

Programmable Terminal NA-series

# Practices Guide

## Importing External Device Variables

### Application

NA5-15W□□□□

NA5-12W□□□□

NA5-9W□□□□

NA5-7W□□□□



Practices  
Guide

## ■ Introduction

This guide provides reference information for the use of external devices with the NA. It does not provide safety information.

Be sure to obtain the NA-series Programmable Terminal User's Manuals, read and understand the safety points and other information required for use, and test sufficiently before actually using the equipment.

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# 1 Related Manuals

The following manuals are related to this manual.

Cat. No.	Model	Manual name
W473	CJ2H-CPU6□-EIP CJ2H-CPU6□ CJ2M-CPU□□-	SYSMAC CJ Series CJ2 CPU Unit Software User's Manual
W501	NX701-□□□□ NJ501-□□□□ NJ301-□□□□ NJ101-□□□□	NJ/NX-series CPU Unit Software User's Manual
W506	NX701-□□□□ NJ501-□□□□ NJ301-□□□□ NJ101-□□□□	NJ/NX-series CPU Unit Built-in EtherNet/IP™ Port User's Manual
W504	SYSMAC-SE2□□□	Sysmac Studio Version 1 Operation Manual
W502	NX701-□□□□ NJ501-□□□□ NJ301-□□□□ NJ101-□□□□	NJ/NX-series Instructions Reference Manual
V118	NA5-15W□□□□ NA5-12W□□□□ NA5-9W□□□□ NA5-7W□□□□	NA-series Programmable Terminal Software User's Manual
V119	NA5-15W□□□□ NA5-12W□□□□ NA5-9W□□□□ NA5-7W□□□□	NA-series Programmable Terminal Device Connection User's Manual
V120	NA5-15W□□□□ NA5-12W□□□□ NA5-9W□□□□ NA5-7W□□□□	NA-series Programmable Terminal Startup Guide

# 2 Precautions

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- (1) When building an actual system, check the specifications of the component devices of the system, use within the ratings and specified performance, and implement safety measures such as safety circuits to minimize the possibility of an accident.
- (2) For safe use of the system, obtain the manuals of the component devices of the system and check the information in each manual, including safety precautions, precautions for safe use.
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Special information in this document is classified as follows:



## Precautions for Safe Use

Indicates precautions on what to do and what not to do to ensure safe usage of the product.



## Precautions for Correct Use

Indicates precautions on what to do and what not to do to ensure proper operation and performance.



## Additional Information

Additional information to read as required.

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# 3 Introduction

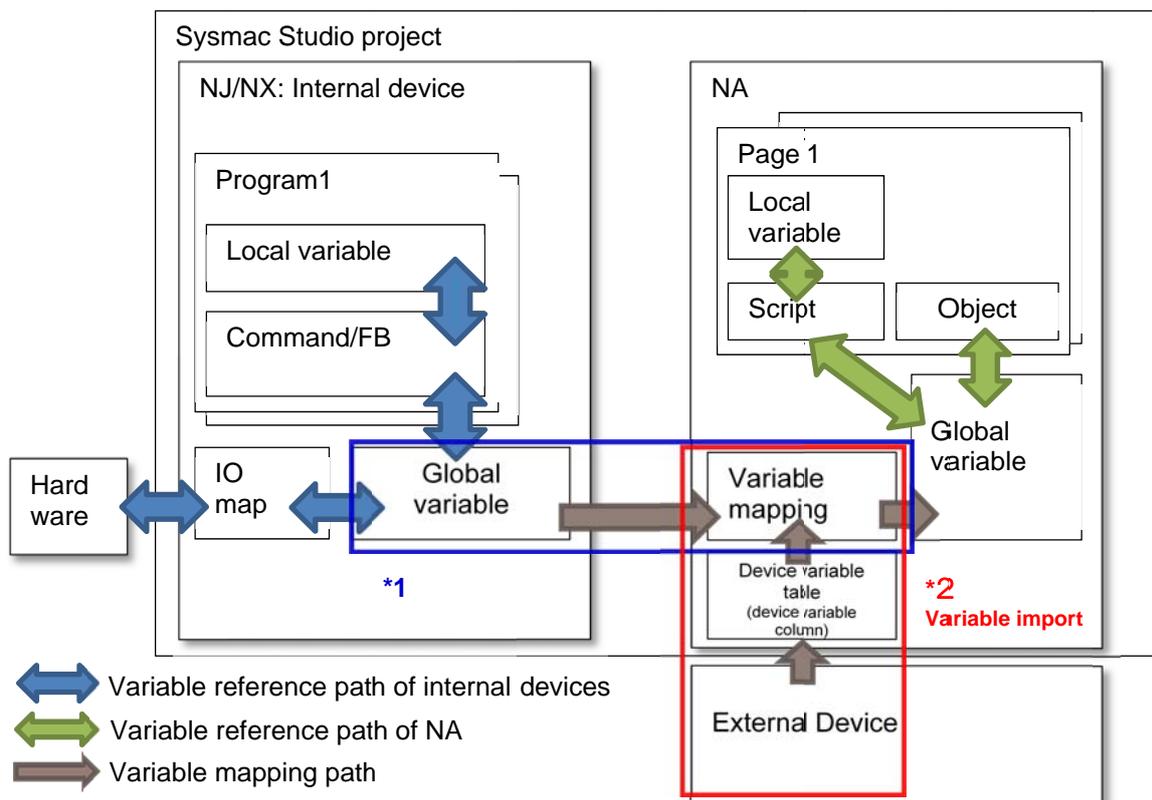
The NA series has the ability to combine Sysmac devices and manage them in one project file. In addition, other devices including the Sysmac products and CJ series in other project files can be communicated by importing the variables or addresses. Omron is considering making the NA series manageable with controllers from other companies in the future. Devices in other project files are registered and managed as "External Device".

This guide describes how to import settings from the connected devices to perform communication between the NA and the CJ or NJ/NX series that is set as External Device.

## 3-1 Concept of Variable Import

The Sysmac Studio provides an integrated development environment to Sysmac devices. When the NA and NJ/NX series are managed in one project, the NJ/NX variable information can be shared in the project. (\*1)

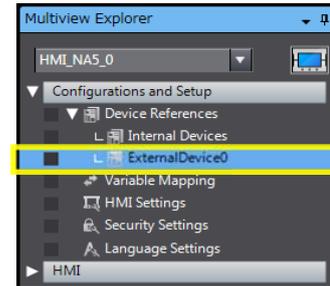
Even if a Controller that you want to refer is not in the same project, the variable information still can be shared by being recognized the Controller as External Device and capturing the variable information. (\*2)



The "variable import" is a process that loads the variable information of the External Device into the project in the Sysmac Studio. After importing, data can be read from or written to the External Device by assigning the external device variables to the NA variables in the variable mapping setting.

# 4 External Device Tab Page in Sysmac Studio

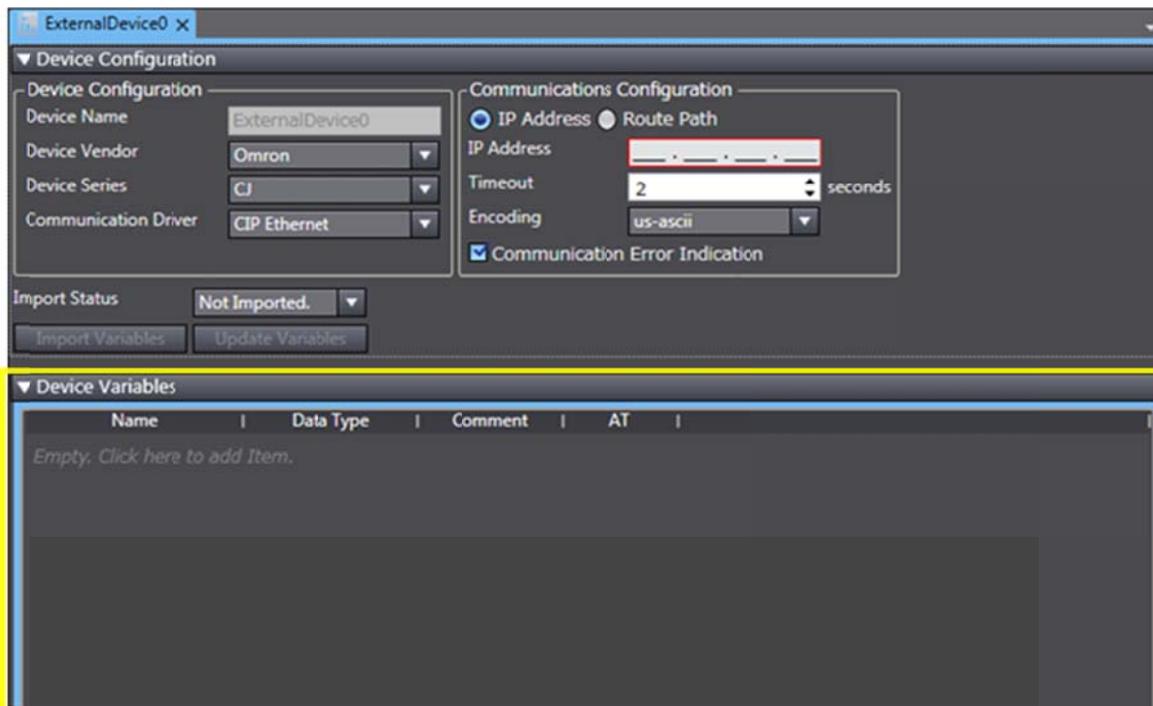
The External Devices are registered under “Configurations and Setup” - “Device References” in the Multiview Explorer of the Sysmac Studio.



After devices are registered, the following tab page appears for each device.

The items displayed in the “Device Configuration” and “Communications Configuration” Columns depend on the type of connected device.

For the details, refer to the relevant section for connecting the devices in this guide.



The “Name”, “Data Type”, “Comment”, and “AT” are shown in the “Device Variables” Column, from left to right.

Each item is explained below.

- Name

A name of the variable registered in the connected External Device.

You can set a variable name by importing the variables or adding variables.

If no variable name is registered, the communication fails between the NA and External Device.

- Data Type

A variable data type. Since this information is used to determine a data size, you must enter the data type even the address is already assigned to “AT”.

- Comment

A comment to variable. You do not necessarily have to enter a comment for the control.

- AT

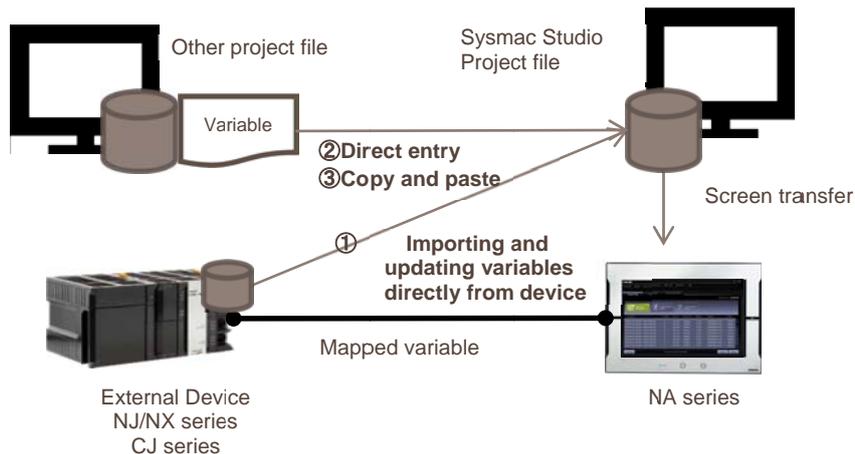
The information to be referred when the variable is assigned to the physical addresses.

The memory assigned to “AT” is accessed.

## 4-1 How to Import External Device Variables

There are the following three methods to import the variable information of the External Device with the Sysmac Studio version 1.13.

- 1) Importing and updating variables directly from device
- 2) Direct entry
- 3) Copy and paste



- **Importing and updating variables directly from device**

Variables can be imported directly from the External Device by connecting the device to the computer with an Ethernet cable. Since the CIP protocol is used to query the tag variables to the NJ/NX in this method, the variables are imported based on the CIP rules. This method is applied to the OMRON devices that support CIP.

The "Update Variables" function imports only the differences in the changed variable information of the External Device.

- **Direct entry**

The user can directly enter the variable information in the "Device Variables" Column of the Sysmac Studio. Data Type and AT must be entered accurately according to the defined notation rules.

- **Copy and paste**

The variable information can be copied from Excel, notepad or other text editor and pasted to the "Device Variables" Column of the Sysmac Studio. This method allows the user to edit a large amount of variables easier than using the direct entry.

- ① **Copying from Excel**

Describe one item per cell. The items must be entered in the same order as the "Device Variables" Column of the Sysmac Studio, as shown below.

Name (variable)	Data Type	Comment	Address/Value (AT)
Test1	BOOL	abc	E0_0000.01
Test2	DINT	def	0001

Except the heading lines in the Excel, all of the variable information must be copied and pasted to the "Device Variables" Column of the Sysmac Studio.

② Copying from notepad or other text editor

The variable information can be copied from notepad, word file, or other text editor and pasted to the "Device Variables" Column of the Sysmac Studio. The items can be separated by the [Tab] key on the keyboard. The items must be described in the same order as the "(1)

Copying from Excel".

```
test1 → EOOL → → ↵  
test2 → EOOL → → ↵  
test3 → EOOL → → ↵
```



**Additional Information**

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There is no restriction on the number of variables to import, but there is limit to the number of variables to assign to the NA global variables in the variable mapping; 20,000 mapped variables per External Device and 35,000 variables for the entire project.

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**Additional Information**

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When multiple NA devices are registered in one project, the External Device can be referred from the multiple NA devices.

In this case, the variables must be imported by all of the multiple NA devices in the external device setting.

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**Additional Information**

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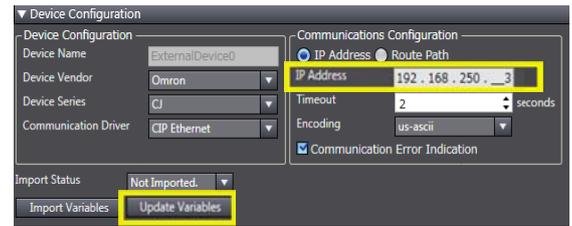
When entering a variable name in the "Device Variables" Column of the Sysmac Studio, the prohibited character is in accordance with the prohibited character of the External Device. The prohibited character for mapped variables is the same as for the NA global variables.

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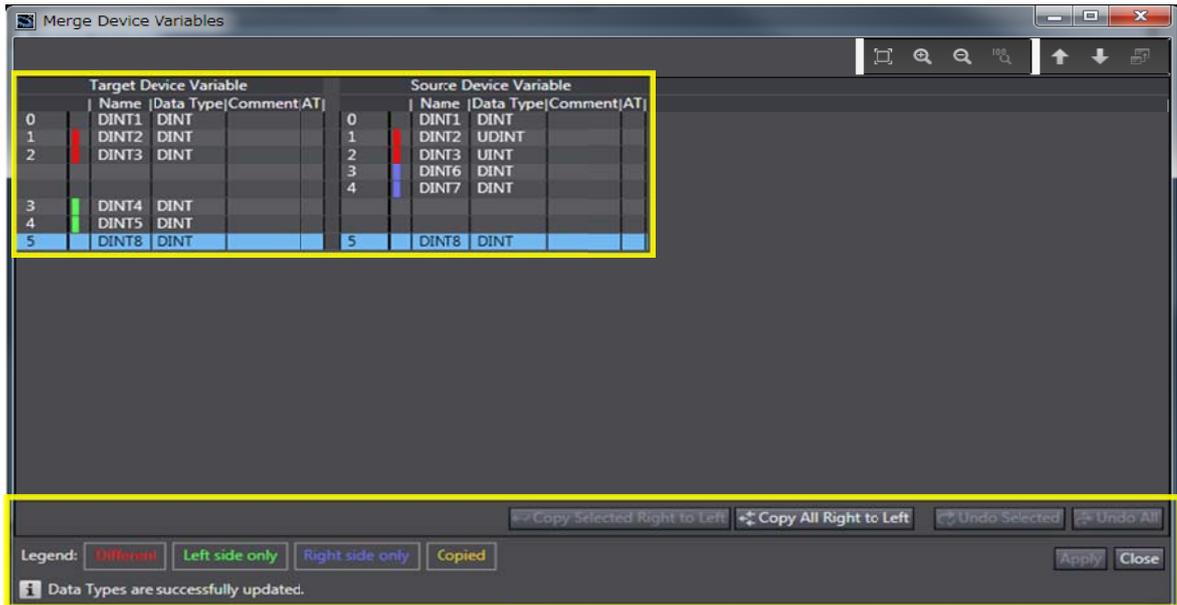
## 4-2 The Merge Device Variables Dialog Box of Sysmac Studio

Entering the IP address of the External Device enables the “Update Variables” Button of Import Status.

The following dialog box appears when the “Update Variables” Button is pressed.



The same items are displayed on the screen regardless of devices. You can use the same procedure regardless of devices.



On the screen, the variable in the External Device is compared with the value in the “Device Variables” Column of the Sysmac Studio, and the differences can be applied to the “Device Variables” Column from the External Device. But a reverse operation is impossible (i.e., unable to change the variable information in the Sysmac Studio and apply the differences to the External Device).

The following items are displayed on the screen.

- Target Device Variable

A list of the variables registered in the “Device Variables” Column of the Sysmac Studio. Next to each number, the comparison result of the variables between the target external device and the source external device is displayed in a color that is shown in the legend.

- Source Device Variable

A list of the variables stored in the External Device.

Next to each number, the comparison result of the variables between the target external device and the source external device is displayed in a color that is shown in the legend.

- Legend

The results of the comparison are displayed in the following colours.

- Red: The name in the target and source devices are the same, but the data types are different.
- Green: The variable exists in only the target device (Sysmac Studio). This disappears after the difference is copied and applied.
- Blue: The variable exists in only the source device (External Device). The difference in variables can be copied to the Sysmac Studio.
- Yellow: The copied variables. In this status, the variables have not been copied to the "Device Variables" Column of the Sysmac Studio. Therefore, the copied variables are not applied to the "Device Variables" Column even after the "Merge Device Variable" Dialog Box is closed. You need to click the "Apply" Button to apply the results of copying to the "Device Variables" Column.

- "Copy Selected Right to Left" Button

This button merges the selected lines of variables from the source device (External Device) to the target device (Sysmac Studio).

Even this button is simply clicked, the results of copying is not applied to the "Device Variables" Column. To apply the results of copying, you need to click the "Apply" Button.

- "Copy All Right to Left" Button

This button merges all of the differences between the two devices from the source device (External Device) to the target device (Sysmac Studio). Even this button is simply clicked, the results of copying is not applied to the "Device Variables" Column. To apply the results of copying, you need to click the "Apply" Button.

- "Undo Selected" Button

This button undoes the selected copy operation. You can undo the copy operations only before clicking the "Apply" Button.

- "Undo All" Button

This button undoes all of the copy operations before clicking the "Apply" Button.

- "Apply" Button

This button finalizes the copied variables and applies the result to the "Device Variables" Column. After the result is applied, the colors of "legend" disappear and the variables in the "Target Device Variable" and "Source Device Variable" Fields become the same.

## 4-3 Supported Devices and Applicable Variable Import Methods

There are the following three methods to import variable information of the External Device. Applicable methods and restrictions depend on the type of External Device.

The import methods for each External Device are as follows.

Method \ Device type	Importing and updating variables directly from device (note 1)	Direct entry (note 2)	Copy and paste( note 2)
NJ/NX	Supported	Supported	Supported
CJ-CIP	Supported	Supported	Supported
CJ-FINS	Not supported	Supported (note 3)	Supported (note 3)

Note 1)

The following table shows whether “Importing and updating variables directly from device” is supported by each variable.

Device type \ Variable	System-defined variables	User-defined variables			
		Not published	Publish Only	Input	Output
NJ/NX	Supported	Not supported	Supported	Supported	Supported
CJ-CIP	Not supported (note 4)	Not supported	Supported	Supported	Supported

Note 2)

A building error occurs if a data type that you entered is not within the “IntelliSense” scope. For this reason, you cannot neither define structures nor enter the external device variables in the “Data Type” Field.

Note 3)

For the CJ-FINS, AT (address) must be entered.

For information on how to enter AT (address), refer to the “Address/Value” Field of the CX-Programmer variable table.

Note 4)

CJ system-defined variables don’t have the “Publish” setting. Also, the user can not add this setting to the variables. For this reason, the CJ system-defined variables cannot be imported by any variable import method.



### Additional Information

When importing the NJ/NX variables, the user-defined variables and the system-defined variables are imported together.

The CJ-CIP system-defined variables cannot be imported since this variable cannot be set as network variable.

## 4-4 Import Information of External Device Variable Table

To import the external device variable and the physical address information and use them in the NA, you must define the data type regardless of the import method.

The following table shows whether the “Device Variables” Column of the Sysmac Studio must be entered.

Device type	Name (variable)	Data Type	Comment	Address/Value (AT)
NJ/NX	Required	Required	Optional	Not required
CJ-CIP	Required	Required	Optional	Not required
CJ-FINS	Required	Required	Optional	Required



#### Additional Information

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A variable name for the CJ-FINS must be entered. If the CJ project file is designed only with physical address, you must define the variable to the physical address to be imported to the NA.

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## 4-5 Data Type

The NA uses the Visual Basic data type. The data name and type are different from IE61131 that is used in the CJ or NJ/NX series.

The "Device Variables" Column of the Sysmac Studio must be entered in the IE61131 data type, as same as the CJ or NJ/NX.

When using the "importing and updating variables directly from device" method, the IE61131 data type set by the External Device is automatically loaded during the import. When using the "direct entry" or "copy and paste" method, the user must manually enter in the IE61131 data type. The Visual Basic data type can be assigned in the "variable mapping" setting.

When importing variables with the NJ, NX, or CJ-CIP, you don't need to be aware of the data length. When importing the variable assigned to the physical addresses with the CJ-FINS, if the data type is declared with the Sysmac Studio, the data is loaded for the data type length, starting from the beginning of the physical address given to AT.



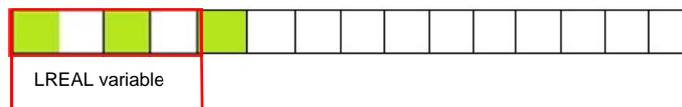
### Additional Information

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The range of physical addresses to be referred depends on the data type.

Example) For a LREAL data set to DM0000, the addresses from DM0000 to DM0003 are used since the LREAL variable is 4-word (eight bytes).

Image of assigned address



### Additional Information

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If two variables of different data types are set to the same address, they are normally operated respectively. In this case, the two variables are shared. If any change is made to the one, the other changes accordingly.

Example) When address is 11, DINT variable is 11, WORD variable is B.

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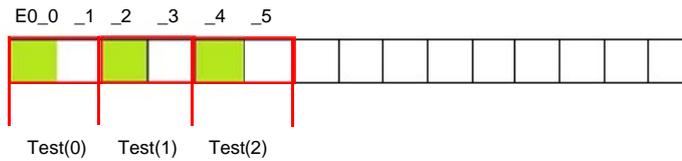
If the variable is an array, consecutive addresses are assigned starting from the entered address. The interval of the assigned address depends on the data type of the array variable.

Example) For a DINT variable when the variable name is "Test", number of array is "3", and set address is "E0\_0000".

In this case, the address of array number 0 is "E0\_0000", number 1 is "E0\_0002", and number 2 is "E0\_0004".

---

Image of assigned address



For a BOOL variable, one array is in units of one bit. When the number of array is "3" and the address is set to "E0\_0000", the address of array number 0 is "E0\_0000.00", number 1 is "E0\_0000.01", and number 2 is "E0\_0000.02".

## 4-6 Notation for AT (Physical Addresses)

This section describes the notation for AT that is required to import variables to the CJ-FINS External Devices using the "direct entry" or "copy and paste" method.

To enter AT (address), refer to the "Address/Value" Field of the CX-Programmer variable table.

- For the CIO area "CIO 0001", enter only the numerical parts in the address. If above two digits are all 0, you can omit 0 to enter. For "0001", enter "1".
- For "E0\_0001", enter "E0\_0001" as it is. If above two digits are all 0, you can omit 0 to enter. For "E0\_0001", enter "E0\_1".
- For a BOOL variable, enter a value in a range of 00 and 15 to two decimal places of the address.

## 4-7 How to Input Data Type of Array Variables

Array variables can be set by all the input methods.

The input methods for each device type are as follows.

NJ/NX	Importing and updating variables directly from device	"Array[start point of array..end point of array] of data type" is automatically entered in the "Data Type" Field.
	Direct entry	Enter "Array[start point of array..end point of array] of data type" in the "Data Type" Field. Example) number of array for DINT variable is 10 : "Array [0..9] of DINT".
	Copy and paste	
CJ-CIP	Importing and updating variables directly from device	"Data type [number of array]" is automatically entered in the "Data Type" Field.
	Direct entry	Enter "Data type [number of array]" in the "Data Type" Field. Example) For DINT variable when number of array is 10 : DINT[9]
	Copy and paste	
CJ-FINS	Direct entry	Enter "Data type [number of array]" in the "Data Type" Field. Example) For DINT variable when number of array is 10 : DINT[9]
	Copy and paste	

## 4-8 Import Availability for Data Type Variables

Whether the import is available for each device is as follows.

NJ/NX	Importing and updating variables directly from device	Available. However, variables of the union and enumeration types cannot be imported.
	Direct entry	Not available because an error occurs if a data type that you entered is not within the "IntelliSense" scope.
	Copy and paste	Not available because an error occurs if a data type that you entered is not within the "IntelliSense" scope.
CJ-CIP	Importing and updating variables directly from device	Available. However, the system-defined variables cannot be imported.
	Direct entry	Not available because an error occurs if a data type that you entered is not within the "IntelliSense" scope.
	Copy and paste	Not available because an error occurs if a data type that you entered is not within the "IntelliSense" scope.
CJ-FINS	Direct entry	Not available because an error occurs if a data type that you entered is not within the "IntelliSense" scope.
	Copy and paste	Not available because an error occurs if a data type that you entered is not within the "IntelliSense" scope.

# 5 When NJ/NX is Connected

This section explains how to import the variables when the NJ/NX is set as External Device. Refer to the next section for how to import NJ/NX variables.

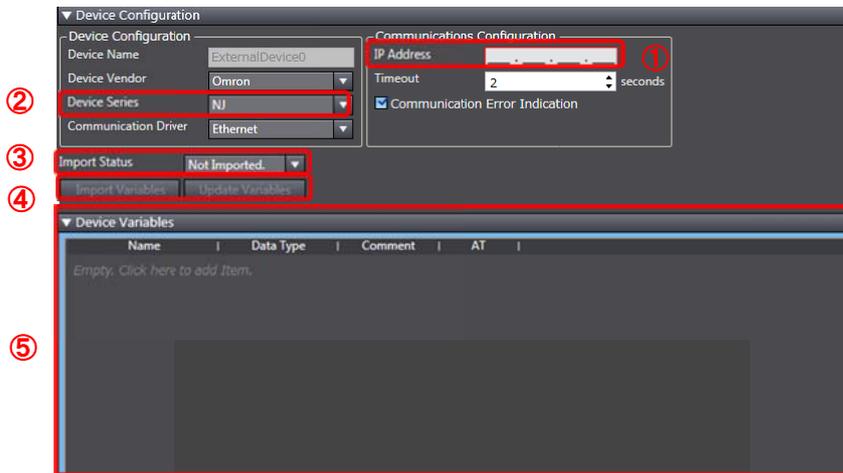


## Additional Information

As an example, the following screen uses “NJ” device to explain the procedure. When you use NX, replace the description of “NJ” with “NX” in the following procedure, as the same procedure as “NJ” is used for “NX” to import variables.

### 5-1 Window to Set NJ/NX as External Device

This section explains the window that sets the NJ/NX External Device. The following window appears by right-clicking “Device References” -> “Add” -> “ExternalDevice”, and select “NJ” or “NX” for the “Device Series” Field.



- ① IP Address: Enter the address of the connected NJ/NX. Example)“192.168.250.1”
- ② Device Series: Select the types of the connected External Device from “CJ”, “NJ”, or “NX”.
- ③ Import Status: The import result and date are shown after importing the variable.
- ④ Import Variables/ Update Variables: When the External Device is connected with an Ethernet cable, click the “Import Variables” or “Update Variables” Button to import or update the variables.
- ⑤ Device Variables: Variables that are imported from the External Device are shown.

### 5-2 Importing Variables when External Device is NJ/NX

There are the following three methods to import variables when the “NJ” or “NX” is set as External Device.

- Importing and updating variables directly from device
- Direct entry
- Copy and paste from Excel or other files

Refer to the next page for each variable import method.

## 5-3 Importing and Updating Variables Directly from Device

This method directly imports the variable information from the NJ/NX by connecting the NJ/NX to the PC that imports the variables with an Ethernet cable.

As the CIP protocol is used in this method, only the exposed variables in publish setting (set to "Publish Only", "Input", or "Output") of system-defined and user-defined can be imported among the NJ/NX global variables.



### Additional Information

If all of the global variables to import is set to "Do not publish" in the NJ/NX, only the NJ/NX system-defined variables will be imported.

All of the variables are imported by pressing the "Import Variables" Button.

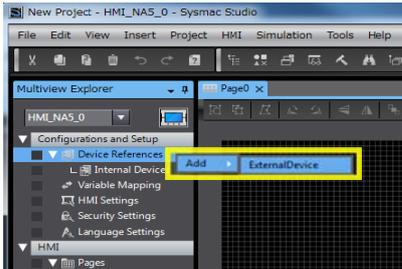
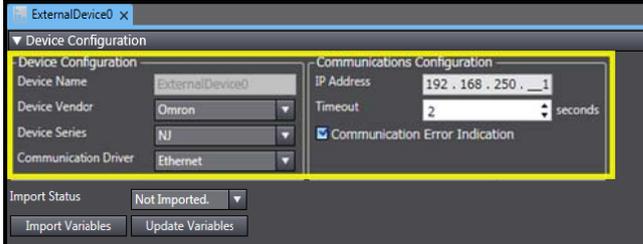
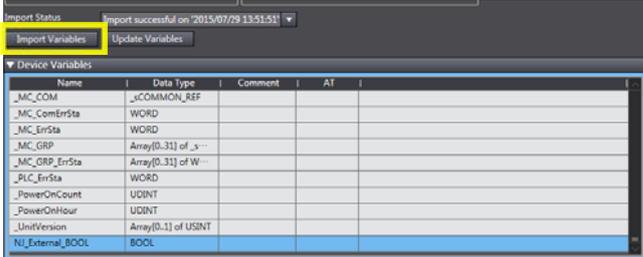
Individual variable cannot be selected whether to import or not.

You can import only the difference in the variable information by pressing the "Update Variables" Button.

Perform the following procedure to import and update variables directly from the NJ/NX.

#### ■ Importing variables from the NJ/NX Unit

<p>1 Set the variable to the global variable of the NJ/NX in the Sysmac Studio.</p>	
<p>2 Set the variable to other than "Do not publish".</p>	
<p>3 Transfer the setting to the NJ/NX.</p>	

<p>4 Open New Project and click “Device References” -&gt; “Add” -&gt; “ExternalDevice” to add “ExternalDevice0”.</p>																																													
<p>5 Select “NJ” or “NX” for the “Device Series” Field and enter the IP address of the device.</p>																																													
<p>6 Click the “Import Variables” Button. The user-defined variables are imported under the system-defined variables of the NJ/NX.</p>	 <table border="1" data-bbox="632 831 1275 1023"> <thead> <tr> <th>Name</th> <th>Data Type</th> <th>Comment</th> <th>AT</th> </tr> </thead> <tbody> <tr> <td>._MC_COM</td> <td>..COMMON_REF</td> <td></td> <td></td> </tr> <tr> <td>._MC_CompErrSta</td> <td>WORD</td> <td></td> <td></td> </tr> <tr> <td>._MC_ErrSta</td> <td>WORD</td> <td></td> <td></td> </tr> <tr> <td>._MC_GRP</td> <td>Array(0..31) of s...</td> <td></td> <td></td> </tr> <tr> <td>._MC_GRP_ErrSta</td> <td>Array(0..31) of W...</td> <td></td> <td></td> </tr> <tr> <td>._PLC_ErrSta</td> <td>WORD</td> <td></td> <td></td> </tr> <tr> <td>._PowerOnCount</td> <td>UDINT</td> <td></td> <td></td> </tr> <tr> <td>._PowerOnHour</td> <td>UDINT</td> <td></td> <td></td> </tr> <tr> <td>._UnitVersion</td> <td>Array(0..1) of USINT</td> <td></td> <td></td> </tr> <tr> <td>NJ_External_BOOL</td> <td>BOOL</td> <td></td> <td></td> </tr> </tbody> </table>	Name	Data Type	Comment	AT	._MC_COM	..COMMON_REF			._MC_CompErrSta	WORD			._MC_ErrSta	WORD			._MC_GRP	Array(0..31) of s...			._MC_GRP_ErrSta	Array(0..31) of W...			._PLC_ErrSta	WORD			._PowerOnCount	UDINT			._PowerOnHour	UDINT			._UnitVersion	Array(0..1) of USINT			NJ_External_BOOL	BOOL		
Name	Data Type	Comment	AT																																										
._MC_COM	..COMMON_REF																																												
._MC_CompErrSta	WORD																																												
._MC_ErrSta	WORD																																												
._MC_GRP	Array(0..31) of s...																																												
._MC_GRP_ErrSta	Array(0..31) of W...																																												
._PLC_ErrSta	WORD																																												
._PowerOnCount	UDINT																																												
._PowerOnHour	UDINT																																												
._UnitVersion	Array(0..1) of USINT																																												
NJ_External_BOOL	BOOL																																												



#### Additional Information

Variables are imported based on CIP protocol rules, so the global variables set to “Do not publish” in “Network Publish” cannot be imported.



#### Additional Information

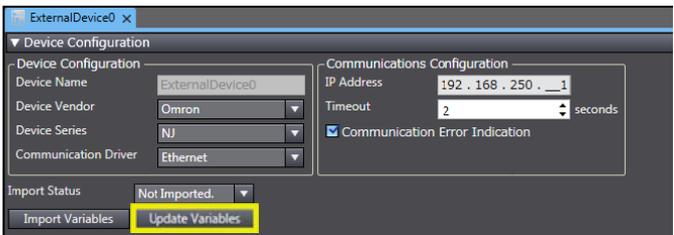
Structure variables can be imported in the same way as for regular variables.  
Data variables of unions and enumerations that are not supported by the NA cannot be imported.

After the variable is imported, you can import only the differences in the variables that were changed or added by the External Device by clicking the “Update Variables” Button next to the “Import Variables” Button. You do not necessarily have to click the “Import Variables” Button before “Update Variables” Button.

Perform the following procedure to import the differences in the NJ/NX variables by clicking the “Update Variables” Button.

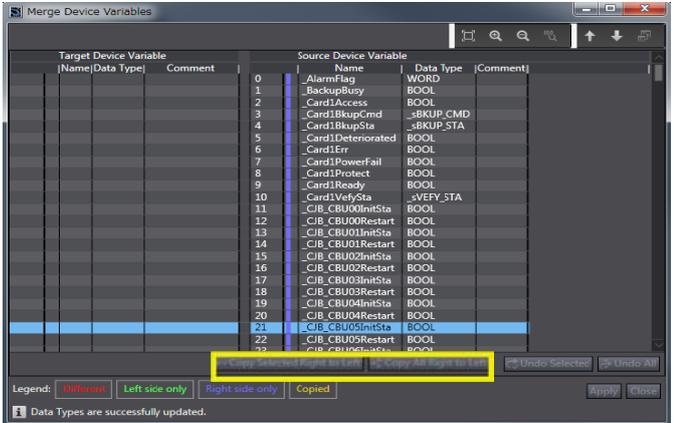
■ **“Update” procedure**

1 On the External Device0 Tab Page, select “NJ” or “NX” for the “Device Series” Field and enter the IP address of the device, and click the “Update Variables” Button.



2 After clicking the “Update Variables” Button, the pop-up page appears as shown on the right. note 1)

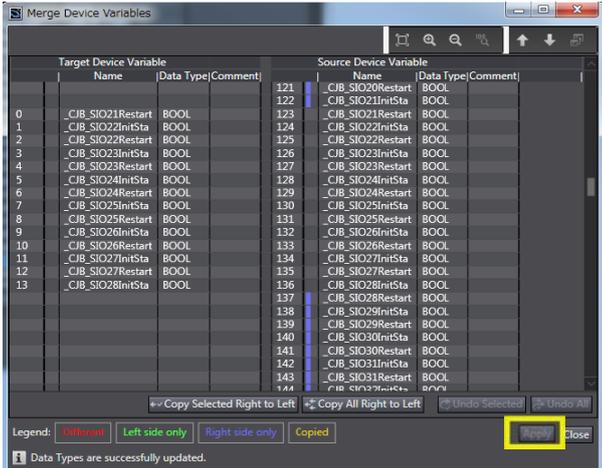
Select the variable on the right side and click the “Copy Selected Right to Left” or “Copy All Right to Left” Button.



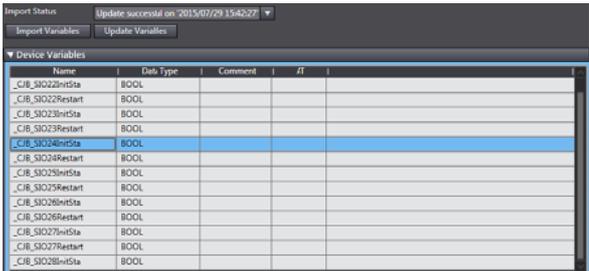
Note1 ) The variables stored in the External Device are displayed at the right side of the pop-up page. At the left side, the “Device Variables” Column of the connected External Device is displayed.

3 After the variables are copied at the left side, click the “Apply” Button to apply the results.

After the results are applied, click the “Close” Button to close the pop-up page.



4 The copied variable is added in the “Device Variables” Column.



## 5-4 Direct Entry

In this method, you can directly enter variables in the “Device Variables” Column of the Sysmac Studio. Regardless of the publish setting in the global variable table of the NJ/NX variables can be registered.



### Additional Information

A tag comparison error occurs after transferring the variable information to the NA if the variable information that you entered is different from the information in the NJ/NX. The following items are checked during the tag comparison.

- Variable name, structures name, structure member name
- Variable data type, structure data type, structure member data type
- Number of array for variables, number of array for structures, number of array for structure member

### “Direct entry” procedure

<p>1 On the External Device0 Tab Page, select “NJ” or “NX” for the “Device Series” Field and enter the IP address of the device.</p>	
<p>2 Enter a variable name for the “Name” Field and the variable data type for the “Data Type” Field of the “Device Variables” Column. Note 1)</p>	
<p>3 After transferring the data to the NA, make sure that no error occurs and the screen starts normally, which means the operation ends successfully.</p>	



### Additional Information

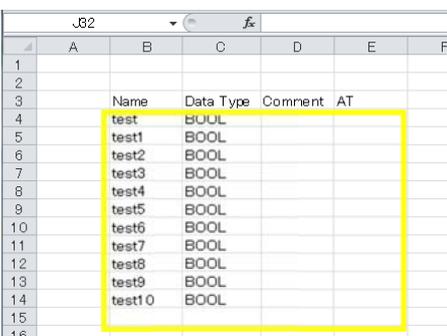
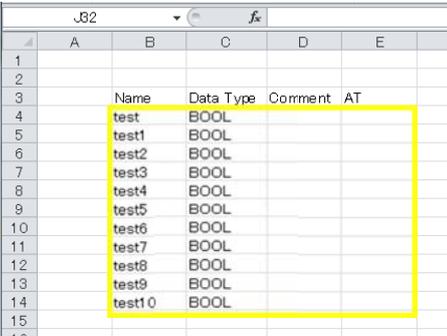
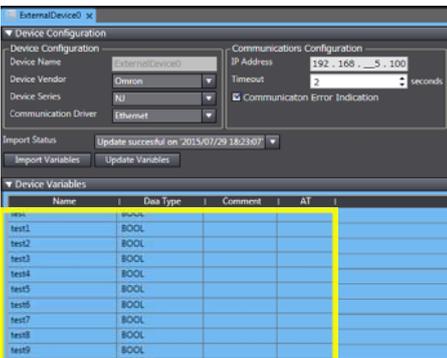
When entering array variables, enter “Array[start point of array..end point of array] of variable name” in the “Data Type” Field.

Example) For DINT variable when number of array is 10: “Array [0..9] of DINT”

## 5-5 Copy and Paste

In addition to the direct entry, you can copy the variable information from Excel or text files and paste it to the “Device Variables” Column of the Sysmac Studio. To copy and paste the information to the “Device Variables” Column, the variable information must be placed in the specified order in the file.

### ■ “Copy & paste” procedure

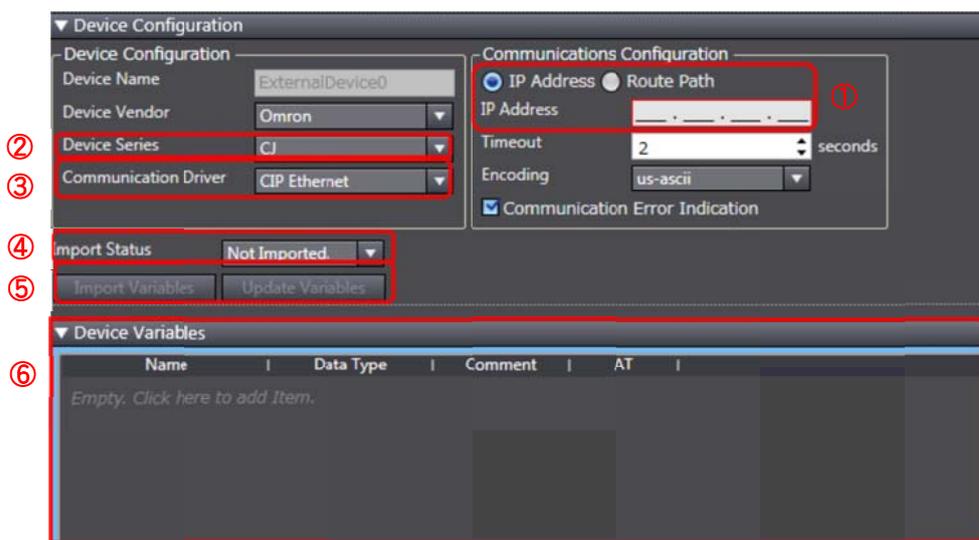
<p><b>1</b> Input the variables that you want to copy to the Sysmac Studio in the Excel sheet.</p> <p>The order is Name-&gt; Data Type-&gt; Comment-&gt; AT, from left to right. You do not need to input “Comment” and “AT”.</p>	
<p><b>2</b> Copy the variables in the Excel sheet.</p> <p>Make sure that the data in “Comment” and “AT” is also copied even they are blank. *The heading lines on top are given only for explanation, so exclude the headings when you copy the variables information.</p>	
<p><b>3</b> In the “Device Variables” Column, right-click and select “Paste” or “Ctrl+V” to paste the variables.</p>	

# 6 When CJ-CIP is Connected

This section explains how to import the variables when the CJ2 is set as External Device. Refer to the next page for the procedures to import the CJ-CIP variables.

## 6-1 Window to Set CJ-CIP as External Device

This section explains the window that sets the CJ-CIP External Device. The following window appears by right-clicking “Device References” -> “Add” -> “ExternalDevice”, and selecting CJ for the “Device Series” Field, and CIP Ethernet for the “Communication Driver” Field.



- ① IP Address: The “IP Address” Field is displayed for the connected device if the “IP Address” Check Box is selected. Example) “192.168.250.1”  
\*Refer to the following “Additional Information” for information on the “Route path” Check Box.
- ② Device Series: Select the types of the connected External Device from “CJ”, “NJ”, or “NX”.
- ③ Communication Driver: Either “CIP-Ethernet” or “FINS-Ethernet” can be chosen for the CJ. “CIP-Ethernet” is selected here.
- ④ Import Status: The import result and date are shown after importing the variable.
- ⑤ Import Variables/ Update Variables :When the External Device is connected with an Ethernet cable, click the “Import Variables” or “Update Variables” Button to import or update the variables.
- ⑥ Device Variables: Variables that are imported from the External Device are shown.



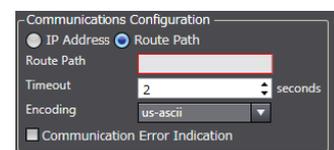
### Additional Information

When the “Route path” Check Box is selected in the “Communications Configuration” Column, the “IP Address” Field changes to the “Route Path” Field.

The “Route Path” Field is used when connecting the External Device via router.

The entry format is “Port No.%address”.

Example) 1%192.168.250.30



## 6-2 Importing Variables when External Device is CJ-CIP

There are the following three methods to import variables when the CJ-CIP is set as External Device.

- Importing and updating variables directly from device
- Direct entry
- Copy and paste from Excel or other files

Refer to the next page for each variable import method.

## 6-3 Importing and Updating Variables Directly from Device

This method directly imports the variable information from the CJ by connecting the CJ to the PC that imports the variables with an Ethernet cable.

As the CIP protocol is used in this method, the variable import is available within the CIP function scope that is supported by the CJ.



### Additional Information

Unlike the NJ/NX, the CJ cannot import its system-defined variables. Only the variables whose network address is set and the address is allocated by the CX-Programmer can be imported to the Sysmac Studio.

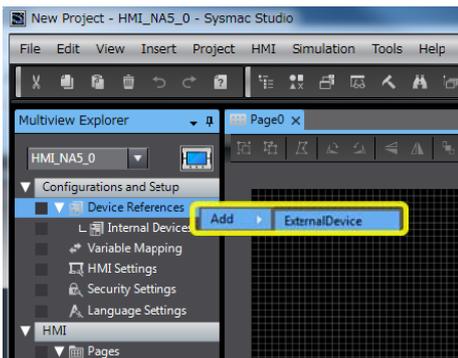
All of the variables are imported by pressing the “Import Variables” Button.

Individual variable cannot be selected whether to import or not.

You can import only the difference in the variable information by pressing the “Update Variables” Button.

Perform the following procedure to import and update variables directly from the CJ.

### ■ Importing variables from the CJ

<p>1 Click “Device References” -&gt; “Add” -&gt; “ExternalDevice” to add “ExternalDevice0”.</p>	
<p>2 Select CJ for the “Device Series” Field, CIP-Ethernet for the “Communication Driver” Field and enter the IP address of the device.</p>	

- 3 Connect the CJ with an Ethernet cable and click the “Import Variables” Button.

The screenshot shows the 'Device Configuration' window. Under 'Device Configuration', the fields are: Device Name: ExternalDevice0, Device Vendor: Omron, Device Series: CJ, and Communication Driver: CIP Ethernet. Under 'Communications Configuration', the fields are: IP Address: 192.168.250.5, Timeout: 2 seconds, and Encoding: us-ascii. The 'Communication Error Indication' checkbox is checked. The 'Import Status' is 'Not Imported'. The 'Import Variables' button is highlighted in yellow.

- 4 Make sure that the CJ variables are automatically entered in the “Device Variables” Column, which means the operation ends successfully.

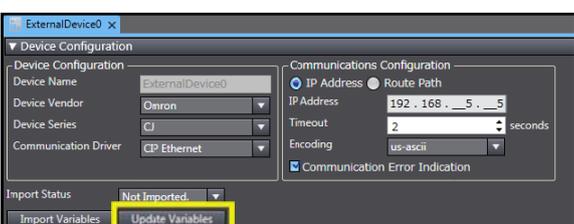
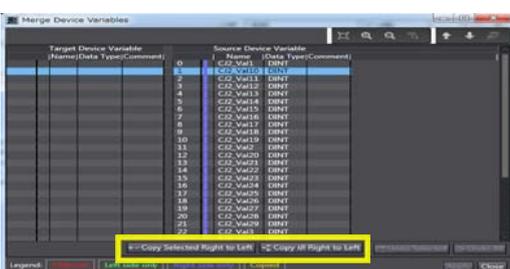
The screenshot shows the 'Device Configuration' window after a successful update. The 'Import Status' is 'Update successful on 2015/07/30 16:00:31'. The 'Import Variables' button is highlighted in yellow. The 'Device Variables' table is populated with the following data:

Name	Data Type	Comment	AT
test1	DINT		
test10	DINT		
test100	DINT		
test11	DINT		
test12	DINT		
test13	DINT		
test14	DINT		
test15	DINT		
test16	DINT		
test17	DINT		
test18	DINT		
test19	DINT		
test2	DINT		

After the variable is imported, you can import only the differences in the variables that were changed or added by the External Device by clicking the “Update Variables” Button next to the “Import Variables” Button. You do not necessarily have to click the “Import Variables” Button before “Update Variables” Button.

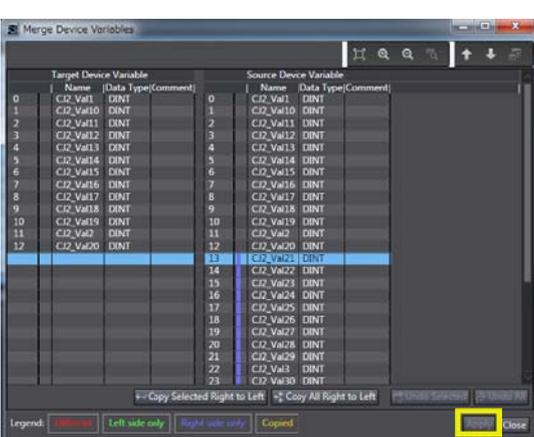
Perform the following procedure to import the differences in the CJ variables by clicking the “Update Variables” Button.

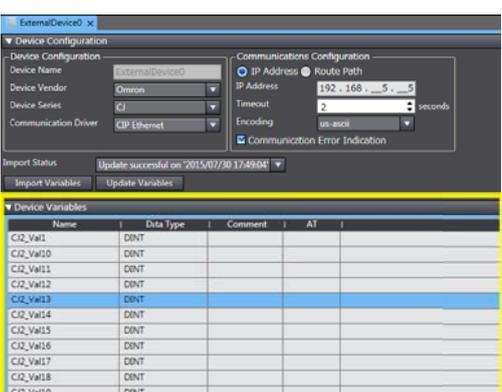
■ **“Update” procedure**

<p>1 On the External Device0 Tab Page, select CJ for the “Device Series” Field, CIP-Ethernet for the “Communication Driver” Field and enter the IP address of the device.</p>	
<p>2 After clicking the “Update Variables” Button, the pop-up page appears as shown on the right. note 1)</p> <p>Select the variable and click the “Copy Selected Right to Left” or “Copy All Right to Left” Button.</p>	

Note1 ) The variables stored in the External Device are displayed at the right side of the pop-up page.

- At the left side, the “Device Variables” Column of the connected External Device is displayed.

<p>3 After the variables are copied at the left side, click the “Apply” Button to apply the results.</p> <p>After the results are applied, click the “Close” Button to close the pop-up page.</p>	
---	--

<p>4 The copied variable is added in the “Device Variables” Column.</p>	
---	--

## 6-4 Direct Entry

In this method, you can directly enter a variable name in the “Device Variables” Column of the Sysmac Studio. Between the NA and CJ is communicated with variable names, so you don’t need to enter in the “AT” Field for the CJ-CIP.



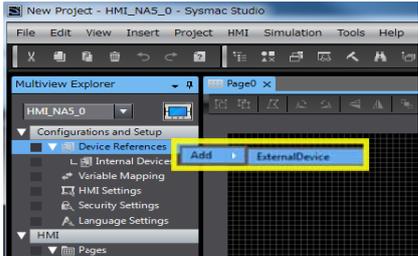
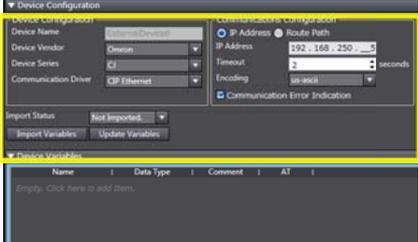
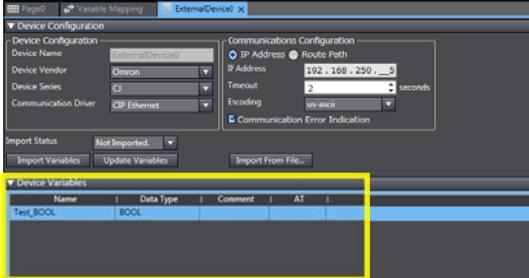
### Additional Information

When communicating with the CJ-CIP, a tag comparison error occurs after transferring the variable information to the NA if the variable information that you entered is different from the information in the CJ Unit.

The following items are checked during the tag comparison.

- Variable name, structure name, structure member name
- Variable data type, structure data type, structure member data type
- Number of array for variables, number of array for structures, number of array for structure member

### ■ “Direct entry” procedure

<p>1 Click “Device References” -&gt; “Add” -&gt; “ExternalDevice” to add “ExternalDevice0”.</p>									
<p>2 Select CJ for the “Device Series” Field and enter the IP address of the device.</p>									
<p>3 Enter the “Name” and “Data Type” Fields of the “Device Variables” Column.</p>	 <table border="1" data-bbox="632 1659 997 1760"> <thead> <tr> <th>Name</th> <th>Data Type</th> <th>Comment</th> <th>AT</th> </tr> </thead> <tbody> <tr> <td>Test_BOOL</td> <td>BOOL</td> <td></td> <td></td> </tr> </tbody> </table>	Name	Data Type	Comment	AT	Test_BOOL	BOOL		
Name	Data Type	Comment	AT						
Test_BOOL	BOOL								
<p>4 After transferring the information to the device, make sure that no error occurs and the device operates normally.</p>									



### Additional Information

For array variables, enter “data type [number of array]” in the “Data Type” Field. Example) For DINT variable when number of array is 10: DINT[9]

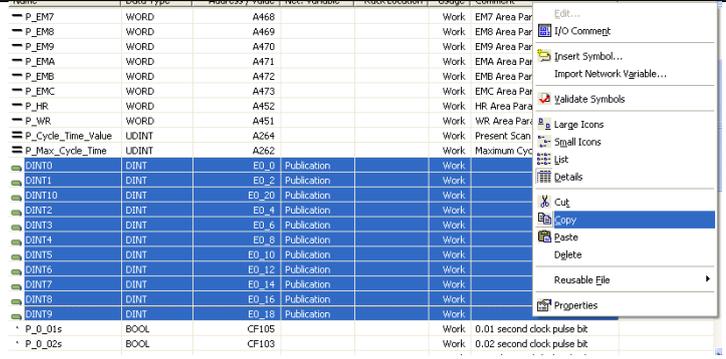
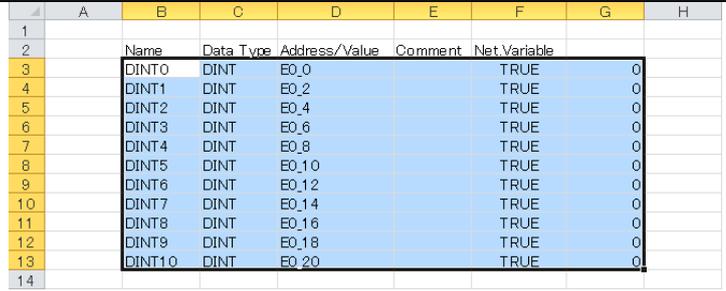
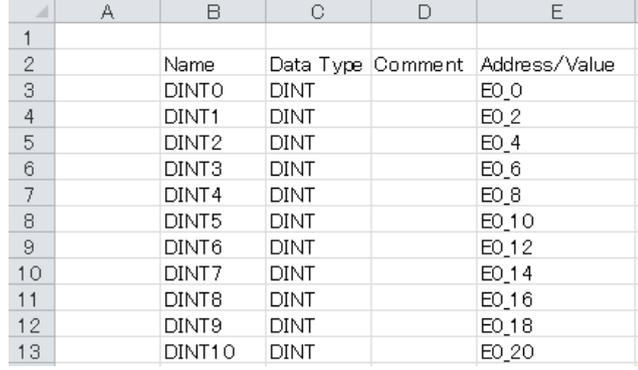
## 6-5 Copy and Paste

In addition to the direct entry, you can copy the variable information from Excel or text files and paste it to the “Device Variables” Column of the Sysmac Studio. To copy and paste the information to the “Device Variables” Column, the variable information must be placed in the specified order in the file.

The variable information cannot be copied directly from the CX-Programmer and pasted to the “Device Variables” Column of the Sysmac Studio. However, the information of the CX-Programmer can be copied from Excel or text files and pasted.

Perform the following procedure to copy the information of the CX-Programmer from Excel and paste it to the “Device Variables” Column.

### ■ “Copy & paste” procedure

<p>1 Open the variable table of the CX-Programmer, select the variables, right-click-&gt; select “Copy” or press the [Ctrl+C] keys to copy the variables.</p>	
<p>2 Paste the copied data in the Excel sheet.</p> <p>The address information “Address/Value” is pasted together even it is not required in this “CJ-CIP” method.</p> <p>*The heading lines on top are given only for explanation. The headings are not entered even if they are copied and pasted.</p>	
<p>3 Change the order of the pasted data as follows: “Name-&gt; Data Type-&gt; Comment-&gt; Address/Value”</p> <p>You can leave “Comment” and “Address/Value” blank but “Name” and “Data Type” must be entered, otherwise an error occurs after they are pasted.</p>	

4

Copy the variable in the Excel sheet.

Copy the four columns including “Name”, “Data Type”, “Comment”, and “Address/Value”.

Be sure to copy the four columns even if “Comment” is blank.

\*Exclude the heading lines on top such as “Name”, “Data Type” etc., when you copy the variables information.

	A	B	C	D	E	F
1						
2		Name	Data Type	Comment	Address/Value	
3		DINT0	DINT		E0_0	
4		DINT1	DINT		E0_2	
5		DINT2	DINT		E0_4	
6		DINT3	DINT		E0_6	
7		DINT4	DINT		E0_8	
8		DINT5	DINT		E0_10	
9		DINT6	DINT		E0_12	
10		DINT7	DINT		E0_14	
11		DINT8	DINT		E0_16	
12		DINT9	DINT		E0_18	
13		DINT10	DINT		E0_20	
14						

5

In the “Device Variables” Column, right-click and select “Paste” or press the [Ctrl+V] key to paste the variables.

The screenshot shows a configuration window with two tabs: "Device Configuration" and "Communications Configuration". The "Device Configuration" tab is active, showing fields for Device Name, Device Vendor (Mitsumi), Device Series (G), and Communication Driver (IP Ethernet). The "Communications Configuration" tab shows IP Address (192.168.250.3), Timeout (2 seconds), and Encoding (ASCII). Below these is an "Import Status" section showing "Update successful on: 2015/07/11 9:48:34". At the bottom, the "Device Variables" section contains a table with the following data:

Name	Data Type	Comment	AI
DINT0	DINT		E0_0
DINT1	DINT		E0_2
DINT2	DINT		E0_4
DINT3	DINT		E0_6
DINT4	DINT		E0_8
DINT5	DINT		E0_10
DINT6	DINT		E0_12
DINT7	DINT		E0_14
DINT8	DINT		E0_16
DINT9	DINT		E0_18
DINT10	DINT		E0_20

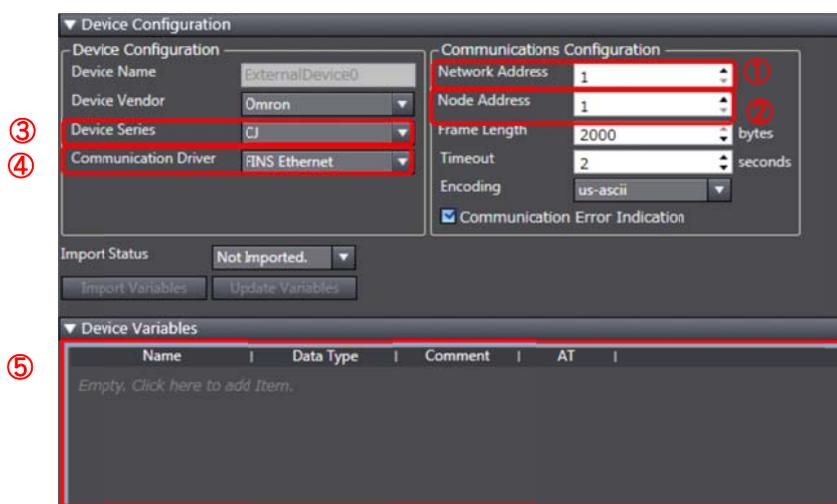
# 7 When CJ-FINS is Connected

This section explains how to import the variables when the CJ2 is set as External Device. Refer to the next page for the procedures to import the CJ-FINS variables.

## 7-1 Window to Set CJ- FINS as External Device

This section explains the window that sets the CJ-FINS External Device.

The following window appears by right-clicking "Device References" -> "Add" -> "ExternalDevice", and selecting CJ for the "Device Series" Field, and FINS Ethernet for the "Communication Driver" Field.



- ① Network Address: Enter the network address of the External Device. Use the "CX-Net network configuration tool" to set a network address.
- ② Node Address: Enter the node address of the External Device. Enter the 4<sup>th</sup> series of numeric values of the IP address. Example) For "192.168.250.10", node address is "10".
- ③ Device Series: Select the types of the connected External Device from "CJ", "NJ", or "NX".
- ④ Communication Driver: Either "CIP-Ethernet" or "FINS-Ethernet" can be chosen for the CJ. "FINS-Ethernet" is selected here.
- ⑤ Device Variables: Variables that are imported from the External Device are shown. When "FINS-Ethernet" is selected, you must enter the physical address in the "AT" Field. Refer to the next page for the address range.

## 7-2 Address Range

When using the FINS for the communication, you must enter the applicable variable address. The upper limit and the applicable area range of the address depend on the device model. For the details, refer to the relevant manual of the device used.

The address range is as follow:

Area	Description	Range	Word access		Bit access		Example of AT
			Read-in	Write	Read-in	Write	
CIO	CIO area	00000 to 06143	Available	Available	Available	Available	0000
HR	Holding area	00000 to 00511	Available	Available	Available	Available	H0000
AR	Auxiliary area	00000 to 01471 10000 to 11535	Available	Partially not available*1	Available	Partially not available*1	A0000
T	Timer process value	00000 to 04095	Available	Available	Not available	Not available	T0000
C	Counter process value	00000 to 04095	Available	Available	Not available	Not available	C0000
DM	Data memory	00000 to 32767	Available	Available	Available	Available	D0000
EM0 to EM18	EM area	00000 to 32767	Available	Available	Available	Available	E0_0000 E1_0000
WR	Work area	00000 to 00511	Available	Available	Available	Available	W0000
TU	Timer completion flag	00000 to 04095	Not available	Not available	Available	Not available	TU0000
CU	Completion flag	00000 to 04095	Not available	Not available	Available	Not available	CU0000

\*1: Some addresses cannot be written.

## 7-3 Importing the CJ-FINS Variables

The CJ-FINS cannot import the variables from the CJ.

There are the following two methods to import variables when the CJ-FINS is set as External Device.

- Direct entry
- Copy and paste from Excel or other files

When using the “Copy and paste from Excel or other files” method, you can get the source information from the following two windows of the CX-Programmer.

- ① Variable table: To copy the physical address with a comment.
- ② Usage overview with comments: To copy the physical address accessed with the ladder programming.

Refer to the next page for each variable import method.



### Additional Information

For the CJ-FINS, the variable names or data types are not necessary to be the same as the variables in the CJ, but the accurate address must be entered in AT.



### Additional Information

As the FINS protocol is used for the communication, variables that require the definition of data type such as structure variable are not supported.

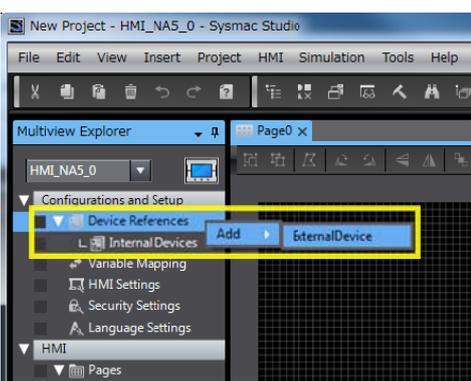
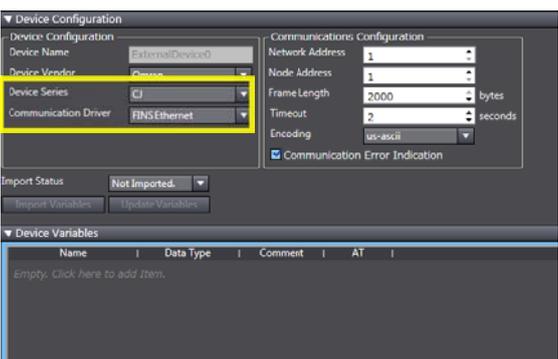
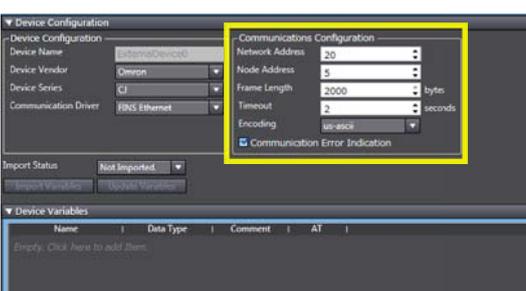
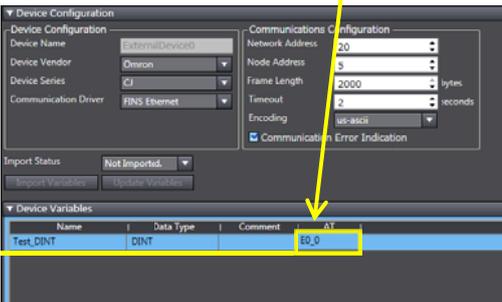
## 7-4 Direct Entry

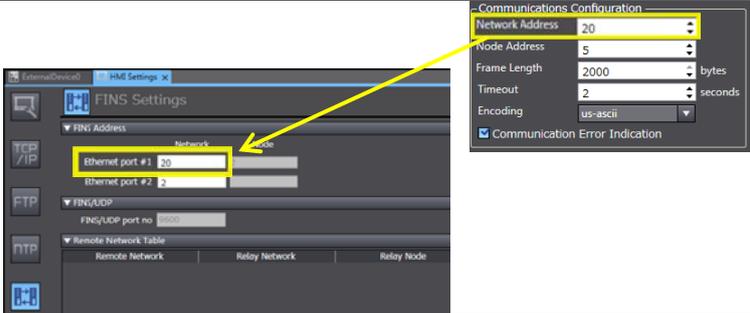
In this method, you can directly enter a variable name in the “Device Variables” Column of the Sysmac Studio.

Between the NA and CJ is communicated with the physical address, you don’t need to enter in the “AT” Field.

You don’t necessarily have to use the CX-Programmer to set variables.

### ■ “Direct entry” procedure

<p>1 Click “Device References” -&gt; “Add” -&gt; “ExternalDevice” to add “ExternalDevice0”.</p>													
<p>2 Select CJ for the “Device Series” Field and FINS Ethernet for the “Communication Driver” Field.</p>													
<p>3 Enter the “Network Address” and “Node Address” Fields.</p>													
<p>4 Enter the variable information in the “Device Variables” Column.</p> <p>When using the variables set in the CX-Programmer, enter the “AT” Field by referring to “Address/Value” corresponding to the variable.</p> <p>The variable name can be different from the name described in the CX-Programmer.</p> <p>For the variable that is not set in the CX-Programmer, refer to the table in 7-2 “Address Range” when entering the “AT” Field.</p>	<table border="1" data-bbox="710 1612 1125 1713"> <thead> <tr> <th>Name</th> <th>Data Type</th> <th>Address / Value</th> </tr> </thead> <tbody> <tr> <td>test2</td> <td>DINT[100]</td> <td>E0_1</td> </tr> <tr> <td>Test3</td> <td>BOOL</td> <td>E0_01</td> </tr> <tr> <td>Test_DINT</td> <td>DINT</td> <td>E0_0</td> </tr> </tbody> </table> 	Name	Data Type	Address / Value	test2	DINT[100]	E0_1	Test3	BOOL	E0_01	Test_DINT	DINT	E0_0
Name	Data Type	Address / Value											
test2	DINT[100]	E0_1											
Test3	BOOL	E0_01											
Test_DINT	DINT	E0_0											

<p>5</p>	<p>Change FINS Settings on the HMI Settings Tab.</p> <p>In the “FINS Address” Column, enter the network address value that you entered in Step 3 to the “Ethernet port” Field of Network.</p>	
<p>6</p>	<p>Make sure that no error occurs when the NA starts and the values are displayed normally, which means the operation ends successfully.</p>	



### Additional Information

For a BOOL variable, enter a value in a range of 00 and 15 to two decimal places of the address.

If the value of decimal places is not set to the address of the BOOL variable, a tag comparison error occurs when the NA starts.

Example) 0000.00

## 7-5 Copy and Paste

In addition to the direct entry, you can copy the variable information of the External Device to Excel or text files and paste it to the “Device Variables” Column of the Sysmac Studio.

The variable information cannot be copied directly from the CX-Programmer and pasted to the “Device Variables” Column of the Sysmac Studio. However, the information of the CX-Programmer can be copied from Excel or text files and pasted.

To copy and paste the information to the “Device Variables” Column, the variable information must be placed in the specified order in the file.

You can copy AT information from the “Variable table” or “Usage overview with comments” in the CX-Programmer. Use any one of the two methods as appropriate.

Variable table	Displays and obtains a list of the variables for all of the memory areas and the physical address with comments. The address without comment cannot be added to the list even the address is used in the program.
Usage overview with comments	Displays all of the address used with ladder in the project for each memory area regardless with/without a comment. You need to copy the physical address for each memory area.

### ■ “Copy & paste” procedure using “variable table”

This section explains how to copy the variable name and data type in the “Variable table” of the CX-Programmer, and paste it to the “Device Variables” Column of the Sysmac Studio.



#### Additional Information

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If a comment is given to the address used in the CJ program, it is automatically added to the variable table as a variable without a name. If no comment is given, the variable is not added to the variable table.

If you want to refer to the NA communication address with this method, give a comment to the physical address.

---



#### Additional Information

---

A building error occurs when pasting the variable to the Sysmac Studio, if a variable name is blank. To avoid the error, a variable name must be added in the Excel sheet.

---



#### Additional Information

---

Only the “BOOL” or “CHANNEL” data type can be used for a variable (physical address) without a name. For this reason, if you want to change the data type as desired, copy the data type from the CX-Programmer to a file before changing the data type.

---

1 Open the variable table of the CX-Programmer, select the variables, right-click-> select "Copy" or press the [Ctrl+C] keys to copy the variables.

Name	Data Type	Address / Value	Net. Variable	Rack Location	Usage	Comment
_P_CIO	WORD	A450			Work	CIO Area Parameter
_P_Cycle_Time_Error	BOOL	A401.08			Work	Cycle Time Error Flag
_P_DM	WORD	A460			Work	DM Area Parameter
Val1	BOOL	0.01	Publication			
Val2	BOOL	0.10	Publication			
	BOOL	1.10				
	BOOL	2.10				
	BOOL	2.15				
Val7	DINT	E0_10.00	Publication			
	CHANNEL	E0_300				
	CHANNEL	E0_100				
_P_EM0	WORD	A461				
_P_EM1	WORD	A462				
_P_EM2	WORD	A463				
_P_EM3	WORD	A464				
_P_EM4	WORD	A465				
_P_EM5	WORD	A466				
_P_EM6	WORD	A467				
_P_EM7	WORD	A468				
_P_EM8	WORD	A469				

2 Paste the copied data in the Excel sheet.

	A	B	C	D	E	F	G	H	I
1									
2									
3		Val1	BOOL	0.01	Test1	TRUE	0		
4		Val2	BOOL	0.1	Test2	TRUE	0		
5			BOOL	1.1	Test3		0		
6			BOOL	2.1	Test4		0		
7			BOOL	2.15	Test5		0		
8			BOOL	E0_10.00	Test6		0		
9		Val7	DINT	E0_200	Test7	TRUE	0		
10			CHANNEL	E0_300	Test8		0		
11			CHANNEL	E0_100	Test9		0		
12									
13									

3 Change the order of the pasted data as follows:  
"Name-> Data Type-> Comment-> Address/Value".

	A	B	C	D	E	F
1						
2		Name	Data Type	Comment	Address/Value	
3		Val1	BOOL	Test1	0.01	
4		Val2	BOOL	Test2	0.1	
5			BOOL	Test3	1.1	
6			BOOL	Test4	2.1	
7			BOOL	Test5	2.15	
8			BOOL	Test6	E0_10.00	
9		Val7	DINT	Test7	E0_200	
10			CHANNEL	Test8	E0_300	
11			CHANNEL	Test9	E0_100	
12						
13						

4 Add variable names to "Name" if they are blank.

	A	B	C	D	E	F
1						
2		Name	Data Type	Comment	Address/Value	
3		Val1	BOOL	Test1	0.01	
4		Val2	BOOL	Test2	0.1	
5		Val3	BOOL	Test3	1.1	
6		Val4	BOOL	Test4	2.1	
7		Val5	BOOL	Test5	2.15	
8		Val6	BOOL	Test6	E0_10.00	
9		Val7	DINT	Test7	E0_200	
10		Val8	CHANNEL	Test8	E0_300	
11		Val9	CHANNEL	Test9	E0_100	
12						
13						

5 Change the data types as desired in the Excel sheet.  
  
If you don't need to make any change, skip this step.

	A	B	C	D	E	F
1						
2		Name	Data Type	Comment	Address/Value	
3		Val1	BOOL	Test1	0.01	
4		Val2	BOOL	Test2	0.1	
5		Val3	BOOL	Test3	1.1	
6		Val4	BOOL	Test4	2.1	
7		Val5	BOOL	Test5	2.15	
8		Val6	BOOL	Test6	E0_10.00	
9		Val7	DINT	Test7	E0_200	
10		Val8	UINT	Test8	E0_300	
11		Val9	ULINT	Test9	E0_100	
12						
13						

6 Copy the variables that you edited in the Excel sheet.

Copy the four columns including “Name”, “Data Type”, “Comment”, and “Address/Value”.

Be sure to copy the four columns even if there are any blank columns.

	A	B	C	D	E	F
1						
2		Name	Data Type	Comment	Address/Value	
3		Val1	BOOL	Test1	0.01	
4		Val2	BOOL	Test2	0.1	
5		Val3	BOOL	Test3	1.1	
6		Val4	BOOL	Test4	2.1	
7		Val5	BOOL	Test5	2.15	
8		Val6	BOOL	Test6	E0_10.00	
9		Val7	DINT	Test7	E0_200	
10		Val8	UINT	Test8	E0_300	
11		Val9	ULINT	Test9	E0_100	
12						
13						

7 In the “Device Variables” Column, right-click and select “Paste” or click the [Ctrl+V] key to paste the variables.

ExternalDevice0 x

Device Configuration

Device Name: ExternalDevice0

Device Vendor: Omron

Device Series: CJ

Communication Driver: FINS Ethernet

Communications Configuration

Network Address: 1

Node Address: 1

Frame Length: 2000 bytes

Timeout: 2 seconds

Encoding: us-ascii

Communication Error Indication

Import Status: Not Imported

Import Variables | Update Variables | Import From File...

Device Variables

Name	Data Type	Comment	AT
Val1	BOOL	Test1	0.01
Val2	BOOL	Test2	0.1
Val3	BOOL	Test3	1.1
Val4	BOOL	Test4	2.1
Val5	BOOL	Test5	2.15
Val6	BOOL	Test6	E0_10.00
Val7	DINT	Test7	E0_200
Val8	UINT	Test8	E0_300
Val9	ULINT	Test9	E0_100

**Additional Information**

For a BOOL variable, enter a value in a range of 00 and 15 to two decimal places of the address.

If the value of decimal places is not set to the address of the BOOL variable, a tag comparison error occurs when the NA starts.

Example) 0000.00

■ **“Copy & paste” procedure” using “usage overview with comments”**

This section explains how to copy the address in the “Usage overview with comments” of the CX-Programmer, add the variable information, and paste it to the “Device Variables” Column of the Sysmac Studio.

**Additional Information**

The “Usage overview with comments” displays the used variables regardless with or without a comment. A report can be created only for each address area.

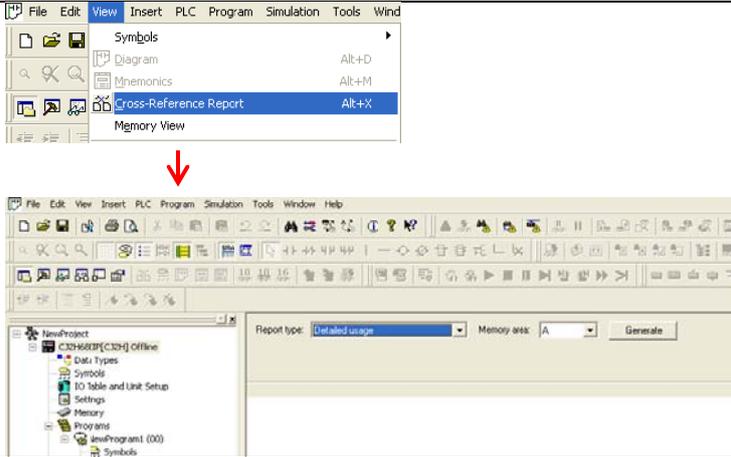
**Additional Information**

A building error occurs when pasting the variable to the Sysmac Studio if a variable name is blank. To avoid the error, a variable name must be added in the Excel sheet.

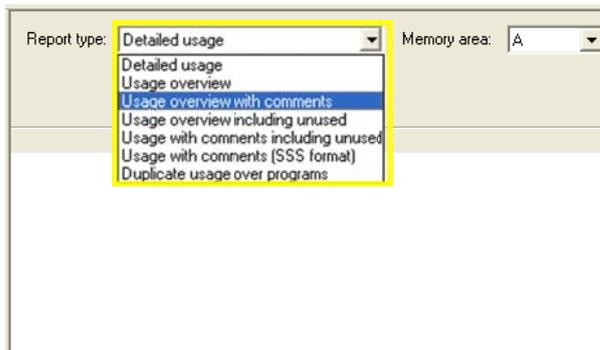
**Additional Information**

The “BOOL” or “CHANNEL” data type only can be used for a variable (physical address) without a name. For this reason, if you want to change the data type as desired, copy the data type from the CX-Programmer to a file before changing the data type.

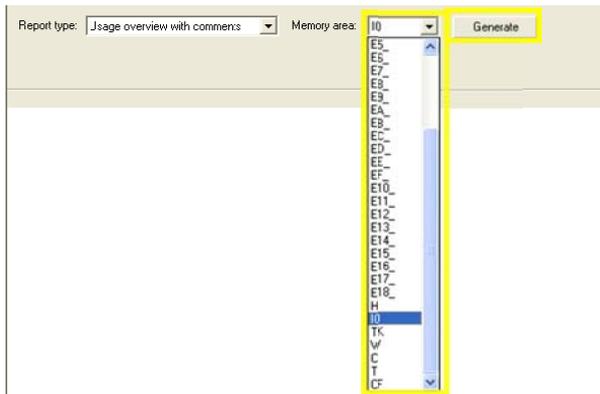
1 Select "View" -> "Cross-Reference Report" in the CX-Programmer to display the cross-reference report.



2 Select "Usage overview with comments" from the "Report type" pull-down list.



3 Select the address area to display from the "Memory area" pull-down list, and click the "Generate" Button to display the "Usage overview with Comments".



4 Select the variable to copy from the displayed list, and right-click and select "Copy" or click the [Ctrl+C] key to copy the variables.

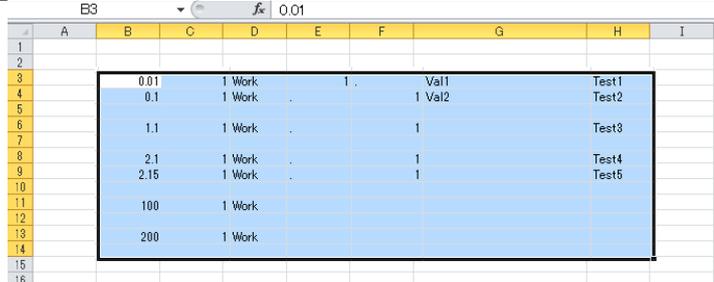
Report type: Usage overview with comments Memory area: I0 Generate

Free UM: 410054 Steps  
Total UM: 410624 Steps

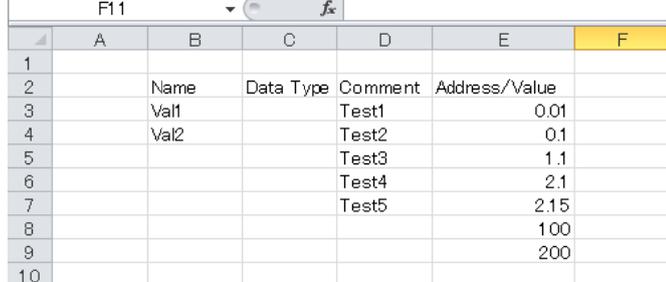
Address	Channel	Usage	Contact	Coil	Symbol	Comments
0.01	.	Work	.	.	Val1	Test1
0.10	.	Work	.	.	Val2	Test2
1.10	.	Work	.	.		Test3
2.10	.	Work	.	.		Test4
2.15	.	Work	.	.		Test5
100	.	Work	.	.		
200	.	Work	.	.		

Copy  
Select All

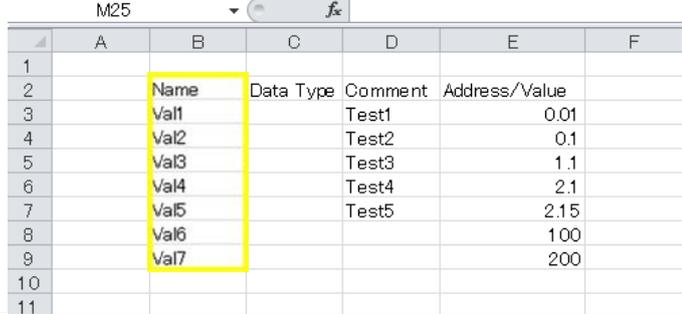
**5** Paste the copied data in the Excel sheet.



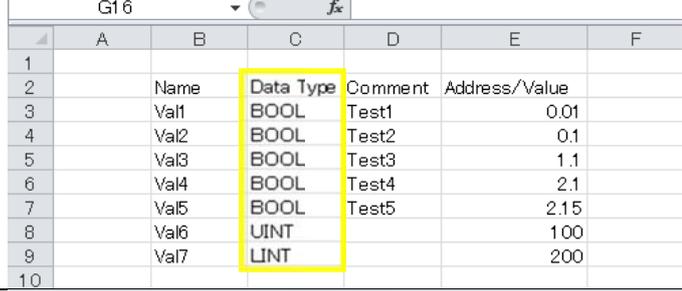
**6** Delete the blanks and change the order of the pasted data as follows: "Name-> Data Type-> Comment-> Address/Value".



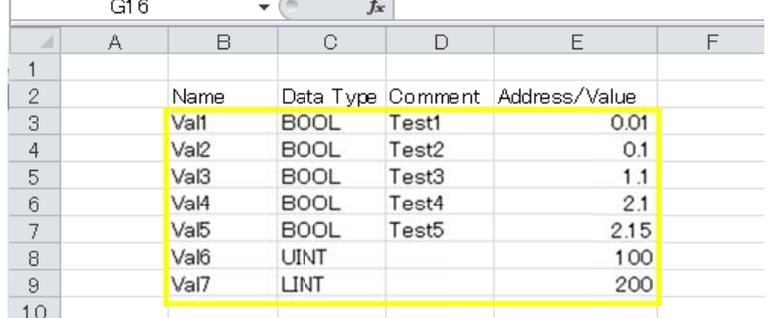
**7** Add variable names to "Name" if they are blank.



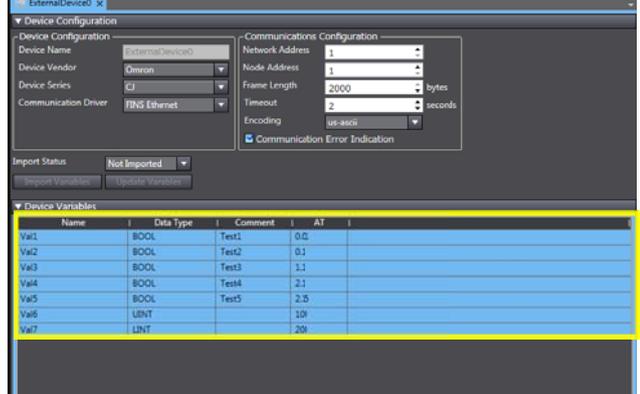
**8** Enter the data types in the Excel sheet.  
To set a BOOL variable, enter a value in a range of 00 and 15 to two decimal places in "Address/Value".



**9** Copy the variables that you edited in the Excel sheet.  
Copy the four columns including "Name", "Data type", "Comment", and "Address/Value".  
Be sure to copy the four columns even if there are blank columns.



**10** In the "Device Variables" Column, right-click and select "Paste" or click the [Ctrl+V] key to paste the variables.





### Additional Information

---

For a BOOL variable, enter a value in a range of 00 and 15 to two decimal places of the address.

If the value of decimal places is not set to the address of the BOOL variable, a tag comparison error occurs when the NA starts.

Example) 0000.00

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# Revision History

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Revision code	Date	Revised content
01	September 2015	Original production

Note: Do not use this document to operate the Unit.

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