This step sets the name of an ACTION node and the alert setting whether it should be tuned on or off when the ACTION is completed.
8	Verifying Setting Result (page12-26)t	This step verifies setting results on the setting content list screen.
9	Saving a Network Project File (page12-28)	This step saves the current settings as a network project file and reloads.
	+	
10	Transferring a Network Project File (page12- 29)	This step transfers a saved network project file to the display unit.
	+	
11	Executing ACTION (page12-29)	This step verifies that recipe data is written in the specified area of Device/PLC when the preset trigger condition has become effective.

12.1.1 Creating a Recipe Sheet

This step creates a recipe sheet where data to write in Device/PLC exists.

1 Start 'Microsoft Excel' and create the recipe sheet below in Sheet 1.

[Creation Example]



Leave both spaces for "Symbol Name" (Cells B1 to F1) and those for "Record No." (Cells A2 to A4) blank for these will be automatically allotted and filled in after completing the setting.

• You can prepare multiple recipe data on Excel. Allot a record No. for each recipe to specify data to write in Device/PLC. For details, refer to "12.1.6 Setting the Contents of a Recipe Sheet" mentioned later.

2 Save the recipe sheet with the file name "recipe.xls" on PC desktop after creating.

NOTE

You can create a recipe sheet in the direction (horizontal) as shown below.

"No. of Records" insert field



12.1.2 Starting 'Pro-Studio EX'

This step starts 'Pro-Studio EX'.

Refer to "3 Trial of Pro-Server EX" for details about starting method.

12.1.3 Registering Entry Nodes

This step registers the PC and the display unit connected with network as nodes. Refer to "31 Node Registration" for details about entry nodes.



Node Name	:PC1
IP Address	:192.168.0.1



Node Name	:AGP1			
IP Address	:192.168.0.100			
Device/PLC Information				



Entry node	Setting item	Setting example	
PC	Node Name	PC1	
	IP Address	192.168.0.1	
	Туре	GP3000 series	
Display Unit	Node Name	AGP1	
	IP Address	192.168.0.100	

12.1.4 Registering Symbols

This step registers as a symbol the device address of Device/PLC to which device data is written. Refer to "32 Symbol Registration" for details about symbols.





• Trigger (Trigger Condition)

Setting item	Setting content
Symbol Name	Start writing
Data Type	Bit
Device address for symbol registration	"01" of Device/PLC (PLC1)
No. of Devices	1

Record No. storage

Setting item	Setting content
Symbol Name	Record No. Storage
Data Type	16Bit (Unsigned)
Device address for symbol registration	"10" of Device/PLC (PLC1)
No. of Devices	1

• Writing Device

Setting item	Setting content
Symbol Name	PLC1 data
Data Type	16Bit (Signed)
Device address for symbol registration	"D50" to "D54" of Device/PLC (PLC1)
No. of Devices	5

12.1.5 Specifying a Recipe Sheet and its Output File

This step specifies the pre-created recipe sheet and its output file. Refer to "12.3 Setting Guide" for more details.

Ex.

Setting item		Setting content
Specify a Template	Template File	C:\Documents and Settings\Administrator\Desktop\recipe.xls
	Folder Name	C:\Documents and Settings\Administrator\Desktop
Output File	File Name	Recipe write.xls
	Start with the output file displayed	Not checked
	Do not save the output file when ACTION runs.	Not checked

1 Click the [Feature] icon on the toolbar.

🎕 Pro-Studio EX 🛛 ?	.npx		
File Edit Tool Pro	gramming Assist Sett	ng Help	
💋 Start >	Node >	Symbol Symbol	Save 2
Symbol		Node Name AGP1	Device Name
Group	Ungroup	Sheet Name Sheet3	Setitasa glob
Insert	Delete		

2 Select [ACTION] from the tree display on the left of the screen, then click the [Add] button.

物 Pro-Studio EX	test.npx			
File Edit Tool P	rogramming As:	ist Se	tting He	elp
💋 Start 🔉	• 🛐 N	ode 🔉	>	Symbol
Add	Import			
Edit	Delete		ž	ACTION
ACTION Trigger Con Data Transi Device Cac	fer		ι ι Ι	n addition Ising appli- Ising Acce n the Pro-S eferred to «

3 Click the [ACTION Type] list button, and select "Create form using Excel".

Then, enter the name of ACTION to set in the [ACTION Name] field. In this example, enter "Recipe Write".

NOTE	• [ACTION Name] can be an arbitrary name.	

Set ACTION Name,	/Parameter		×
Add a new ACTION Specify an ACTION	l. I name, and set its parame	ter.	
ACTION Type	Create form using Excel.		•
ACTION Name	Create form using Excel. Writes Data to CSV file. Upload of GP JPEG Data. Upload of GP Log Data. Writes Data to E-Mail. Upload to the database. Download from the databa	ase.	
	0		Constant of
		Next	Cancel

4 Click the [Click here to set the ACTION parameter] button.

ACTION Type Create	form using Excel.	•
🗖 Disp	lay the Actions of the old version of Pro-Server	
ACTION Name Recipe	Write	
	Click here to set the ACTION parameter.	\bigcirc

- **5** Make settings regarding an Excel template and its output file.
 - 1) Click the [Reference] button of [Template File] to set the template file "templete.xlt" which you created.

Template Designation Please specify the name of Excel template file that is the source of forms. When you use the wizard, the theme template file is copied to a file with this name. When you create a new template, please specify the file name.							
Template File	C:\Documents and Settings\Administrator\D	esktopitemplate.x	Reference				
	Edit Template						
Output File The template file stor	res setting info. The actual output result will be dis	played in the followin	g file.				
Folder Name	E:\Program Files\Pro-face\Pro-Server EX\Np	xDatabase	Reference				
File Name	Report_%Y%M%D.xls	Return to Defa	ult Settings				
Start from Displa	yed State						
Do not save the output file when ACTION runs. (Please use the Save or Save by Macro of Excel.)							
		ок	Cancel				

2) Click the [Reference] button of [Folder Name] and specify "Desktop" as a folder to save the output file.

Folder Name	tores setting info. The actual output result will be dis	
File Name	Report_%Y%M%D.xls	Return to Default Settings
	olayed State ne output file when ACTION runs. e Save or Save by Macro of Excel.)	
		OK Cancel

3) Set the file name "Recipe Write.xls" in the [File Name] field for the output file to set.

Output File			
I he template file s	tores setting info. The actual output result will be	e displayed in the followi	ing file.
Folder Name	C: Documents and Settings\Administrat	or'Desktop	Reference
File Name	RecipeWrite.xls	Return to Det	fault Settings
🔽 Start from Disp	played State		
	e output file when ACTION runs. e Save or Save by Macro of Excel.)		
	_	ок	Cancel

12.1.6 Setting the Contents of a Recipe Sheet

This step sets the contents of a recipe sheet for writing data to Device/PLC. The example below shows the setting of data write area (recipe area) of a recipe sheet. Refer to "12.3 Setting Guide" for more details.



Ex.

Setting item	Setting content
Entry Node	AGP1
Device Name	PLC1
Device Address/Symbol Group	PLC1 data
Add Device Address/ Symbol Name	Checked
Target Cell Range	A1 to F4
Data Direction	Specify the direction of record No.s as "Vertical".
Trigger Condition Name	Turn on write start bit
Trigger Condition	When "Start writing" (M01) is ON

1 Click the [Edit Template] button.

С	reate form using E	cel	
			Version 1.22
	 Template Designation)	
	When you use the	name of Excel template file that is the source of forms. wizard, the theme template file is copied to a file with this name. new template, please specify the file name.	
	Template File	C:/Documents and Settings/Administrator/Desktop/template.x	Reference
		Edit Template	

The recipe sheet appears.

- 2 Set a data write area.
 - 1) Click the [Recipe Area] icon on Excel.

M	🔣 Microsoft Excel - template.xlt											
	Eile Edit View Insert Format Tools Data Window Help ExcelAction(A)											
	□ 😅 🖬 🚑 📾 ඟ • 🍓 Σ 🖍 🛃 🛍 🕐 👻 Arial 🔹 10 🔹 Β Ζ 🖳 Ξ Ξ 🗄 • 💆 • 🤅											
	🗗 🔂 🔽	abi 🗖	• == ==	e 🔹 🗄	A 🖾 💈	<u> </u>						
1	6 8	XL 🥃 🗸	9 🗰 🖪	P 💣 🚊								
	01 0		=									
	A Recip	e Area	С	D	E	F	G	Н		J	K	-
1												
2		10	20	30	40	50						
3		60	70	80	90	100						
4		110	120	130	140	150						
5												
8	1											

```
NOTE
```

• Selecting "Recipe Area" from [Excel Action] of the menu displays the same screen.



2) Click the list button of [Node] and select "AGP1" as a data transfer destination node.

Becipe	_ 🗆 X
Action Settings Record No. Settings Trigger Condition Settings	
Device Settings	
Node ITrigger-Source Node Device Name	
Device Address/Symbol AGP1 Group (TriggerSource Node) No. of Devices	
Data Type 16Bit(Signed)	
Add Device Address/Symbol Name Note: When specifying inconcecutive memory data, please use a group symbol.	

3) Click the list button of [Device Name] and select "PLC1" as a data transfer destination device.

Recipe			_ 🗆
Action Settings	Record No. Se	tings Trigger Condition Settings	
Device S	ettings Node	AGP1 Vic	
Device A	Noae ddress/Symbol Group	I No. Devic	
	ata Type	16Bit(Signed)	
🗹 Add	Device Address		en specifying inconcecutive ata, please use a group

4) Click the list button of [Device Address/Symbol Group] and select "PLC1 data" as a symbol of the data to write in.

👋 Rea	ipe						<u> </u>
Actio	n Settings Record No. Se	ettings Trigger Condition Se	ettings				
	Device Settings Node	AGP1	•	Device Name	PLC1	•	
	Device Address/Symbol Group	a	•	- Local:She			
	Data Type	16Bit(Signed)		PLC1	rdNoStorage		
	Add Device Address	s/Symbol Name					

The device number "1" will be automatically entered in [No. of Devices], and "16Bit(Signed)" in [Data Type].

🐝 Recipe					_ 🗆 X
Action Settings Record No. S	ettings Trigger Condition Setting	gs			
Device Settings	AGP1		Device	PLC1	
Device Address/Symbol Group	PLC1data		Name No.of Devices		
Data Type	16Bit(Signed))		
Add Device Address	:/Symbol Name	me		pecifying inconcecutive please use a group	

5) Check [Add Device Address/Symbol Name].

Г	Device Settings					
	Node	AGP1	•	Device Name	PLC1	•
	Device Address/Symbol Group	PLC1data	•	No. of Devices	1	÷
	Data Type	16Bit(Signed)				
$\left(\right)$	Add Device Address	:/Symbol Name	me		pecifying incono please use a gro	

• After the procedure of "12.1.9 Saving a Network Project File" described later, open the template again, and open the recipe setting dialog box. After confirming that the "Add Device Address/ Symbol Name" checkbox has been checked, click the [OK] button. Then, the device address/ symbol name will be reflected in the template.

6) Click the cell range specify button of [Target Cell Range].

Layout Settings Target Cell Range	Sample An image of writing to a cell is shown below.
Data Direction	The arrow points in the direction of arranging recipe data.
No. of Records 1	D101 D102 D103 D104 1 25 25 25 25 2 50 20 20 10 3 20 20 30 30
Note, The layout of a group symbol is lixed.	4 10 10 10 70

7) Drag the mouse to specify the data write area (cells A1 to F4). Then click the [OK] button.

A	В	С	D	E	F	G	Н	I	J	K	
1 }											
2	10	20	30	40	50)						
2 3	60	70	80	90	100)						
4	110	120	130	140	150						
5			Specify R	ange			? ×				
6			Dia and and		_						
7			Please spe	ecify the rang	е.						
8											
9											
10											
11			\$A\$1:\$F	\$4							
12 13											
13					OK N		ancel				
14						<u>z </u>					
15											
16											
47											

8) Select "Vertical" of [Data Direction].

Target Cell \$4\$1:\$F\$4	Sample An image of writing to a cell is shown below. The arrow points in the direction of arranging recipe data.
No. of Records 3	D101 D102 D103 D104 1 25 25 25 25 2 50 20 20 10 3 20 20 30 30 4 10 10 10 70

NOTE

9) Click [Allot Record No. from 1 to Cell Range].

arget Cell \$4\$1:\$F\$4	Sample An image of writing to a cell is shown below.
ata Direction	The arrow points in the direction of arranging recipe data.
	D101 D102 D103 D104
No of Becords 3	1 25 25 25 25
No. of Records 🛛 📑	2 50 20 20 10
Note: The layout of a group symbol is fixed.	3 20 20 30 30
Hote. The layest of a group symbol is fixed.	4 10 10 10 70
	Allot Record No. from 1 to Cell Range

• Specify the recipe data to write in Device/PLC with record No.s. This example allots record No.s to the recipe data.

Record No.s and ruled lines are automatically added on the recipe sheet.

	A	В	С	D	E	F	G
1							
2	1	10	20	30	40	50	
3	2	60	70	80	90	100	
- 4	3	110	120	130	140	150	
5							
6							

3 Specify a record No.

Specify the recipe data by entering a record No. in the symbol "Record No. storage" from display unit or Device/ PLC.

(Example) In case of storing device data "1" in the device "Record No. storage".





1) Click the [Record No. Settings] tab.

🖗 Recipe			_ 🗆 X
Action Settings Record No. Settings Digger Condition Settings			
Device Settings			
Node AGP1	Device Name	PLC1	
Device Address/Symbol I PLC1data	No. of Devices	5	

2) Click "Specify by device/symbol values" in [Record No. at Write Recipe].

📽 Recipe 📃	
Action Settings Record No. Settings Trigger Condition Settings	
The recipe has two or more records. Please configure the specification method of them.	
Becord No. at Write Recipe	
Node (Trigger-Source Node Device Name	
Device Data Type 16Bit(Signed)	
No. of Characters	
O Specify by cell value	
\$4\$1	
100:200 300 400 From Cell to PLC	

• If you select [Specify by cell value], specify any cell on Excel. The number entered in the cell is recognized as the record No. Refer to "12.3 Setting Guide" for more details. 3) Click the list button of [Node] and select the node name "AGP1" which has the Device/PLC to store the record No.

8	Recipe					_ 🗆 ×		
	Action Settings	Record No. Setting	S Trigger Condition Setting	s				
	The recipe has two or more records. Please configure the specification method of them.							
	Record No. at Write Recipe							
	Specessory	ify by device/symbol	value					
	Node	ii.	ger-Source Node) 💌 🛛	Device Name	•			
	Device Address	/Symbol		Data Type	16Bit(Signed)			
				No. of Chara	acters 1 🛨			

4) Click the list button of [Device Name] and select the Device/PLC "PLC1" to store the record No.

8	Recipe				_ 🗆 🗙
	Action Settings	Record No. Settings	Trigger Condition Settings		
	The recip	e has two or more rec	ords. Please configure the	specification method of them.	
	Record No. a	at Write Recipe			
	Spece	ify by device/symbol v	alue		
	Node	AGF	여 💽	Device #INTERNAL	
	Device Address	/Symbol 🔳	v	Data Type	
				No. of Characters	

5) Click the list button of [Device Address/Symbol] and select the symbol name "Record NoStorage" of the device to store the record No.

👯 Recipe	
Action Settings Record No. Settings Trigger Condition Settings	-
The recipe has two or more records. Please configure the specification method of them.	
Record No. at Write Recipe	
Specify by device/symbol value	
Node AGP1 Device PLC1 Name	
Device Address/Symbol	
C Specify by cell value	
\$4\$1	

The device data type "16Bit(Unsigned)" will be automatically entered in [Data Type].

- 4 Set trigger conditions.
 - 1) Click the [Trigger Condition Settings] tab.

8	Recipe							_ 🗆 X	
	Action Settings	Record No. Se	ttings Trigger Conc	dition Settings)				
The recipe has two or more records. Please configure the specification method of them.									
	Record No. at Write Recipe								
	Spece	cify by device/syr	mbol value						
	Node		AGP1	•	Device Name	PLC1	•		
	Device Address	:/Symbol	RecordNoStora	age 🔻	Data Type	16Bit(Signed)			

The "Trigger Condition Settings" screen will appear.

📽 Recipe	_ 🗆 🗙
Action Settings Record No. Settings Trigger Condition Settings	
Action Area No.	
When the specified trigger type (under-condition button) is satisfied, this area is executed. Please specify a trigger type.	
New Trigger Condition New Trigger Button Write Read	
Edit Delete Edit Delete Trigger Condition Trigger Condition Trigger Condition	
*	
If two or more are specified, the Action is executed when any of them is satisfied.	
For more complicated operation, please configure from [Excel Action]-[Execution Sequence List] in the menu.	
OK	Cancel

2) Click the [New Trigger Condition] button.

New Trigger Condition	New Trigger Button	
Edit Delete	*	Edit Delete Trigger Condition

• You can also activate ACTION by placing a button on Excel from [New Trigger Button] and clicking it. Refer to "12.3 Setting Guide" for more details.

3) Click the [New Trigger Condition] button.

Set Trigger Condition
Specify a trigger condition of the ACTION.
Trigger Condition
New Trigger Condition
Edit
Node
Close

 Enter the trigger condition name "TurnOnWriteStartBit" in [Trigger Condition Name], and select "AGP1" in [Node Name] as a name of the data transfer source.

			×
Trigger Condition Name	TurnOnWriteStartBit	-0	
Node Name	PC1 Add Node		Find Node
	AGP1		
			•

5) Click the [When Device ON] button in the [Condition 1] tab and select "PLC1" for the device name.

Condition 1			
🛒 When Turned ON	While Device is ON	While Condition Satisfied	
G Specified Time	While Device is OFF	When Condition Satisfied	
Constant Cycle	When Device ON	🔠 When Partner Node ON	
When Device Changes	When Device OFF	When Partner Node OFF	
Device Name #INTERNAL Turn OFF the Specified Device Address after Processing. FICT Data Type 16Bit(Signed)			
Limited Time Offer	hour 📑 min	Check Cycle 🗖 Always	
	Detail Settings	OK Cancel	

6) Click the [Device Address] list button and select "WriteStart" for the device symbol name which serves as the trigger.

Device Name		
PLC1	Turn OFF the Specified Device Address after	
Device Address	WriteStart	
Image: Image	Recordivertorage	
Data Type 16Bit(Signed)	I PLC1data	
Limited Time Offer		
0 + hour 0 + min - 0 + hou	u la	
		-
	el	Í
		Ī

[Data Type] automatically appears after selection, too.

7) Click the [OK] button.

Device Name	Turn DFF the Specified Device Address after Processing.
PLC1 Device Address	Processing.
WriteStart	_
Data Type Bit	
Limited Time Offer	Check Cycle 🔲 Always
0 - hour 0 - min · (nin 500 ms
	Detail Settings OK Cancel

8) Click the [Close] button.

Set Trigger Condition
Specify a trigger condition of the ACTION.
Trigger Condition
New Trigger Condition
TurnOnWriteStartBit Edit
Node AGP1
When WriteStart of Node AGP1 is Turned ON
Close

9) Click the blank line of [Write] and select "TurnOnWriteStartBit" as a trigger condition.

New Trigger Condition New Trigge	er Button
Write Edit Delete	Read Edit Delete
Trigger Condition	
	NG -

10) Click the [OK] button.

()	If two or more are specified, the Action is executed when any of them is satisfied.		
	For more complicated operation, please configure from [Excel Action]-[Execution Sequence List] in the menu.		
	OK Cancel		

11) Click the [OK] button.



• Here the dialog box will appear because no network project file is loaded to 'Pro-server EX'. This is not a problem, however. The file will be loaded in "12.1.9 Saving a Network Project File" mentioned later.

This is the end of the content settings of a recipe sheet.

- Can display Data/Time on an Excel sheet.
 - Can display arrows on an Excel sheet.
 - [©] "5.3 Writing Arrows in a Form"
 - Can display a trigger source node on an Excel sheet.

"5.4 Writing Trigger Source Node Names in a Form"

5 Close 'Excel'.

Microsoft Excel - template.xlt	
File Edit View Insert Format Tools Data	Window Help ExcelAction(A)
Ctrl+N	🛃 🛍 🕄 🖑 Arial 🔹 10 🗸 🖪 🖌 🖳 🐳 🖑 + 🔅
Ctrl+O	
Uose	
 ↓ ∰ Save Ctrl+S	
1 Web Page Preview	
2	- 30 40 50
3 Page Setup	80 90 100
4 Print_Area	▶ <u>130</u> <u>140</u> <u>150</u>
5 A Print Preview	
6 ₽rint Ctrl+P	
8 Send To	• • • • • • • • • • • • • • • • • • •
9	
10 <u>1</u> \Documents and Se\exceltablexis.xis	
11 2 \Documents and Settings\A\Book1.xls	
12 3 \Documents and Settings\m\aaaa.xls	
13 <u>4</u> \Documents and Settings\mh\test.xls	
14 15 ^E × ^{it}	
16 3	
17	
18	
Sheet1	
	· · · · · · · · · · · · · · · · · · ·
Ready	

The following dialog box will appear, asking you if you want to save changes before closing. Click the [Yes] button.



6 On the "Create form using Excel" screen, click the [OK] button.

Output File			
The template file stores setting info. The actual output result will be displayed in the following file.			
Folder Name	C:\Documents and Settings\Administrato	r'Desktop Reference	
i olaoi rialilo			
File Name	RecipeWrite.xls	Return to Default Settings	
	,		
Start from Displayed State			
De net sous the substitution (CTION) since			
Do not save the output file when ACTION runs. (Please use the Save or Save by Macro of Excel.)			
(, , , , , , , , , , , , , , , , , , ,			
-			
		OK N Cancel	
	L L L L		

12.1.7 Setting ACTION Node/Process Completion Notification

This step sets the name of an ACTION node and the alert setting whether it should be tuned on or off when the ACTION is completed.



- ACTION Node : PC1
- Receive Notification: OFF

1 On the "Set ACTION Name/Parameter" screen, click the [Next] button.

Set ACTION Name/Parameter	×
Add a new ACTION. Specify an ACTION name, and set its parameter.	
ACTION Type Create form using Excel.]
Display the Actions of the old version of Pro-Server	
ACTION Name RecipeWrite	1
Click here to set the ACTION parameter.	
Next Cancel	

2 Click the list button of [ACTION Node] and select "PC1" as a node where ACTION operates.

Set ACTION Node/Process Completion Notification	×
ACTION Type Create form using Excel.	
ACTION Name RecipeWrite	
Specify an action node (Windows PC) where the ACTION works practical	ly.
PC1 PC1 Paceive Notification Exists	
Please specify the notified device that will be informed of the execution of the ACTION. After the execution of the ACTION, it will be is turned on.	

3 Turn off the [Receive Notification Exists] check box, if checked.

ACTION Nod	
	Notification Exists
the exi	specify the notified device that will be informed of scution of the ACTION. After the execution of the N, it will be is turned on.
	Device Name
	#INTERNAL
	Notified Device
	Notified Device
	Notified Device Data Type Bit

- **NOTE** Do not check "Receive Notification Exists".
- 4 Click the [Complete] button.

The "Set ACTION Node/Process Completion Notification" screen will disappear. On the left of the screen, the name of ACTION you set will appear.

Device Name	
#INTERNAL	
Notified Device	
T	
Data Type Bit	
Back Complete Cancel	

This is the end of the settings of the ACTION node and process completion notification.

12.1.8 Verifying Setting Result

This step verifies setting results on the setting content list screen.

• With the "Excel Report" ACTION, you cannot add, edit or delete a trigger condition in "ACTIONspecific Trigger Condition/Process List". To change a preset condition, click the [Set Parameter] button, and select [Edit Template] to change data on Excel.

1 Select the ACTION name "Recipe Write" from the tree display on the left of the screen.

牧 P	ro-St	udio E	x	?.npx		
File	Edit	Tool	Pt	ogrammin	g Assist	S
	1	Start	> >		Node	2
	Ac	d		İmp	ort	l
Edit				Dele	te	l
		CTION rigger I Turr lata Tra levice I	ipe\ Jono hOn\ ansfi	มีเปลูก WriteStartI er	Bit	

Confirm that the setting content appears on the right of the screen.

Setting Help	
>> ≽ Symbol >> ≷ Feature >> 📄 Save >> 🖄	Transfer Monitor Status
ACTION-Specific Trigger Condition/Process List	ACTION
Add Edit Release	Delete ACTION
Data Source Node AGP1	RecipeWrite
Trigger When WriteStart of Node AGP1 is Tu Condition Data	Rename
Completion TurnOn TurnOn	Create form using Excel.
	Set Parameter
L	ACTION Node
	PC1

2 Select the trigger condition name "TurnOnWriteStartBit" from the tree display on the left of the screen.



Confirm that the setting content appears on the right of the screen.

Setting Help				
» ≽ Symbol » 襓 Feature 🕽	•	Save ≫ [V Transfer	Monitor Status
Trigger Condition	Sequ	uence Dia	igram by Tr	igger Condition
	AV	Collapse	Tra	nsfer ACTION/Data
TurnOnWrite Edit	Feature	Source	Destinat	Receive/Process Co
Node AGP1	RecipeW	AGP1.#	> PC1.Re	
When WriteStart of Node AGP1				

This is the end of the verification of the settings.

12.1.9 Saving a Network Project File

This step saves the current settings as a network project file and reloads to 'Pro-Server EX'.

Refer to "25 Saving" for details about saving a network project file.

- 'Pro-Server EX' reads a created network project file, and then executes ACTION according to the settings in the file. The settings therefore need be saved in the network project file.
 - Be sure to reload the network project file to 'Pro-Server EX' If not, ACTION will not work.



12.1.10 Test Write

You can check if the settings are correct before transferring a created network project file to entry nodes.

NOTE	You do not necessarily have to perform a test write. If you skip this, proceed to "12.1.11 Transferring a Network Project File".
MPORTANT •	Note that the data will be actually written in the Device/PLC when you specify the device of Device/PLC as a write destination. To perform a test write, it is necessary that 'Pro-Server EX', to which a created network project file has been loaded, is running.

- 1 Click the [Feature] button.
- 2 Click "ACTION" from the tree display on the left of the screen, then click the [Edit] button.
- 3 On the "Set ACTION Name/Parameter" screen, click the [Click here to set the ACTION parameter] button.
- **4** On the "Create form using Excel" screen, click the [Edit Template] button.

5 With the ACTION area selected, click the [Test Write] icon.

Microsoft Exce	el - template	e3.xlt							_	
Eile Edit Viev	v <u>I</u> nsert Fg	ormat <u>T</u> ools <u>D</u> at	a <u>W</u> indow <u>H</u> elp	ExcelAction(A)					_	Ъ×
🗅 🖆 🖬 🔒	la 🖗	የ 👗 🖻 💼	ω - 🍓 Σ	<i>f</i> ≈ ĝ↓ 🛍	2 *		•	• B	<i>I</i> <u>U</u> =	» ▼
🛛 🖾 SnagIt 😭 🛛 V	Vindow	•								
] 🤬 健 👋 😭 .	XL 🖉 🖉) 📄 🙀 💕	o Test Write							
	<u> </u>	=EMBED("Pr	or Write mOc>	c.FormRange	Info.1","")					
A	В	C I	E	F	G	Н	<u> </u>	J	K	
1										
2 1				ļ						
3 2				Ţ						
4 3		ļ								
5		U		- L						
6										
7										

At this point, data is written in the Device/PLC.

- You can check that data is being written on the "Symbol Monitor" screen of "Status Monitor". For more details, refer to "28 Simply Confirming On-site Status".
 - Refer to "12.4 Restrictions" for details about the restrictions on test writes.

12.1.11 Transferring a Network Project File

This step loads a saved network project file to 'Pro-Server EX' and then transfers to entry nodes.

Refer to "26 Transferring" for details about transferring a network project file.

NOTE • Be sure to transfer a network project file. If not, ACTION will not work.

12.1.12 Executing ACTION

This step verifies that enabling a trigger condition activates ACTION and writes the data of the recipe sheet (File name: "Recipe write.xls") to the specified device of Device/PLC.

🜉 Symbol - Monitor of Pro-Server EX						
Node AGP1 Device/PLC PLC1	 Device Ad 	dress Sheet3	-	-		
Set Polling time 1000ms Time expended fr	or read 3047ms	Time expended for writ	e 📃	Start		
G G Symbol Data type + Address	s Count	+00	+01	+02	+03	+04
WriteStart Bit M0001 RecordNoStor16Bit(Signed) D0010	1					
PLC1data 16Bit(Signed) D0050	5	10	20	30	40	50

NOTE

• You can check the write/read status using the symbol or device monitor. For more details, refer to "28 Simply Confirming On-site Status".

- If error occurs, you can check the log in the Log Viewer. For more details, refer to "28.5 Monitoring System Event Logs".
- If you want to achieve faster communication during ACTION, refer to "29 Tips for Faster Communication".

This is the end of the explanation of this ACTION.

12.2 Modifying Recipe Data from the Actual Values

[Action Example]

Detect the rising of the trigger device (bit device: "M01") of Device/PLC and read out the data of 5 devices (word device: address "D50" to "D54") of Device/PLC to an Excel recipe sheet.

(Example) Reading out the data to record No. "1" of a recipe sheet.



This section describes the setting procedures for executing the above action (ACTION) as an example.

[Setting Procedure]

1	Creating a Recipe Sheet (page12-32)	This step creates a recipe sheet in 'Microsoft Excel' to write the data read from Device/PLC.
2	Starting 'Pro-Studio EX' (page12-33)	This step starts 'Pro-Studio EX'.
3	Registering Entry Nodes (page12-33)	This step registers the PC and the display units as entry nodes.
4	Registering Symbols (page12-34)	This step registers as a symbol the device of Device/ PLC from which data is read.
5	Specifying a Recipe Sheet and its Output File (page12-36)	This step sets the following items:Specify a recipe sheetSpecify an output file
6	Setting the Contents of a Recipe Sheet (page12-39)	This step sets the following items:Set a device to readSet a recipe write range
7	Setting ACTION Node/Process Completion Notification (page12-53)	This step sets the name of an ACTION node and the alert setting whether it should be tuned on or off when the ACTION is completed.
8	Verifying Setting Result (page12-55)	This step saves the current settings as a network project file and reloads.
9	Saving a Network Project File (page12-57)	This step saves the current settings as a network project file and reloads.
10	Transferring a Network Project File (page12- 58)	This step transfers a saved network project file to the display unit.
	+	
11	Executing ACTION (page12-58)	This step verifies that the data of Device/PLC is written in the specified area of a recipe sheet when the preset trigger condition has become effective.

12.2.1 Creating a Recipe Sheet

This step creates a recipe sheet to write the data read from Device/PLC.

1 Start 'Microsoft Excel' and create the recipe sheet below in Sheet 1.

[Creation Example]



Leave both spaces for "Symbol Name" (Cells B1 to F1) and those for "Record No." (Cells A2 to A4) blank for these will be automatically allotted and filled in after completing the setting.

2 Save the recipe sheet with the file name "recipe.xls" on PC desktop after creating.

NOTE • You can create a recipe sheet in the direction (horizontal) as shown below.



12.2.2 Starting 'Pro-Studio EX'

This step starts 'Pro-Studio EX'.

Refer to "3 Trial of Pro-Server EX" for details about starting method.

12.2.3 Registering Entry Nodes

This step registers the PC and the display unit connected with network as nodes. Refer to "31 Node Registration" for details about entry nodes.



Node Name	:PC1
IP Address	:192.168.0.1



Node Name	:AGP1	
IP Address	:192.168.0.100	
Device/PLC Information		



Entry Node	Setting item	Setting example
PC	Node Name	PC1
	IP Address	192.168.0.1
	Туре	GP3000 series
Display Unit	Node Name	AGP1
	IP Address	192.168.0.100

12.2.4 Registering Symbols

This step registers as a symbol the device address of Device/PLC to which device data is written. Refer to "32 Symbol Registration" for details about symbols.





• Trigger (Trigger Condition)

Setting item	Setting content
Symbol Name	Start reading
Data Type	Bit
Device address for symbol registration	"01" of Device/PLC (PLC1)
No. of Devices	1

Record No. Storage

Setting item	Setting content
Symbol Name	Record No. Storage
Data Type	16Bit (Unsigned)
Device address for symbol registration	"10" of Device/PLC (PLC1)
No. of Devices	1

Reading Device

Setting item	Setting content	
Symbol Name	PLC1 data	
Data Type	16Bit (Signed)	
Device address for symbol registration	"D50" to "D54" of Device/PLC (PLC1)	
No. of Devices	5	

12.2.5 Specifying a Recipe Sheet and its Output File

This step specifies the pre-created recipe sheet and its output file. Refer to "12.3 Setting Guide" for more details.

Ex.

Setti	ng item	Setting content
Specify a Template	Template File	C:\Documents and Settings\Administrator\Desktop\recipe.xls
	Folder Name	C:\Documents and Settings\Administrator\Desktop
Output File	File Name	Recipe read.xls
	Start with the output file displayed	Checked
	Do not save the output file when ACTION runs.	Not checked

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

饕 Pro-Studio EX 💡	.npx		
File Edit Tool Pro	gramming Assist – Setti	ing Help	
对 Start >	Node >	Symbol Symbol	Save 🕽
Symbol		Node Name AGP1	Device Name
Group	Ungroup	Sheet Name Sheet3	ietitasa glob.
Insert	Delete		in an a glob.

2 Select [ACTION] from the tree display on the left of the screen, then click the [Add] button.

物 Pro-Studio EX	?.пря	
File Edit Tool F	Programming Assist	Setting Help
对 Start 🔉	> 🔪 Node	>> 🌔 Symbol .
Add De Lait	Import Delete	ACTION
ACTION Trigger Cor Data Trans Device Car	fer	In addition using applic using Acce In the Pro-S referred to a
3 Click the [ACTION Type] list button, and select "Create form using Excel".

Then, enter the name of ACTION to set in the [ACTION Name] field. In this example, enter "Recipe Read".

NOTE	• [ACTION Name] car	be an arbitrary name.
------	---------------------	-----------------------

Set ACTION Name/Parameter
Add a new ACTION. Specify an ACTION name, and set its parameter.
ACTION Type Create form using Excel.
ACTION Name Writes Data to CSV file. ACTION Name Writes Data from CSV file. Upload of GP JPEG Data. Upload of GP Log Data. Writes Data to E-Mail. Upload to the database. Download from the database.
OK Cancel

4 Click the [Click here to set the ACTION parameter] button.

ACTION Type Create form using Excel.
Display the Actions of the old version of Pro-Server
ACTION Name RecipeRead
Click here to set the ACTION parameter.

- 5 Make settings regarding an Excel template and its output file.
 - 1) Click the [Reference] button of [Template File] to set the template file "templete.xlt" which you created.

Create form using Excel		
		Version 1.22
┌─Template Designation ───		
When you use the wizard	of Excel template file that is the source of forms. I, the theme template file is copied to a file with this name. template, please specify the file name.	
Template File	C:\Documents and Settings\Administrator\Desktop\template.	Reference
	Edit Template	

2) Click the [Reference] button of [Folder Name] and specify "Desktop" as a folder to save the output file.

Output File							
Folder Name	C:\Documents and Settings\Administrator\D	Reference					
File Name	Report_%Y%M%D.xls	Return to Default Settings					
	ilayed State e output file when ACTION runs. a Save or Save by Macro of Excel.)						
		OK Cancel					

3) Set the file name "RecipeRead.xls" in the [File Name] field for the output file to set.

Folder Name	C:\Documents and Settings\Administr	rator/Desktop Reference
File Name	RecipeRead.xls	Return to Default Settings
Start from Dis	splayed State	
	the output file when ACTION runs. he Save or Save by Macro of Excel.)	

4) Check the [Start from Displayed State] check box.

Output File The template file stores setting info. The actual output result will be displayed in the following file.						
Folder Name	C:\Documents and Settings\Administrator\De	esktop Reference				
File Name	RecipeRead.xls	Return to Default Settings				
	ayed State routput me when ACTION runs. Save or Save by Macro of Excel.)					
		OK Cancel				

NOTE • If you check [Start from Displayed State], you can read/write data with an output file displayed. This is useful if you need to confirm data immediately.

12.2.6 Setting the Contents of a Recipe Sheet

This step sets the contents of a recipe sheet to write the data read from Device/PLC. The example below shows the setting of data read area (recipe area) of a recipe sheet. Refer to "12.3 Setting Guide" for more details.



Ex.

Setting item	Setting content
Entry Node	AGP1
Device Name	PLC1
Device Address/Symbol Group	PLC1 data
Add Device Address/ Symbol Name	Checked
Target Cell Range	A1 to F4
Data Direction	Specify the direction of record No.s as "Vertical".
Trigger Condition Name	Turn on write start bit
Trigger Condition	When "Start writing" (M01) is ON

1 Click the [Edit Template] button.

Create form using Excel	
	Version 1.22
Template Designation	
When you use the wizard	of Excel template file that is the source of forms. J, the theme template file is copied to a file with this name. template, please specify the file name.
Template File	C: Documents and Settings (Administrator Desktop template.x)
	Edit Template

- 2 Set a data read area.
 - 1) Click the [Recipe Area] icon on Excel.

🛚 Microsoft Excel - Recipe.xlt										
Elle Edit View Insert Format Iools Data Window Help ExcelAction(A)										
] D 😅 🖬 🗿 🕄 ∽ - 🍓 Σ f* 斜 🏙 🕄 🐥 Arial 🔹 10 🔹 B Ζ Ψ ≡ Ξ 🗄 • 💩 • ∛										
	=		_							
A Recipe Area	С	D	E	F	G	Н		J	K	
1										
2										
3										
4										
5										

```
NOTE
```

• Selecting "Recipe Area" from [Excel Action] of the menu displays the same screen.



2) Click the list button of [Node] and select "AGP1" as a data transfer source node.

🐝 Rea	ipe	_ 🗆 ×
Actio	on Settings Record No. Settings Trigger Condition Settings	
	Device Settings Node (Trigger-Source Node) V Device	
	Name Name	
	Group (Trigger (ource Node) Devices	
	Data Type 16Bit(Signed)	
	Add Device Address/Symbol Name memory data, please use a group symbol.	

3) Click the list button of [Device Name] and select "PLC1" as a data transfer source device.

👋 Ree	ipe 🛛		
Actio	on Settings Record No. Se	ttings Trigger Condition Settings	
	Device Settings		
	Node	AGP1 AGP1	-
	Device Address/Symbol Group	No. of HINTERNAL	
	Data Type	16Bit(Signed)	
	Add Device Address	/Symbol Name Note: When specifying inconcecutive memory data, please use a group symbol.	

4) Click the list button of [Device Address/Symbol Group] and select "PLC1 data" as a symbol of the data to read out.

Action Settings Record No. Settings Trigger Condition Settings	
Device Settings Node AGP1 Device PLC1 Name	
Device Address/Symbol Group	
Data Type 16Bit(Signed)	
Add Device Address/Symbol Name	

The device number "1" will be automatically entered in [No. of Devices], and "16Bit(Signed)" in [Data Type].

🐝 Recipe							_ 🗆 X
Action Settings	Record No. Se	ttings Trigger Condi	tion Settings				
Device Se	ettings Node	AGP1		Device	PLC1	_	
Device A	ddress/Symbol	PLC1data		Name No. of	1	=	
	Group ata Type 🌈	16Bit(Signed)		Device			
🔽 Add	Device Address	/Symbol Name	me	emory data, p	pecifying inconce please use a gro	ecutive up	
			syi	mbol.			

5) Check [Add Device Address/Symbol Name].

Action Settings	Record No. Se	ettings Trigger Condition S	Settings			
_Device S	ettings					
	Node	AGP1	•	Device Name	PLC1	-
	\ddress/Symbol Group	PLC1data	V	No. of Devices	1	•
D	ata Type	16Bit(Signed)				
Add	Device Address	:/Symbol Name			ecifying inconci blease use a gro	

- After the procedure of "12.2.9 Saving a Network Project File" described later, open the template again, and open the recipe setting dialog box. After confirming that the "Add Device Address/ Symbol Name" checkbox has been checked, click the [OK] button. Then, the device address/ symbol name will be reflected in the template.
- 6) Click the cell range specify button of [Target Cell Range].

Layout Settings Target Cell \$F\$10	Sample
Data Direction	An image of writing to a cell is shown below. The arrow points in the direction of arranging recipe data.
No. of Records	D101 D102 D103 D104 1 25 25 25 25 2 50 20 20 10
Note: The layout of a group symbol is fixed.	3 20 20 30 30 4 10 10 10 70

7) Drag the mouse to specify the data read area (cells A1 to F4). Then click the [OK] button.

	Α	В	С	D	E	F	G	Н		J	K
1											
2											
3											
4											
5									-		
6				Spe	cify Range			? ×			
7				Plea	ise specify the	e rande.					
8											
9											
10											
11											
12				\$A:	\$1:\$F\$4						
13											
14							OK	Cancel			
15											
16											
17											
18											

NOTE • When specifying the area, cover the cells to insert record No.s and Device Address/Symbol Names.

8) Select "Vertical" of [Data Direction].

Layout Settings	Sample
Target Cell	An image of writing to a cell is shown below.
Range	The arrow points in the direction of arranging
Data Direction	recipe data.
No. of Records 3	D101 D102 D103 D104 1 25 25 25 25 2 50 20 20 10 3 20 20 30 30 4 10 10 10 70

9) Click [Allot Record No. from 1 to Cell Range].

Layout Settings Target Cell \$4\$1:\$F\$4	Sample
Data Direction	An image of writing to a cell is shown below. The arrow points in the direction of arranging recipe data.
No. of Records 3	D101 D102 D103 D104 1 25 25 25 25 2 50 20 20 10 3 20 20 30 30 4 10 10 10 70
	Allot Record No. from 1 to Cell Range

NOTE • Specify the recipe data to write in Device/PLC with record No.s This example allots record No.s to the recipe data.

Record No.s and ruled lines are automatically added on the recipe sheet.

	A	В	С	D	E	F	G
1							
2	1						
3	2						
4	3						
5							
0							

3 Specify a record No.

Specify the recipe data area by entering a record No. in the symbol "Record No. storage" from display unit or Device/PLC.

(Example) In case of storing device data "1" in the device "Record No. storage".



1) Click the [Record No. Settings] tab.

Recipe		
Action Settings Record No. Settings rigger Condition Settings		
Device Settings		
Node AGP1	Device Name	PLC1
Device Address/Symbol I PLC1data	No. of Devices	5 🕂

2) Click "Specify by device/symbol value" in [Record No. at Write Recipe].

Node	(Trigger-Source Node	Device 	•	
Device Address/Symbol		🗾 🛛 Data Type	16Bit(Signed)	
		No. of Char	acters 1 📑	
O Specify by cel	value			
	\$A\$1	R	am	
יזימי	200)
.300	400 From Cell to	D PLC		5

NOTE

If you select [Specify by cell value], specify any cell on Excel. The number entered in the cell is recognized as the record No.

Refer to "12.3 Setting Guide" for more details.

 Click the list button of [Node] and select the node name "AGP1" which has the Device/PLC to store the record No.

Record No. at Write Rec Specify by device		
Specily by devic	•	
Node		Device 📃 🔽
Device Address/Symbol	AGP1 D.	Data Type 16Bit(Signed)
	N	No. of Characters
O Specify by cell v	alue	
	\$4\$1	
100 300		

4) Click the list button of [Device Name] and select the Device/PLC "PLC1" to store the record No.

Record No. at Write Reci	pe
Specify by device	s/symbol value
Node	AGP1 Device
Device Address/Symbol	
	No. of Characters
O Specify by cell value	lue
	\$A\$1
1100 2 300 4	

5) Click the list button of [Device Address/Symbol] and select the symbol name "Record NoStorage" of the device to store the record No.

Record No. at Write Recipe		
 Specify by device/sym 	mbol value	
Node	AGP1 Device PLC1	
Device Address/Symbol		
100 200 300 400		

The device data type "16Bit(Unsigned)" will be automatically entered in [Data Type].

- 4 Set trigger conditions.
 - 1) Click the [Trigger Condition Settings] tab.

🎬 Recipe							_ 🗆 🗙
Action Settings	Record No. Setti	nge Trigger Condition	Settings)			,
The recip	e has two or more	e records. Please coning	gure the s	pecification m	ethod of them.		
Record No.	at Write Recipe 😑						
Spe	cify by device/syml	ool value					
Node	ļ	AGP1	·	Device Name	PLC1	•	
Device Addres:	:/Symbol	RecordNoStorage	•	Data Type	16Bit(Signed)		

2) Click the [New Trigger Condition] button.

New Trigger Condition	w Trigger Button
Edit Delete Trigger Condition *	Edit Delete Trigger Condition *

• You can also activate ACTION by placing a button on Excel from [New Trigger Button] and clicking it. Refer to "12.3 Setting Guide" for more details.

3) Click the [New Trigger Condition] button.

Set Trigger Condition
Specify a trigger condition of the ACTION.
Trigger Condition
New Trigger Condition
Edit
Node
Close

 Enter the trigger condition name "TurnOnReadStartBit" in [Trigger Condition Name], and select "AGP1" in [Node Name] as a name of the data transfer source.

			×
Trigger Condition Name	TumOnReadStartBit	FQ	Find Node
Node Name	PC1 Add Node		Find Node
			-

5) Click the [When Device ON] button in the [Condition 1] tab and select "PLC1" for the device name.

Condition 1					
Specify the	Trigger Condition.				
35	When Turned ON		While Device is ON		While Condition Satisfied
Ġ	Specified Time	1	While Device is OFF		When Condition Satisfied
0	Constant Cycle		When Device ON		When Partner Node ON
	When Device Changes		When Device OFF	寒	When Partner Node OFF
Device Nai #INTERN/ #INTERN/ PLC1 Data Type	AL		Turn OFF the Specified Processing.	d Device	Address after
Limiter	d Time Offer nour O 💼 min - O 🔒	+ hour	0 🛨 min	Che	eck Cycle 🔲 Always 500 🛨 ms
			Detail Settings		OK Cancel

6) Click the [Device Address] list button and select "ReadStart" for the device symbol name which serves as the trigger.

Device Name	The OFF the Constitution Address store	
PLC1	Turn OFF the Specified Device Address after Processing.	
Device Address		_
WriteStart 💌	⊡- cocal:Sheet3	
Data Type 16Bit(Signed)	Read Start Hecord Nationage	
	PLC1data	
Limited Time Offer		
0 <u>→</u> hour 0 <u>→</u> min · 0 <u>→</u> hou		
	1	:el

[Data Type] automatically appears after selection, too.

7) Click the [OK] button.

Condition 1					
Specify the Trigger Condition.					
👫 When Turned ON	While Device is ON	While Condition Satisfied			
C Specified Time	While Device is OFF	When Condition Satisfied			
Constant Cycle	When Device ON	🚆 When Partner Node ON			
When Device Changes	When Device OFF	🗏 When Partner Node OFF			
Device Name PLC1 Device Address ReadStart Data Type 16Bit(Signed)	Turn OFF the Specifier Processing.	d Device Address after			
Limited Time Offer Check Cycle CAlways					
	Detail Settings	Cancel			

8) Click the [Close] button.

Set Trigger Condition
Specify a trigger condition of the ACTION.
Trigger Condition
New Trigger Condition
Tum0nReadStartBit Edit
Node AGP1
When WriteStart of Node AGP1 is Turned ON

 Click the blank line of [Clear Cel when the following condition is satisfied] and select "TurnOnReadStartBit" as a trigger condition.



10) Click the [OK] button.

1	If two or more are specified, the Action is executed when any of them is satisfied.
	For more complicated operation, please configure from [Excel Action]-[Execution Sequence List] in the menu.
	OK Cancel

11) Click the [OK] button.

NOTE

Excel Re	port Action - Info	
•	Cannot perform Test Read. Please confirm the followings. - The network project file (npx) has been correctly loaded into Pro-Server EX. - The target node is participating. - The cable is not broken. OK	
Here the dial	og box will appear because no network project file is loaded	l to 'Pro-server EX'. This is

The file will be loaded in "12.2.9 Saving a Network Project File" mentioned later.

This is the end of the content settings of a recipe sheet.

not a problem, however.

- Can display Data/Time on an Excel sheet.
 - Can display arrows on an Excel sheet.

"5.3 Writing Arrows in a Form"

- Can display a trigger source node on an Excel sheet.
 - "5.4 Writing Trigger Source Node Names in a Form"

5 Close 'Excel'.

Microsoft Excel - Book1.xls			
File Edit View Insert Format Tools Data	Window Help ExcelAction(A)		_ & ×
Ctrl+N	≜↓ (11. 🖾 🐥	• • B / I	J 🗐 🗐 🗉 🛛 • 🕭 • 🐥
Ctrl+O	A 🖾 🞘 -		
Lose			
∫∰ Gave Ctrl+S	L L L L L L L L L L L L L L L L L L L		
📥 gard Carro	elFormOcx.FormRangeInfo.1","")		
	E F G	H I	J K 🛓
2 Web Page Preview			
3 Page Setup	ф		
5 👌 Print Preview			
6 🖨 Print Ctrl+P			
7 8 Send To			
9			
10 <u>1</u> \Documents and Settings\A\Book1.xls			
11 2 \Documents and Settings\Ad\test.csv			
12 3 \Documents and Settin\FlingData.xls			
13 <u>4</u> \Documents and Se\mailmessage.xls			
AF Exit			
16 ×			
17			
18			•
K Sheet1 / Sheet2 Sheet3 /			
] 🔚 🖬 💵 🖓 💷 🕅 🔍 🔅	3 •		
Ready			NUM //

The following dialog box will appear, asking you if you want to save changes before closing. Click the [Yes] button.



6 On the "Create form using Excel" screen, click the [OK] button.

Create form using Excel			
			Version 1.10
-Template Designation			
When you use the wizar	of Excel template file that is the source of form d, the theme template file is copied to a file with template, please specify the file name.		
Template File	E:\Documents and Settings\Owner\Desktop\	template.xit	Reference
	Edit Template]
Output File The template file stores s	etting info. The actual output result will be disp	played in the follo	wing file.
Folder Name	E:\Documents and Settings\Owner\Desktop		Reference
File Name	RecipeRead.xls	Return to D	efault Settings
Start from Displayed	State		
Do not save the outp (Please use the Save	ut file when ACTION runs. e or Auto-save function of Excel.)		
		ок 💦	Cancel

12.2.7 Setting ACTION Node/Process Completion Notification

This step sets the name of an ACTION node and the alert setting whether it should be tuned on or off when the ACTION is completed.



- ACTION Node : PC1
- Receive Notification: OFF

1 On the "Set ACTION Name/Parameter" screen, click the [Next] button.

Set ACTION Name/Parameter 🛛 🛛 🛛 🛛 🛛
Add a new ACTION. Specify an ACTION name, and set its parameter.
ACTION Type Create form using Excel.
Display the Actions of the old version of Pro-Server
ACTION Name RecipeRead
Click here to set the ACTION parameter.
Next Cancel

2 Click the list button of [Action Node] and select "PC1" as a node where ACTION operates.



3 Turn off the check box of [Receive Notification Exists], if checked.

Device Name #INTERNAL Notified Device Data Type Bit	Hease s the exec	otification Exists pecity the notified device that will be informed of ution of the ACTION. After the execution of the it will be is turned on.
Data Type Bit		Notified Device
Data Type Bit		T
		Data Type Bit

- **NOTE** Do not check "Receive Notification Exists".
- 4 Click the [Complete] button.

The "ACTION Node/Process Completion Notification Settings" screen will disappear. On the left of the screen, the name of ACTION you set will appear.

	Device Name	
	#INTERNAL	
	Notified Device	
	Data Type Bit	
Ba	ck Complete Cancel	

This is the end of the settings of the ACTION node and process completion notification.

12.2.8 Verifying Setting Result

This step verifies setting results on the setting content list screen.

• In case of the "Excel Report" ACTION, you cannot add, edit or delete trigger conditions from "Trigger Condition/Process List per ACTION". To change the settings, click the [Parameters Settings] button and change the settings in [Edit Template] on Excel.

1 Select the ACTION name "RecipeRead" from the tree display on the left of the screen.



Confirm that the setting content appears on the right of the screen.

Setting Help	
>> ≽ Symbol >> 襓 Feature >> 📄 Save >> 🖄	Transfer Monitor Status
ACTION-Specific Trigger Condition/Process List	ACTION
Add Edit Release	Delete ACTION
Data Source Node AGP1	RecipeRead
Trigger When WriteStart of Node AGP1 is Tu Condition Data	Rename
Completion TurnOn	Create form using Excel.
	Set Parameter
L	ACTION Node
	PC1

2 Select the trigger condition name "TurnOnReadStartBit" from the tree display on the left of the screen.



Confirm that the setting content appears on the right of the screen.

Setting Help					
	» 📑	Save ン	Ľ	🔰 Transfe	r Monitor Status
Trigger Condition	Sec	luence D Collapse	iagr	,	rigger Condition ansfer ACTION/Data
TumOnRea Edit Node AGP1 When WriteStart of Node AGP1	Feature RecipeR	Source AGP1.#	->	Destinat PC1.Re	Receive/Process Co

This is the end of the verification of the settings.

12.2.9 Saving a Network Project File

This step saves the current settings as a network project file and reloads to 'Pro-Server EX'.

Refer to "25 Saving" for details about saving a network project file.

- 'Pro-Server EX' reads a created network project file, and then executes ACTION according to the settings in the file. The settings therefore need be saved in the network project file.
 - Be sure to reload the network project file to 'Pro-Server EX'. If not, ACTION will not work.



- Path of network project file
- Title

: Desktop\monitor.npx : EXCEL Report ACTION

12.2.10 Test Read

You can check if the settings are correct before transferring a created network project file to entry nodes.

When executing ACTION, the setting data is output to an output file. However, when executing a test read, it is reflected in a template file.

NOTE	You do not necessarily have to perform a test read.
·	If you skip this, proceed to "12.2.11 Transferring a Network Project File".

• To perform a test read, it is necessary that 'Pro-Server EX', to which a created network project file has been loaded, is running.

- **1** Click the [Feature] button.
- 2 Click "ACTION" from the tree display on the left of the screen, then click the [Edit] button.
- **3** On the "Set ACTION Name/Parameter" screen, click the [Click here to set the ACTION parameter] button.
- **4** On the "Create form using Excel" screen, click the [Edit Template] button.
- **5** With the ACTION area selected, click the [Test Read] icon.

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The setup contents will be read in the template.

NOTE • Refer to "6.4 Restrictions" for details about the restrictions on test reads.

12.2.11 Transferring a Network Project File

This step loads a saved network project file to 'Pro-Server EX' and then transfers to entry nodes.

Refer to "26 Transferring" for details about transferring a network project file.

NOTE • Be sure to transfer a network project file. If not, ACTION will not work.

12.2.12 Executing ACTION

This step verifies that enabling a trigger condition activates ACTION, opens a recipe sheet (file name: "recipe read.xls"), and then writes the device data in the specified location on the sheet.

	A	В	С	D	E	F	G
1		PLC1data[0]	PLC1data[1]	PLC1data[2]	PLC1data[3]	PLC1data[4]	
2	1	10	20	30	40	50	
3	2						
4	3						
5							
6							
7							

NOTE

If error occurs, you can check the log in the Log Viewer. For more details, refer to "28.5 Monitoring System Event Logs".

• If you want to achieve faster communication during ACTION, refer to "29 Tips for Faster Communication".

This is the end of the explanation of this ACTION.

12.3 Setting Guide

This section explains how to set each screen in detail.

- 12.3.1 "Creating form using Excel" Screen
 - [™] "■ "Creating form using Excel" Screen"
- 12.3.2 "Recipe" Screen

"Action Settings" Tab

Device Settings Node (Trigger-Source Node) Device Address/Symbol Group Data Type [16Bit(Signed)	Device Name No. of Devices Devices No. of Devices Note: When specifying inconcecutive
Add Device Address/Symbol Name	Note: when specifying inconcecutive memory data, please use a group symbol.
Target Cell \$B\$11:\$F\$1 Data Direction Device Device Record No. of Records T Note: The layout of a group symbol is fixed.	An image of writing to a cell is shown below. The arrow points in the direction of arranging recipe data. D101 D102 D103 D104 1 25 25 25 25 2 50 20 20 10 3 20 20 30 30 4 10 10 10 70 Allot Record No. from 1 to Cell Range

Setting	item	Setting content
	Node	 Selects a node which has a device to read/write data NOTE Clicking the [] button can retrieve or add entry nodes. Selecting "(Trigger-Source Node)" will select the entry node that has triggered the action.
	Device Name	 Selects a node which has a device to read/write data NOTE It is not necessary to set when the entry nodes are GP Series nodes and Pro- Server EX nodes.
Device Settings	Device Address/ Symbol Group	Sets the device address or symbol to be used. • When specifying a device address: Enter directly from the Calculator icon. Calculator icon Device Address/Symbol Group • When specifying a symbol: Select the symbol by clicking the list button. List button Device Address/Symbol Group NOTE • When setting non-sequential devices, be sure to specify a group symbol.
	Data Type	 When specifying a device address: Specify the data type. Data Type Deselect 16Bit(Signed) 32Bit(Signed) Bit 16Bit(Unsigned) 32Bit(Unsigned) Float 16Bit(HEX) 32Bit(HEX) Double When specifying a symbol: Data type automatically appears. Displays the number of devices to read/write, automatically calculating it from
	No. of Devices	 the selected cell range. NOTE If a group symbol has been selected, the number will be "1".

Setting	item	Setting content
Device Settings	Add Device Address/ Symbol Name	Displays Device Address, Symbol Name, and/or Group Symbol Name above or on the left of the cells where the data is written, serving as a guide to identify the data. For the display location, specify above or left in "Data Direction" mentioned later. NOTE Refer to the image figure shown in the lower right of the dialog box. • Vertical • Vertical • Horizontal • Horizontal
	Target Cell Range	 Specifies the cell range to which data will be written/read. Clicking the button can select the cell range on Excel. NOTE For the process on how to select cell ranges, refer to "■ Action Area Settings" in "5.1.2 Setting Guide". The useful function is available to check the specified cell range (Action area).Refer to "■ Action Area List" in "5.1.2 Setting Guide".
Layout Settings	Data Direction	Sets the data write direction when selecting multiple cells. Device V (Vertical) Sequentially from top to bottom. Record V (Horizontal) Sequentially from left to right . NOTE • The write image of the content set in "Layout Settings" appears in [Sample].
	No. of Records	Sets and displays the number of records used for a recipe, automatically calculating it from the specified cell range.

Setting item	Setting content				
Allot Record No. from 1 to Cell Range	Automatically inserts record No.s in the area specified in [Data Direction] of [Target Cell Range]. It is possible to enter record No.s directly on Excel, but this could cause erroneous operation due to typing error. For this, we recommend entering with the [Allot Record No. from 1 to Cell Range] button. NOTE • Clicking this button also inserts ruled lines in [Target Cell Range] automatically.				

"Record No. Settings" Tab

Recipe	x
Action Settings Record No. Settings Trigger Condition Settings	
The recipe has two or more records. Please configure the specification method of them.	
Record No. at Write Recipe	
Specify by device/symbol value	
Node (Trigger-Source Node Device Name	
Device Data Type 16Bit(Signed)	
No. of Characters	
O Specify by cell value	
\$4\$1	
100 200 300 400 From Cell to PLC	
Record No. at Read Actual Value	
Specify by device/symbol value	
Node (Trigger-Source Node Device Name	
Device Data Type 16Bit(Signed)	
No. of Characters	
O Specify by cell value	
\$4\$1	
100 200 300 400 From PLC to Cell	
OK Cancel	

Setting item			Setting content			
Describle		Specifies the recipe data by entering a record No. in the device or symbol sp by display unit or Device/PLC.				
Record No. at Write Recipe / Record No. at Read Actual Value	Specify by device/ symbol value	Node	 Selects a node which has the device where a recipe record No. exists. NOTE Clicking the [] button can retrieve or add entry nodes. Selecting "(Trigger-Source Node)" will select the entry node that has triggered the action. 			

Setting item			Setting content					
Record No. at Write Recipe / Record No. at Read Actual Value	Specify by device/ symbol value	Device Name	Selects a Device/PLC which has the device where recipe record No.s exist. NOTE • It is not necessary to set when the entry nodes are GP Series nodes and Pro-Server EX nodes.					
		Device Address /Symbol	Sets the device address or symbol to be used. • When specifying a device address: Enter directly from the Calculator icon. Calculator icon Device Address/Symbol Group I I I I I I I I I I I I I I I I I I I					
		Data Type No. of	Specify the data type. Data Type Deselect 16Bit(Signed) 32Bit(Signed) Bit 16Bit(Unsigned) 32Bit(HEX) Double					
		Charact- ers	Specifies the number of readable characters of a record No. when the specified data type of the record No. is "character string".					
	Specify by cell value		 Recognizes the entered value or character string in any specified cell on Excel, as a record No. Therefore, you can select [Specify by cell value] on condition that you use recipe data in such environment as the office having PCs. NOTE Be sure to place cells to specify record No.s on the same sheet as recipe data. 					

"Trigger Condition Settings" tab

Setting item	Setting content
Action Area No.	Displays No. allocated to each ACTION area by template.
New Trigger Condition	Displays the "Trigger Condition Settings" dialog box. Click here to set a new trigger condition.
New Trigger Button	Displays the "Create Trigger Button" dialog box. Refer to "5.6.2 Setting Guide" for more details.
	Selects a trigger condition to write recipe data. Click the blank line of [Trigger Condition] and then the list button to display the registered trigger condition.
Write	 NOTE When plural trigger conditions have been specified, satisfying at least one of those conditions executes ACTION. Clicking the [Edit] button can edit the specified trigger conditions. Clicking the [Delete] button deletes the specified trigger conditions.

Setting item	Setting content
	Selects a trigger condition to read recipe data. Click the blank line of [Trigger Condition] and then the list button to display the registered trigger condition.
Read	 NOTE When plural trigger conditions have been specified, satisfying at least one of those conditions executes ACTION. Clicking the [Edit] button can edit the specified trigger conditions. Clicking the [Delete] button deletes the specified trigger conditions.

12.4 Restrictions

Changing the Security Settings

To execute the Excel Form Creation Action, you need to change the Excel security settings. If you do not change the settings, the following problems will occur.

• [Tool] \rightarrow [QC Chart]

Pareto graph tools cannot be used.

• [Tool] \rightarrow [Insert Sample]

Form templates cannot be used.

The setting change steps vary depending on the Excel version.

Change the security settings according to the following steps.

- 'Microsoft Excel 2000'
- 1 Click [Security] from [Macro] under the Excel [Tool] menu.
- 2 Check "Middle" or "Low" on the [Security Level] tab in the [Security] dialog box.

'Microsoft Excel 2002' and 'Microsoft Excel 2003'

- 1 Click [Security] from [Macro] under the Excel [Tool] menu.
- 2 Check "Middle" or "Low" on the [Security Level] tab in the [Security] dialog box.
- 3 Check the [Trust Access to Visual Basic Project] option on the [Trusted Publisher] in the [Security] dialog box.
- "Microsoft Excel 2007' or 'Microsoft Excel 2010'
- 1 'Microsoft Excel 2007': Click the [Office] button and [Excel Options]. 'Microsoft Excel 2010': From the [File] tab, click [Options].
- 2 'Microsoft Excel 2007': Click [Popular] in the [Excel Options] dialog box.
 'Microsoft Excel 2010': From the [Excel Options] dialog box, click [Customize Ribbon].
- 3 'Microsoft Excel 2007': Check the "Show Developer tab in the Ribbon" option.
 'Microsoft Excel 2010': From the [Main Tabs] list, select the [Developer] check box.
- 4 Click [Macro Security] on the [Developer] tab.
- 5 Click [Macro Settings] in the [Trust Center] dialog box.
- 6 Check the [Enable all macros] option under [Macro Settings].

7 Check the [Trust access to the VBA project object model] option.



Combined Cells

Do not set an ACTION area on combined cells.

For example, if you set an ACTION area in the cells as shown below, correct operation cannot be guaranteed.

	A	В	С	D
1	D1 00	D1 01	D1 02	D1 03
2				
3				
4				
5				
6				
7				

Over-pasted ACTION Areas

When you over-paste plural ACTION areas of different size, read/write will be executed in the pasted order.

Writing Data of Excel in the Device/PLCs

When the data type is "Character string", write null characters (NULL) in empty cells in Excel, and in the other cases write "0".

Writing Character String Data

When writing "Character string" data in Excel, format the cell(s) to write data in as "Character string".

Excel Window

If the setting screen is hidden behind the Excel window, the screen and task tray windows will blink and notify the user. Blinking will stop automatically when the setting screen comes forward.

Operation in ACTION area when error occurs

When you actually write/read in all the functions, such as "Device One-Shot" and "Device Logging", and exceed the ACTION area, perform the common operation as follows:

1) When performing a test read/ a test write

Error screen is displayed.

2) When executing ACTION in runtime

It will be recorded as ACTION error in the log viewer of the 'Pro-Server EX'.

In the case of closing the displayed output book

If you have mistakenly closed an output book of Excel Report ACTION, follow these steps to open it again: Dragging and dropping the book to open will make it read-only and the start button etc. invalid.

- 1. Double-click the output book.
- 2. When the following dialog box appears, select "No" to open it.

Microso	oft I	Excel 🛛
į		Report_20060415.xls is already open. Reopening will cause any changes you made to be discarded. Do you want to reopen Report_20060415.xls?
		<u>Yes</u> <u>N</u> o

Receive notification

You cannot set the receive notification which indicates the completion of ACTION.

When setting "Trigger-Source Node"

When setting "Trigger-Source Node" at node in Excel Report action, node type and device are uncertain. Therefore, the device address is displayed in red.But, it is no problem.

Edit the output file

While Excel Report Action is executing, you can not edit the output file.

Therefore, it becomes very difficult to operate Excel at the setting in which the Trigger condition satisfies at a short cycle.Moreover, the following error message is displayed when the Action is executed during editing the output file.



Save the output file Do not use

Do not use multiple Excel form actions to save output files to the same destination.

If you set the same destination for file outputs, Pro-Studio and Pro-Server EX may not be able to run.

About the 1500 row limit for Action Area settings

Exceeding 1500 rows for the Action Area could cause the action to run longer. If you use Device One Shot or Device Logging's text conversion, the action could take even longer.

Restrictions on Copying or Cutting and Pasting the Action Area

When you paste the Action area using Ctrl+C & Ctrl+V or Ctrl+X & Ctrl+V, specify [Target Cell Range] for the copied Action area.

The Action area just after pasting remains the same [Target Cell Range] as that for the original Action area.

	A	В	С	D		
1						
2						
3						
4						
5						
6	_	_		_		
7						

Excel Auto Save Function

The Excel auto save function does not operate due to the Excel restrictions. To save automatically, create the Excel save macro using the following procedure and execute the created save macro by Action.

1 Open a template you want to save automatically using 'Pro-Studio EX'.

Create form using Excel		
		Version 1.22
- Template Designation		
When you use the wiza	e of Excel template file that is the source of form (d, the theme template file is copied to a file with (template, please specify the file name.	
Template File	C:\Documents and Settings\Administrator\De	esktop\template.xl Reference
	Edit Template	
-Output File		
· ·	setting info. The actual output result will be disp	played in the following file.
Folder Name	C:\Documents and Settings\Administrator\De	esktop
File Name	Report_%Y%M%D.xls	Return to Default Settings
Start from Displayed	l State	
Do not save the out (Please use the Sav	put file when ACTION runs. e or Save by Macro of Excel.)	
		OK Cancel

2 Select "Macro" and "Record New Macro" from the "Tools" menu.

lt												
t	Tools	<u>)</u> ata	<u>W</u> indow	<u>H</u> elp	Exc	elActio	on(<u>A</u>)				
Ж	Spel	lling		F7	f*	₽↓	(10	2	» 4	Arial		
	Auto	Corr	ect				_					
3	Share Workbook											
	∐rac	Irack Changes			1							
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П	Prot	ectio	n	•			_					
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	<u>G</u> oa	l Seel	k		⊢							
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	⊆us	tomiz	e		Secur	ity		ı	Г			
	Options				2	⊻isual	Basi	ic Editi	or		Alt+F	11
					00	Micros	soft :	Script	Editor	Alt+Si	hift+F	11

 ${f 3}$ Enter the macro name "Macro1" and click the [OK] button.

Recording the macro starts.

Record Macro	? ×							
Macro name: Macro1								
Shortcut <u>k</u> ey: Ctrl+	Store macro in: This Workbook							
Description: Macro recorded */*/200* by ******r								
	OK Cancel							

4 Select "Save" from the "File" menu.

"Macro1" is recorded in the macro.



 $5\,$ Select "Macro" and "Stop Recording" from the "Tools" menu.

Recording the macro is complete.

jools <u>D</u> ata <u>W</u> indow <u>F</u>	
Spelling F7	🖋 🕺 🛍 🐼 🙄 Arial
Share Workbook	
Protection	•
Online Collaboration	•
Macro	- I ▶ Macros
Customize	Stop Recording
_ Options	2ecurity
×	— 🦰 Visual Basic Editor Alt+F1

6 Select "Execution Sequence List" from the "Excel Action" menu.



7 Create the trigger condition save automatically.

8 Select the created trigger condition and "Excel Operation Function".

Execution Sequence List		_ 🗆 ×								
Execute when Trigger Condition satisfied Execute when Trigger Button clicked Execute from another application										
When Trigger Condition is satisfied, Action is executed.										
New Trigger Condition Please place actions to execute or EXCEL operation commands in order of execution. Edit Insert Clear										
Trigger Condition 1 4	5	6								
CreateForm Excel Operation Function K										
	OK	Cancel								

9 Select "Execute Macro" and enter the macro name "Macro1".

Excel Operation Function								
		New Sheet	0	Print Sheet	Sheet Name she	eet1		
	0	New Book						
	C Show Book C Hide Book C Print Book C Close Excel							
(۲	Execute Macro		Macro1				
	О	Export						
		File Name		Report_%Y	%M%D%n.csv	Default		
	Saving Folder Saving							
			CSV(.c					
Format				Export only the last page except Action Report.				
				C HTML(.	htm)			
				1	ОК	Cancel		

- 10 Click the [OK] button.
- **11** Finish editing the template.
- 12 Save/Reload the setting contents.

According to the created trigger condition, the template is automatically saved.