7 Writing Device/PLC Data in CSV File

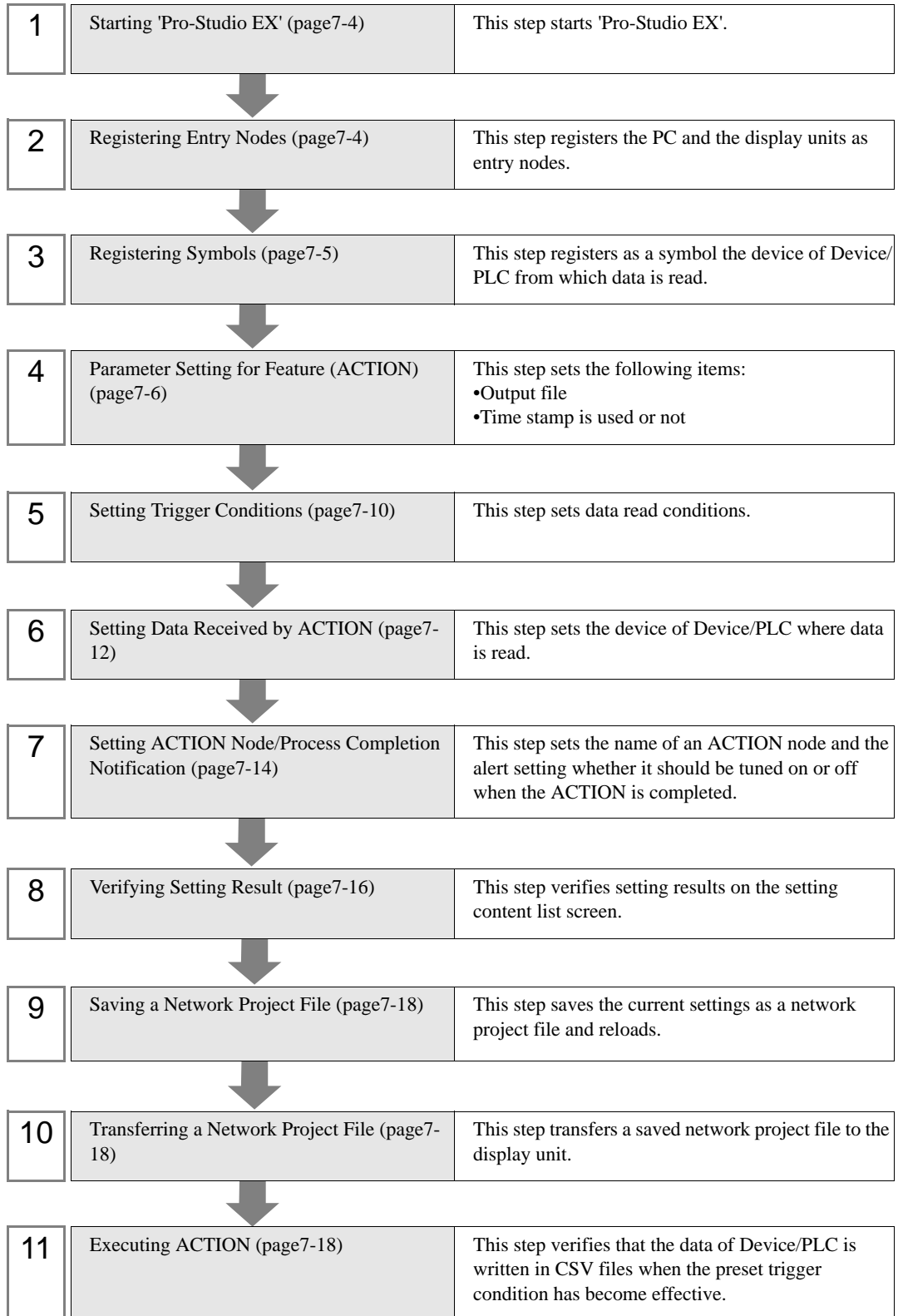# 7.1 Try to Write Device/PLC Data in CSV File

[Action Example]

Write 5 device values of device address (Word device: Address "D50" to "D54") every 10 minutes in CSV file.
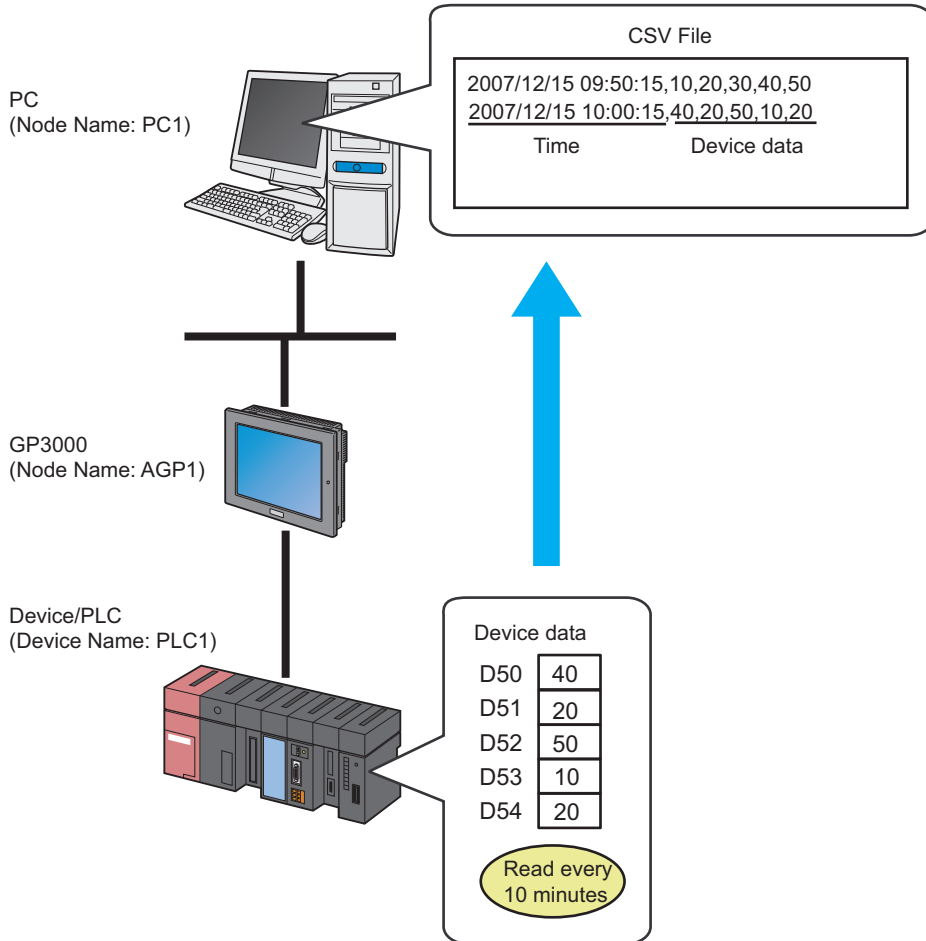
This section describes the setting procedures for executing the above action (ACTION) as an example.

[Setting Procedure]

1	Starting 'Pro-Studio EX' (page7-4)	This step starts 'Pro-Studio EX'.
2	Registering Entry Nodes (page7-4)	This step registers the PC and the display units as entry nodes.
3	Registering Symbols (page7-5)	This step registers as a symbol the device of Device/PLC from which data is read.
4	Parameter Setting for Feature (ACTION) (page7-6)	This step sets the following items: •Output file •Time stamp is used or not
5	Setting Trigger Conditions (page7-10)	This step sets data read conditions.
6	Setting Data Received by ACTION (page7-12)	This step sets the device of Device/PLC where data is read.
7	Setting ACTION Node/Process Completion Notification (page7-14)	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 (page7-16)	This step verifies setting results on the setting content list screen.
9	Saving a Network Project File (page7-18)	This step saves the current settings as a network project file and reloads.
10	Transferring a Network Project File (page7-18)	This step transfers a saved network project file to the display unit.
11	Executing ACTION (page7-18)	This step verifies that the data of Device/PLC is written in CSV files when the preset trigger condition has become effective.

7.1.1　Starting 'Pro-Studio EX'

This step starts 'Pro-Studio EX'.

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

7.1.2　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

Ex.

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

7.1.3 Registering Symbols

This step registers as a symbol the device address of Device/PLC from which data is read.

Refer to "32 Symbol Registration" for details about symbols.

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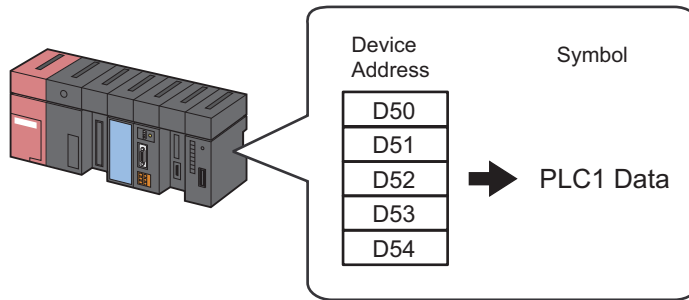
Setting item	Setting content
Symbol Name	PLC1 data
Data Type	16Bit (Signed)
Device address for symbol registration	"D50" to "D54" of Device/PLC (PLC1)
No. of Devices	5

7.1.4   Parameter Setting for Feature (ACTION)

This step makes settings to write data in CSV files. (parameter settings)

Refer to "7.2 Setting Guide" for more details about ACTION parameter.

Ex.
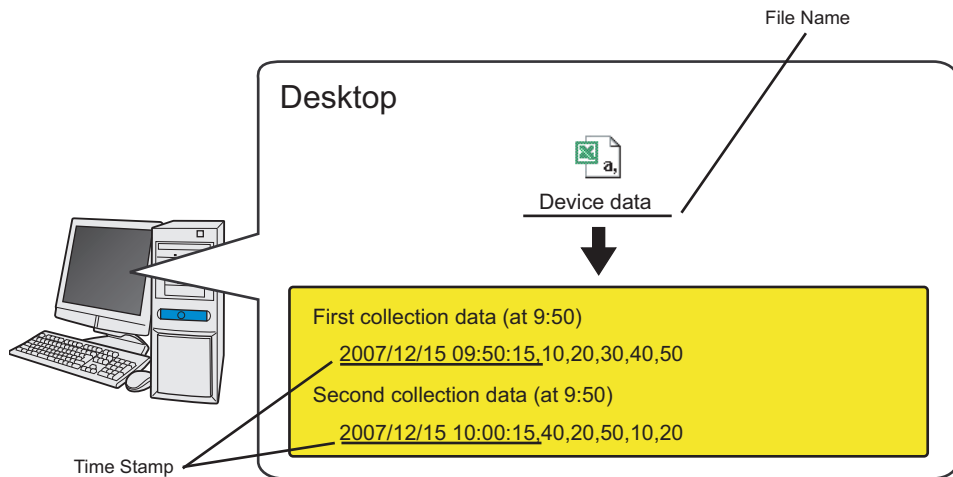
Setting item	Setting content
ACTION Name	CSV Upload
Where to Save File	PC Desktop
Saved File Name	Device data
File Save Method	Append data to Book
Time Stamp	Forward

1 Click the [Feature] icon on the toolbar.
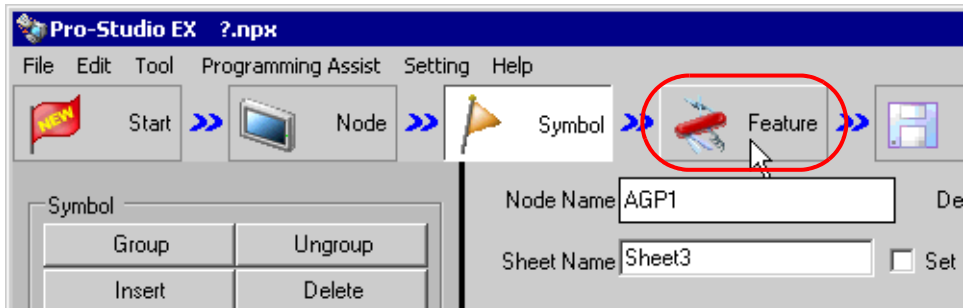
2 Select [ACTION] from the tree display on the left of the screen, then click the [Add] button.
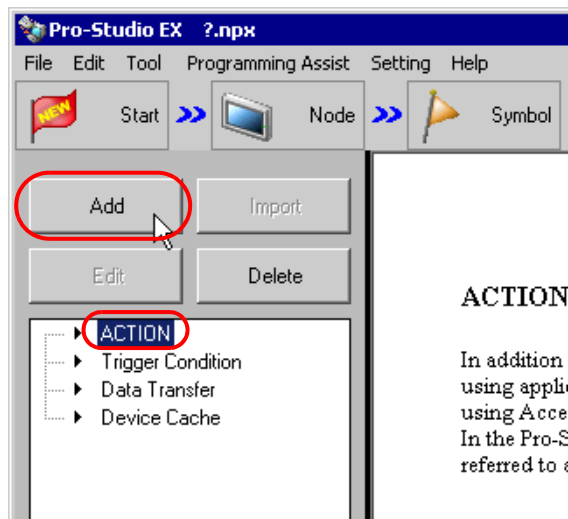
3 Click the [ACTION Type] list button, and select "Writes Data to CSV file.".

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

NOTE
• [ACTION Name] can be an arbitrary name.
• When using [Writes Data to CSV file], regardless of the original data type, 8, 16, and 32-bit data is converted to signed 8, 16, and 32-bit data in the CSV output.
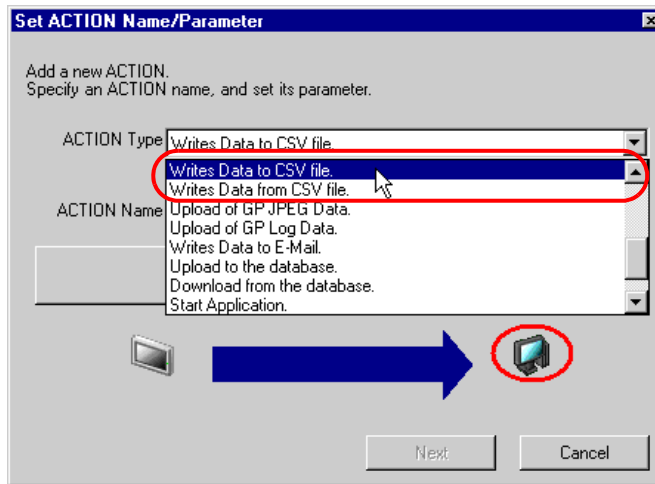
4 Click the [Click here to set the ACTION parameter] button.
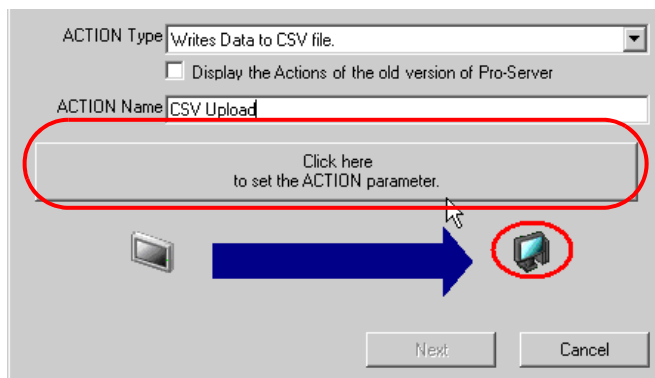
5 Make settings regarding an output file.

Set "Desktop" as a destination to save in the upper list box. Enter "Device Data" as the save file name, and check "Append data to file" as the save format.
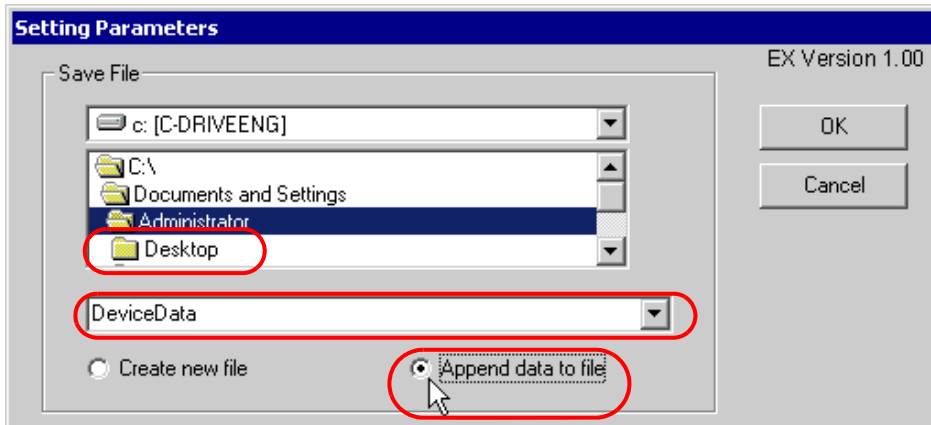

What is %Y%M%D%h%m%s?

%Y%M%D%h%m%s refers to the time when data has been written and this is saved in the format of "Year_Month_Date_Hour/Minute/Second".
(Example) The file name for which data was written at 9:50:15 on Dec, 15, 2007 becomes "2007_12_15_095015".
Refer to "37.1 Restrictions on Names" for more details.

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6 Make settings regarding time stamps.

Check [Attaches a Time Stamp in front of data].
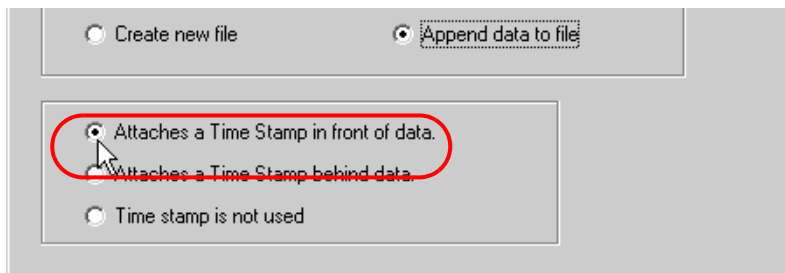
What is a time stamp?

This writes the time in the first or last cell to write data in, referring to the clock of PC.
(Example) If written at 9:50:15 on Dec, 15, 2007, the data will be written in a CSV file in the format of "2007/12/15 09:50:15,data1,data2,data3,..."

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7 Click the [OK] button.

This is the end of the feature (ACTION) settings.

7.1.5 Setting Trigger Conditions

This step sets trigger conditions (every 10 minutes) to read out device data.

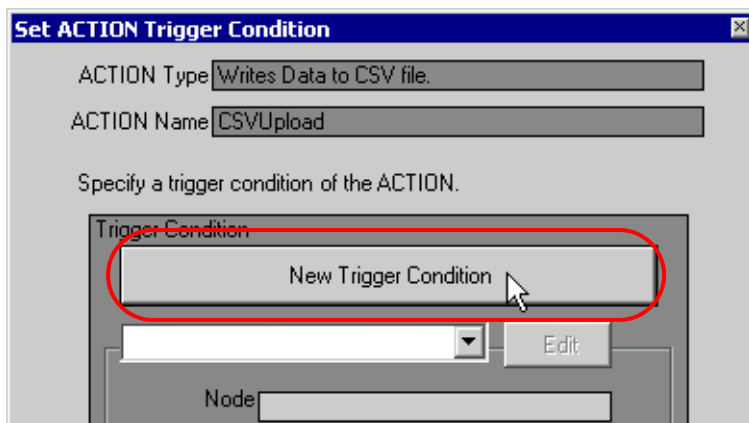Refer to "33 Trigger Conditions" for details about trigger conditions.

Ex.

- Trigger Conditon Name: Collect at constant intervals
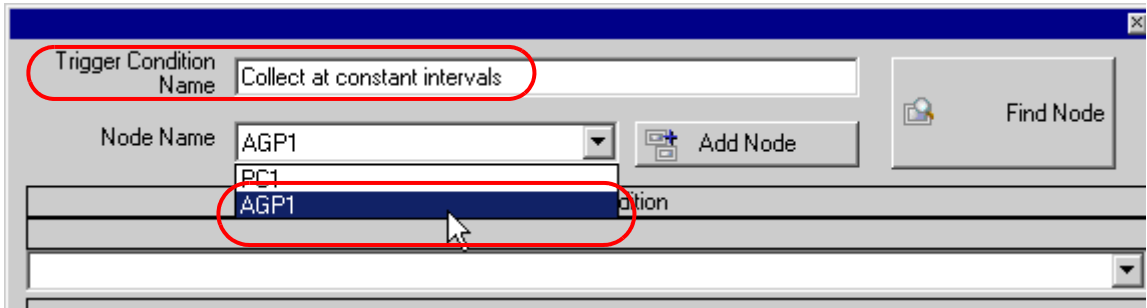- Trigger Condition : 600000ms (10 minutes) cycle

1 On the "Set ACTION Name/Parameter" screen, click the [Next] button.
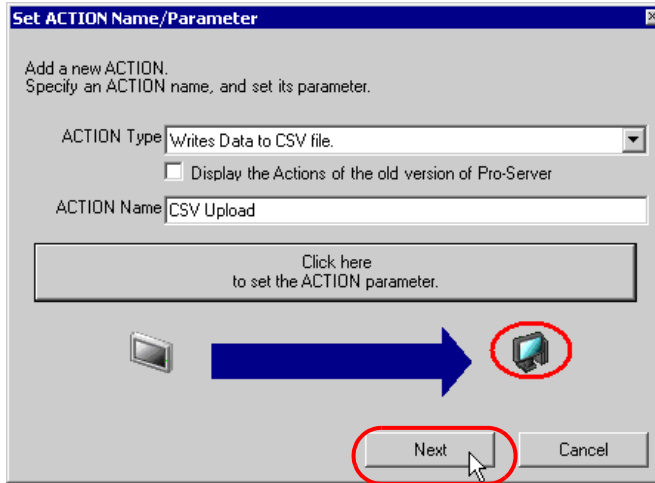
2 Click the [New Trigger Condition] button.

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

NOTE • Here, you are to specify the node having the device to be the trigger condition or having data to transfer.

☞ "33 Trigger Conditions"

4 Click the [Constant Cycle] button in the [Condition 1] tab, and enter "600000ms" (10 minutes). Then, click the [OK] button.
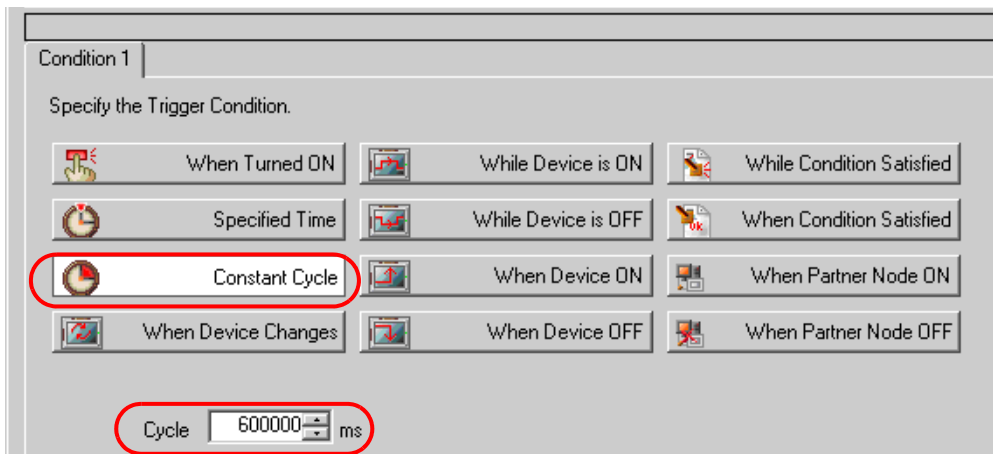
NOTE • You can also set trigger conditions by combining 2 different types of conditions ("And" condition or "Or" condition).

☞ "33 Trigger Conditions"
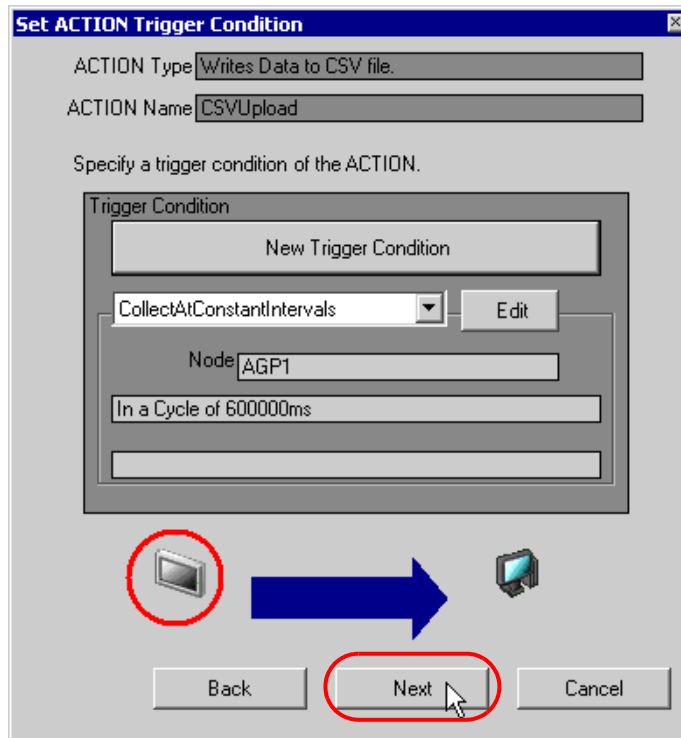
This is the end of trigger condition settings.

7.1.6   Setting Data Received by ACTION
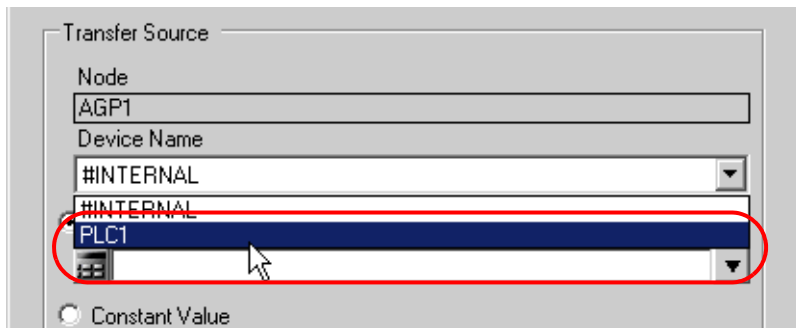
This step sets data to transfer in ACTION.

/// Ex. /

- Device Name as Transfer Source: PLC1
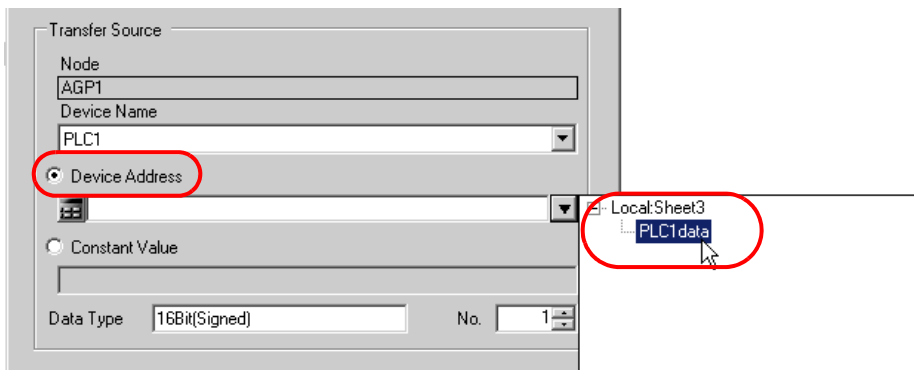- Transfer Source Device: PLC1 symbol "PLC1 data"

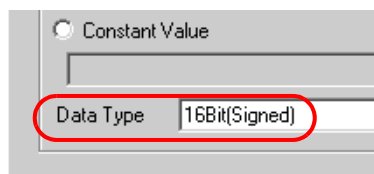1 On the "Set ACTION Trigger Condition" screen, click the [Next] button.

2 Click the list button of [Device Name] and select "PLC1" for the Device/PLC reading data from.

3 Click [Device Address] and then the list button to select "PLC1 data" for the symbol name of the Device/PLC "PLC1" reading data from.

[Data Type] automatically appears after selection, too.

NOTE • You can transfer any constant number instead of device values.

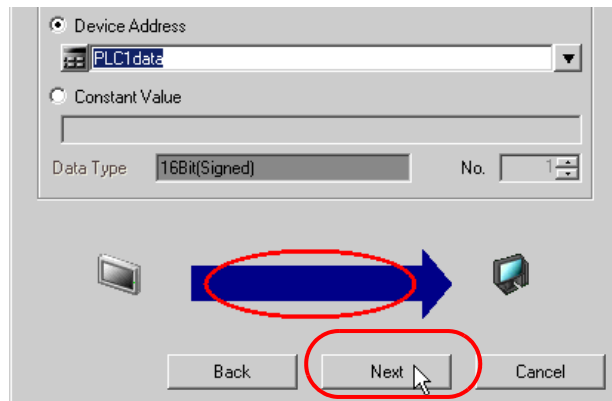This is the end of the setting of data received by ACTION.

7.1.7   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.
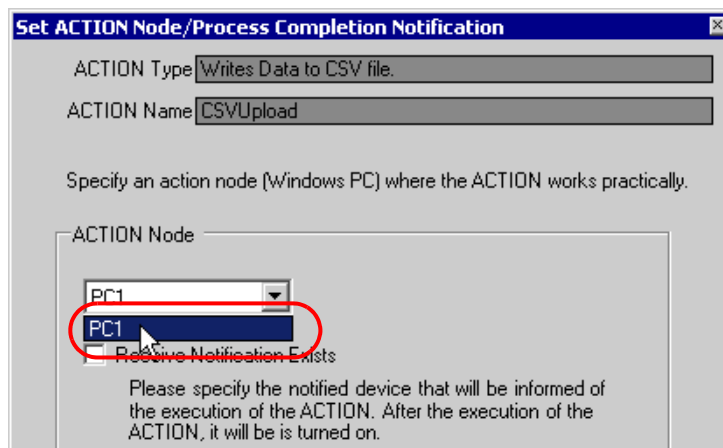
Ex.

- ACTION Node   : PC1
- Receive Notification: OFF

1 On the "Data settings to be received by ACTION" screen, click the [Next] button.

2 Click the list button of [ACTION Node] and select "PC1" as a node where ACTION operates. Also, clear the check if [Receive Notification Exists] has been checked.

NOTE
- When "Receive Notification Exists" is turned on, the specified bit device will be turned on when the ACTION is completed. This can be used as a trigger condition (trigger) of the subsequent ACTION when you want to execute two or more ACTIONs sequentially.

) "33 Trigger Conditions"

3 Click the [Complete] button.

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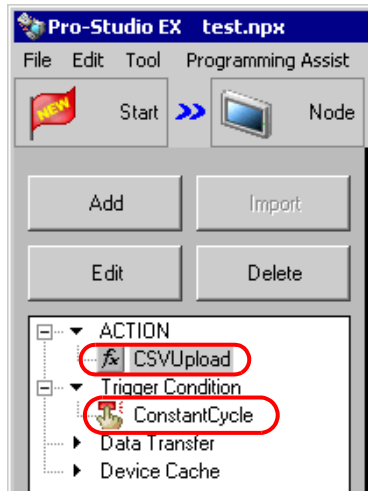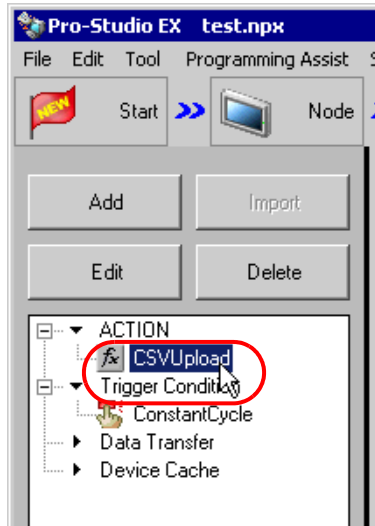

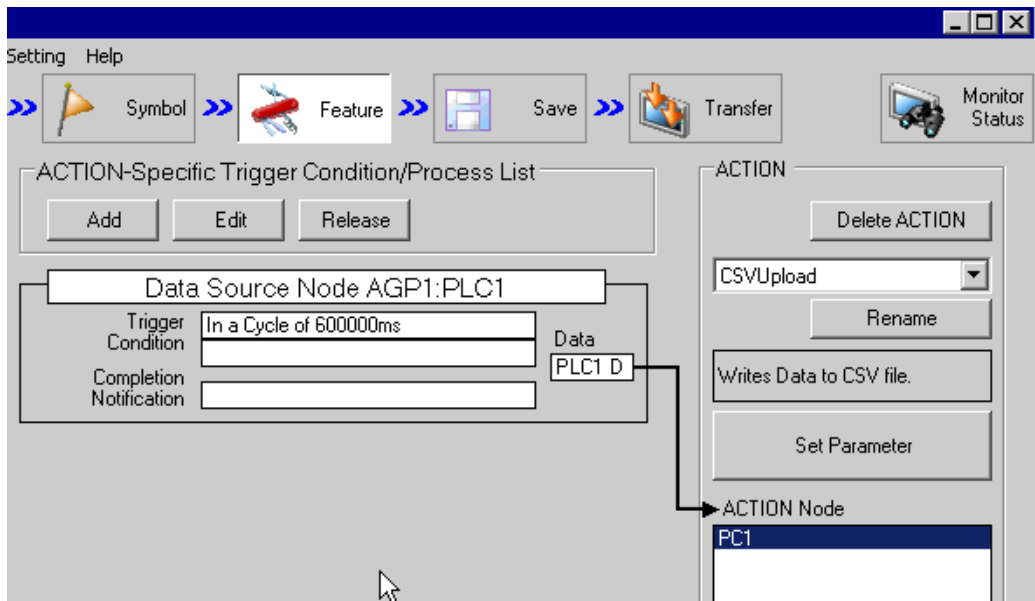This is the end of the settings of the ACTION node and process completion notification.

7.1.8   Verifying Setting Result

This step verifies setting results on the setting content list screen.
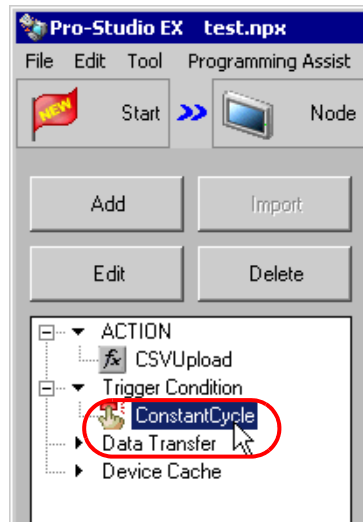
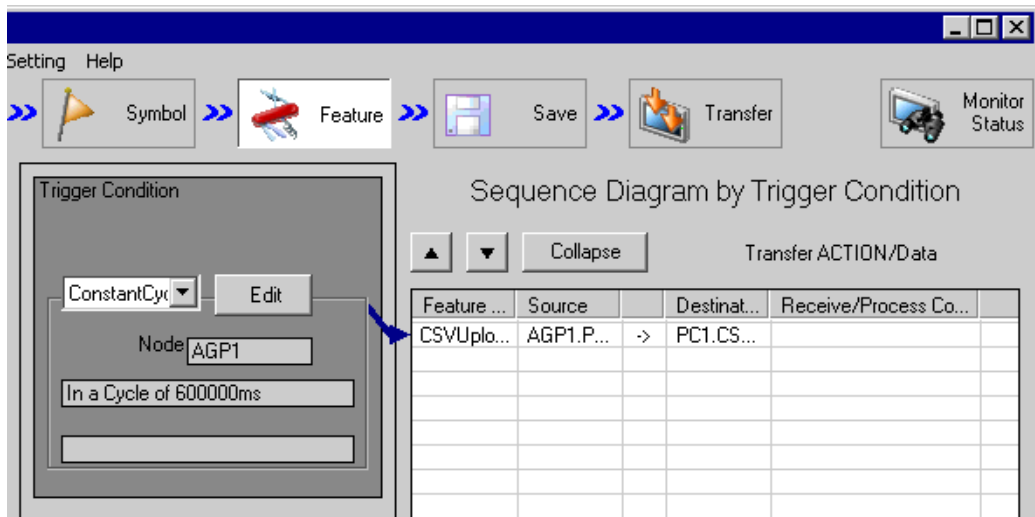1 Select the ACTION name "CSV Upload" from the tree display on the left of the screen.

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

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

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

This is the end of the verification of the settings.

7.1.9　　　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.

IMPORTANT
- • '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.

Ex.

- • Path of network project file　　　　　　　　　: Desktop\CSV_upload.npx
- • Title　　　　　　　　　　　　　　　　　　: CSV upload action

7.1.10　　　Transferring a Network Project File

This step transfers a saved network project file 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.

7.1.11　　　Executing ACTION

Confirm that ACTION activates at every 10 minute interval, and at the first collection creates the CSV file (File Name: "device data.csv") on the desktop, and then writes 5 device data into it. Also, confirm device data is additionally written in 10 minute cycle.

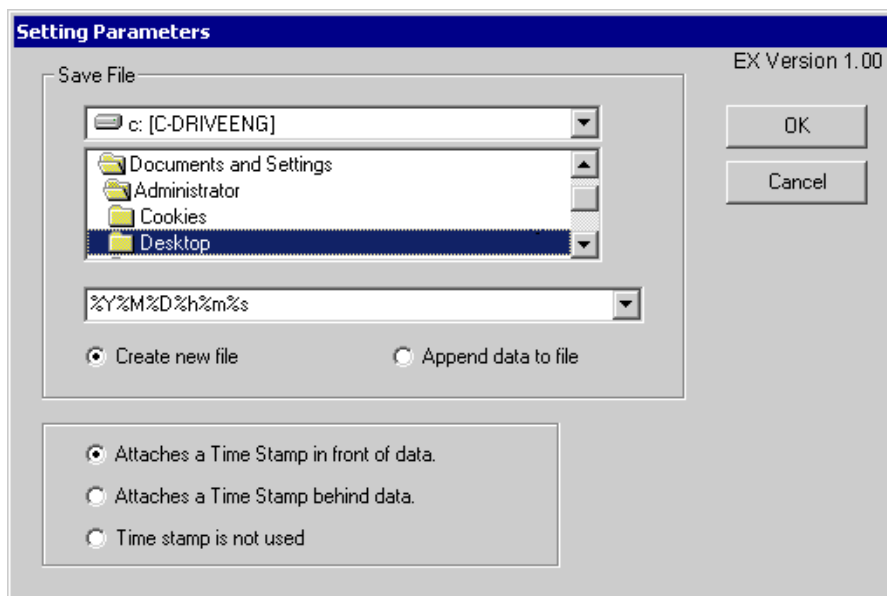|	A	B	C	D	E	F	G
1	2007/12/15 9:50	10	20	30	40	50	
2	2007/12/15 10:00	40	20	50	10	20	
3	2007/12/15 10:10	20	10	40	50	30	
4							
5							
6							

This is the end of the explanation of this ACTION.

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

7.2 Setting Guide

This section explains how to set the parameters of ACTION.

Setting item		Setting content
Save File	Where to Save File	Selects the folder to save a CSV file to create. C drive (C:) folder is to appear for initial setting. To change the drive to display, click the list button to select new one.
	Saved File Name	Sets the file name to save. "Y%M%D%h%m%s" is to appear for initial setting. If you do not change the file name, time data of PC is to set for "%" position. **NOTE** • By designating a macro code for the file name to save, you can set the file name as a node name or device data. ☞ "37.1 Restrictions on Names"

Setting item		Setting content

Save File	Create new file	Check this option to always write the collected data in a new file.
		 In this case, put the saved file name using such macro as "%Y%M%D%h%m%s" (time) to be different from the one on the previously collected point.
		 If the file name is same as the one on the previously collected point, the new file overwrites the previous file, which results that no history remains.
		 Refer to "37.1 Restrictions on Names" for more details on macros.
		
		 (Example)
		 ----- First collection (Collected at 9:50:15 on Dec. 15, 2007) -----
		 • File name (Year, month, day, and time are separated inbetween with underbars.)
		   2007_12_15_095015
		 • Data format for collecting
		   2007/12/15 09:50:15,10,20,30,40,50
		 ----- Second collection (Collected at 10:00:15 on Dec. 15, 2007) -----
		 • File name
		   2007_12_15_100015
		 • Data format for collecting
		   2007/12/15 10:00:15,40,20,50,10,20

	Append data to file	Check this option to add the collected data in the specified file.
		 In this case, put the save file name to be same as the previous one.
		 If the file name is different from the one on the previously collected point, the current data is written in a new file.
		
		 (Example)
		 • File name
		   2007_12_15_095015
		 • Data format for collecting (Displayed on a newer line for the second and after.)
		   2007/12/15 09:50:15,10,20,30,40,50
		   2007/12/15 10:00:15,40,20,50,10,20
		             •
		             •

Attaches a Time Stamp in front of data		Attaches the time of transfer at the head of transferred data. (Example) If transferred at 9:50:15 on Dec, 15, 2007, the data will be written in a CSV file in the format of "2007/12/15 09:50:15,data1,data2,data3,...".
Attaches a Time Stamp behind data		Attaches the time of transfer behind transferred data. (Example) If transferred at 9:50:15 on Dec, 15, 2007, the data will be written in a CSV file in the format of "data1, data2, data3,..., 2007/12/15 09:50:15".
Time Stamp is not used		Not add time information