7 Writing Device/PLC Data in CSV File

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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'	This step starts 'Pro-Studio EX'.
2	Registering Entry Nodes	This step registers the PC and the GPs as entry nodes.
3	Registering Symbols	This step registers as a symbol the device of Device/ PLC from which data is read.
4	Parameter Setting for Feature (ACTION)	This step sets the following items: •Output file •Time stamp is used or not
5	Setting Trigger Conditions	This step sets data read conditions.
6	Setting Data Received by ACTION	This step sets the device of Device/PLC where data is read.
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.
8	Verifying Setting Result	This step verifies setting results on the setting content list screen.
9	Saving a Network Project File	This step saves the current settings as a network project file and reloads.
10	Transferring a Network Project File	This step transfers a saved network project file to the GP.
11	Executing ACTION	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 GP connected with network as nodes. Refer to "31 Node Registration" for details about entry nodes.





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	
GP	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.





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.



 ${\bf 3}$ 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".

Set ACTION Name/Parameter	×
Add a new ACTION. Specify an ACTION name, and set its parameter.	
ACTION Type Writes Data to CSV file.	-
Writes Data to CSV file. Writes Data from CSV file. ACTION Name Upload of GP Log Data. Upload of GP Log Data. Writes Data to E-Mail. Upload to the database. Download from the database. Start Application.	
Next	ı

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.

Setting Parameters	
- Save File	EX Version 1.00
C: [C-DRIVEENG]	OK
C:\ C:\ Documents and Settings	Cancel
Administrator	
DeviceData	
C Create new file	

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.

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,...

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.

Set ACTION Name/Parameter	×
Add a new ACTION. Specify an ACTION name, and set its parameter.	
ACTION Type Writes Data to CSV file.	•
Display the Actions of the old version of Pro-Server	
ACTION Name CSV Upload	
-	_
Click here to set the ACTION parameter.	
Next Cancel	

2 Click the [New Trigger Condition] button.

Set ACTION Trigger Condition	×
ACTION Type Writes Data to CSV file.	
ACTION Name CSVUpload	
Specify a trigger condition of the ACTION.	
Trigger Condition	
New Trigger Condition	
New Trigger Condition	
New Trigger Condition	

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.

Trigger Condition Name Collect at constant intervals Node Name AGP1 AGP1 Add Node				×
Node Name AGP1 Add Node PC1	Trigger Condition Name	Collect at constant intervals	FQ.	Find Made
AGP1	Node Name	AGP1 Add Node		Find Node
		AGP1 dition		
·	· · · · · · · · · · · · · · · · · · ·			
				•
	[

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.

Condition 1					
Specify th	e Trigger Condition.				
ĸ	When Turned ON		While Device is ON		While Condition Satisfied
Ġ	Specified Time	F	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
(C 1 600000				
		\$			

• 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.

Set ACTION Trigger Condition 🛛 🛛 🛛
ACTION Type Writes Data to CSV file.
ACTION Name CSVUpload
Specify a trigger condition of the ACTION.
Trigger Condition
New Trigger Condition
CollectAtConstantIntervals Edit
Node AGP1
In a Cycle of 600000ms
Back Next Cancel

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

Transfer Source	
Node	
AGP1	
Device Name	
#INTERNAL	•
HINTERNAL	
PLC1	
	▼
C Constant Value	

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.

Transfer Sou	irce			1		
Node		 				
Device Na	me					
PLC1			•			
O Device A	ddress					
				Local:Sheet3		
C Constant	Value)	
Data Type	16Bit(Signed)	No.	1			

[Data Type] automatically appears after selection, too.

C Constant V	Value
) Data Type	16Bit(Signed)

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.



- ACTION Node : PC1
- Receive Notification: OFF

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

C Device Address
PLC1data
C Constant Value
Data Type 16Bit(Signed) No. 1
Back Next Cancel

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.

Set ACTION Node/Process Completion Notification	×
ACTION Type Writes Data to CSV file.	
ACTION Name CSVUpload	
Specify an action node (Windows PC) where the ACTION works practical	y.
PC1 PC1 Reference 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.	

• 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"

$\mathbf{3}$ 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.

🂱 P	ro-St	udio E	X t	est.npx		
File	Edit	Tool	Pro	grammin	ig Assist	Se
	1	Start	>>		Node	>
	Ad	d		Imp	ort	l
Edit				Dele	ete	l
ACTION ACTION Trigger Co Const Data Trar Device Co			l Condi stanti ansfe Cach	ad tiky Cycle r e		

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

Setting Help	
>> ≽ Symbol >> 촩 Feature >> 📄 Save >> 🆄	Transfer Monitor Status
ACTION-Specific Trigger Condition/Process List	ACTION
Add Edit Release	Delete ACTION
Data Source Node AGP1:PLC1	CSVUpload 💌
Trigger In a Cycle of 600000ms Data	Rename
Completion PLC1 D	Writes Data to CSV file.
	Set Parameter
L	ACTION Node
	PC1
\sim	

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.

					l ×
Setting Help					
🍑 눧 Symbol 🍑 襓 Feature	» 📄	Save ン 🚺	V Transfe	r 😽 🦉	onitor Status
Trigger Condition	Seq	uence Diag	gram by Ti	rigger Condition	
		Collapse	Tra	ansfer ACTION/Data	
ConstantCy(Edit	Feature	Source	Destinat	Receive/Process Co	
	CSVUplo	AGP1.P →	PC1.CS		
					_
In a Cycle of 600000ms					

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.

- '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	В	С	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 Parameters	
Save File	EX Version 1.00
	OK
Documents and Settings	Cancel
%Y%M%D%h%m%s	
Create new file C Append data to file	
Attaches a Time Stamp in front of data.	
C Attaches a Time Stamp behind data.	
C Time stamp is not used	

Setting item		Setting content
	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.
Save File	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