

Programmable Terminal NA-series

# Replace Guide Procedure for Creating Project Data From NS to NA

NA5-15□101□(-V1) NA5-12□101□(-V1) NA5-9□001□(-V1) NA5-7□001□(-V1)

Replace Guide



### Introduction

This guide provides reference information for creating NA pages but no safety information. Be sure to obtain the manuals for NA Series Programmable Terminal, read and understand the safety points and other information required for use, and test sufficiently before actual use of the equipment.

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# **Related Manuals**

No.	Model	Title
W504	SYSMAC-SE2	Sysmac Studio Version 1 Operation Manual
V117	NA5-15W	NA-series Programmable Terminal Hardware
	NA5-12W	User's Manual
V125		NA-series Programmable Terminal Hardware
		(- V1) User's Manual
1/440		NIA a suis a Dua una sub la Tamaia al Osffusara
V118		NA-series Programmable Terminal Software
		User's Manual
V119		NA series Programmable Terminal Device
V119	NA5-15W□□□□(-V1) NA5-12W□□□□(-V1)	NA-series Programmable Terminal Device Connection User's Manual
	NA5-9WDDDD(-V1)	Connection User's Manual
	NA5-7WDDDD(-V1)	
V120	NA5-15W	NA-series Programmable Terminal Startup
V 120		Guide
		Oulde
V117		NS-series Programmable Terminals SETUP
	NS8-TVDD(-VD)	MANUAL
	NS10-TV□□(-V□́)	
	NS12-TS□□(-V□)	
	NS15-TX□□(-V□)	
SBSA-512	NS5-□Q□□(-V□)	NS-series Programmable Terminals
	NS8-TV□□(-V□)	PROGRAMMING MANUAL
	NS10-TV□□(-V□)	
	NS12-TS□□(-V□)	
	NS15-TX□□(-V□)	
V075	NS5- $\Box$ Q $\Box$ (-V $\Box$ )	NS-Series Programmable Terminals Macro
	NS8-TV□□(-V□)	Reference
	NS10-TV□□(-V□)	
	NS12-TS□□(-V□)	
	NS15-TX□□(-V□)	
V469	NA5-15W□□□□(-V1)	Programmable Terminal NA-series
	NA5-12WDDDC(-V1)	Replace Guide
	NA5-9W□□□□(-V1)	From NS to NA
	NA5-7W□□□□(-V1)	

The followings are the manuals and practice guides related to this document.

# **1 Description of This Manual**

This manual describes the specific procedure of *Programmable Terminal NA-series Replace Guide From NS to NA (Cat. No. V469), Section 4 Create NA HMI Project Data.* 

The description is based on the assumption that the CJ-series PLCs are connected and the communications method NS: FINS will be replaced with NA: FINS Ethernet. In the following table, the combinations with Yes in To be described in this manual are to be described.

NS Series		NA Series			To be described
Comm.Setting –	Comm.Setting –	Device References – External Device – Device Configuration			in this manual
Host Type	Protocol	Device Vendor	Device Series	Communication Driver	
SYSMAC-CJ1	FINS	Omron	CJ	FINS Ethernet	Yes
SYSMAC-CJ2					Yes
SYSMAC-CJ1	EtherNet/IP	Omron	CJ	FINS Ethernet	Yes
SYSMAC-CJ2			CJ	CIP Ethernet	Yes *1
SYSMAC-NJ	EtherNet/IP	Omron	NJ	Ethernet	
			NX7		
			NY		
			NX1P2		
			NX102	1	
			NX-CSG320	1	

\*1 The cases where communications are made with only addresses without tag variables are to be described in this manual.

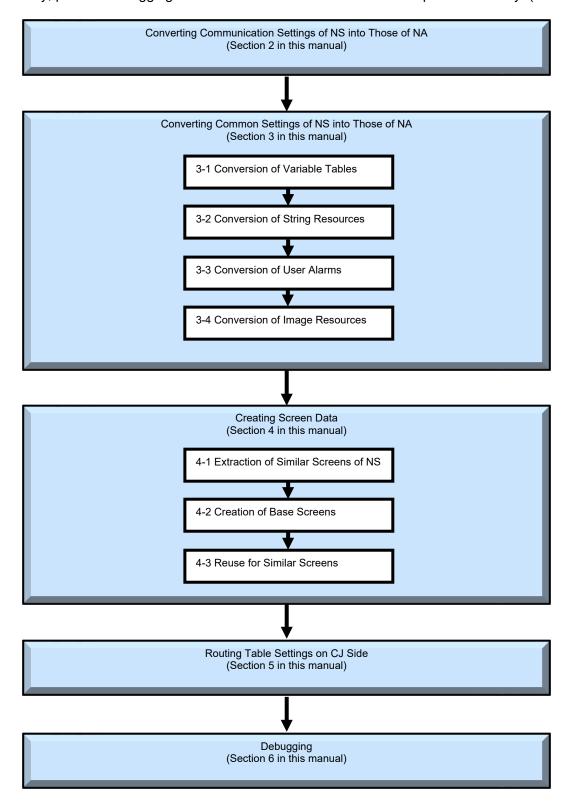
Refer to the *Programmable Terminal NA-series Replace Guide From NS to NA (Cat. No. V469)* for selecting a screen replacement model and considering replacement in terms of hardware or by function.

Incidentally, Excel is used in the screen replacement procedure. The version is Microsoft Office 365 Version 2108.

## 1-1 Screen Data Replacement Flow

There are broadly three steps in replacement of screens.

First, replace the settings of NS in use with those of NA. (Section 2, Section 3) Then, replace the screens of NS one by one with the screens of NA. (Section 4) Finally, perform debugging to check whether the NA screens are replaced correctly. (Section 6)



# 2 Converting Communication Settings of NS into Those of NA

## 2-1 Conversion of Ethernet Port Settings

This section describes how to convert the Ethernet port settings of NS into those of NA. The following Ethernet port settings are used as examples to describe the conversion of communication settings.

If the settings are different from those of NS to replace actually, match each with the other while configuring them.

The settings are converted into the Ethernet port 1 of NA. Comm. Setting

Comm-All Serial PortA Serial PortB	Ethernet Ena	nable
Ethernet	Network Address	LAN Speed
Controller Link	Node Address 2	10/100 BASE-T Auto Switch
	UDP Port No. 960	500 ÷
	_ IP Address —	
	IP Address	192 . 168 . 250 . 2
	Sub-net Mask	255 . 255 . 255 . 0
	Default Gateway	0.0.0.0
	IP Proxy Address	0.0.0.0

1. Create a new project with Sysmac Studio.

### 2. Double-click Multiview Explorer - HMI Settings.

Multiview Explorer	HMI Settings 🗙	
HMI_NA5_0	E Device Settings	
Eoringalations and Setup	▼ Startup Page	
 ✓ Variable Mapping	TCP Page name Page0	
HMI Settings	/IP	
Security Settings	▼ Startup Language	
R Troubleshooter	Startup language English (United States)	
A Language Settings	FTP Software Keypads / USB Keyboard	
Operation Log Settings		
HMI	System Keypad size 100 🌩 %	
	USB Keyboard layout English (United Kingdom)	

3. Click the **TCP/IP** icon, and set the IP address of the Ethernet port 1 to *192.168.250.2* and the subnet mask to *255.255.255.0*.

Multiview Explorer	HMI Settin	ngs 🗙
HMI_NA5_0  Configurations and Setup	F	TCP / IP Settings
<ul> <li>■ ►          ■ Device References     </li> </ul>		▼ Ethernet Port 1 - IP Address
Variable Mapping	TCP	IP Address 192 . 168 . 2502
HMI Settings	/IP	Subnet mask 255.255.2550
📾 Security Settings		Default gateway
R Troubleshooter		
A Language Settings	FTP	▼ Ethernet Port 1 - DNS
Operation Log Settings		Primary DNS server
► HMI		Secondary DNS server
	ΠΤΡ	Primary WINS server
		Secondary WINS server
	B→B	▼ Ethernet Port 2 - IP Address

4. Click the icon and set the network address of the Ethernet port 1 to 1.

Multiview Explorer	HMI Settings ×
	FINS Settings
<ul> <li>Configurations and Setup</li> </ul>	
Device References	▼ FINS Address
Variable Mapping	TCP Network Node
HMI Settings	Image: Construction of the second sec
Security Settings	Table and the set #2
R Troubleshooter	Ethernet port #2 2 🗘
A Language Settings	FTP FINS/UDP
Operation Log Settings	FINS/UDP port no 9600
► HMI	
	□TP ■ Remote Network Table
	Remote Network Relay Network

## 2-2 Conversion of Connected Device Settings

This section describes how to convert the communication settings of NS into those of NA. The conversion-source communication settings of NS are the protocols **FINS** for Ethernet connection.

The following NS settings are used as examples to describe the conversion of communication settings.

If the settings are different from those of NS to replace actually, match each with the other while configuring them.

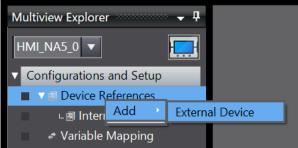
Comm. Setting



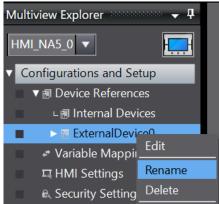
Comm. Setting

Comm-All Serial PortA Ethernet HOST8 Controller Link	Host number 3 Host Name HOST3 Host Type SYSMAC-CS1/CJ1/CP1 Protocol FINS	
	Network Address 1	

 Right-click Multiview Explorer – Configurations and Setup – Device References of the project file created in 2-1 Conversion of Ethernet Port Settings, and click Add – External Device.



2. When ExternalDevice0 is added under Internal Devices, right-click it and click Rename.



3. Enter the host name of NS.



- 4. Double-click HOST3.
- 5. When the communication settings screen is displayed, change **Communication Driver** to *FINS Ethernet*.

Multiview Explorer	HOST3 🗙			
HMI_NA5_0	C Device Configuration —		Communications Configuration –	
<ul> <li>Configurations and Setup</li> </ul>	Device Name	HOST3	📄 🕞 IP Address 🔵 Route Path	
▼ 🖪 Device References	Device Vendor	Omron 🔻	IP Address	·
∟ 🖩 Internal Devices	Device Series	CJ	Timeout	2 ¢ seconds
HOST3	Communication Driver	CIP Ethernet	Encoding us-ascii	•
<ul> <li>Variable Mapping</li> </ul>		CIP Ethernet	Communication Error Indicatio	'n
디 HMI Settings	Data Types	FINS Ethernet		

6. Set the network address, node address, and timeout according to the communication settings on the screen to replace. . s should be set to the default (2 000 bytes)

I ne frame length settin	ig should be set to	ine delault (2,000	) bytes).	
Multiview Explorer	HOST3 🗙			
HMI_NA5_0 🔻	Configuration —		Communications Co	onfiguration ————
<ul> <li>Configurations and Setup</li> </ul>	Device Name	HOST3	Network Address	1 🜲
▼ 🖩 Device References	Device Vendor	Omron 🔻	Node Address	1 🌲
∟ 🗃 Internal Devices	Device Series	CJ	Frame Length	2000 🗘 bytes
HOST3	Communication Driver	FINS Ethernet 🔹	Timeout	2 ≜ seconds
Variable Mapping				
디 HMI Settings			Encoding	us-ascii 🛛 🔻
🖻 Security Settings			Communication I	Error Indication

The frame langth (

7. When string display & input objects are used in NS, set the character encoding method according to the following character code conversion table. If string display & input objects are not used, set us-ascii.

1	NS	NA
System language	Character display format	Character encoding method
Japanese	Multibyte code (Shift-JIS)	Shift-JIS
Chinese (Simplified Chinese, Traditional Chinese)	Multibyte code (GB2312)	GB18030
English, Italian, Spanish, German, French	Multibyte code (Latin1)	iso-8859-1
All languages	Unicode (UTF-8)	UTF-8
All languages	Unicode (UTF-16)	UTF-16



## Additional Information

When CJ and CIP Ethernet are selected respectively for **Device Series** and **Communication** Driver, the address specification is only available with network variables. Physical address specification is not available.

# 3 Converting Common Settings of NS into Those of NA

## 3-1 Conversion of Variable Tables

The addresses used in NS are managed on variable tables.

When **Communication Driver** of PLC is FINS, the variables with a data size of one word or more will be set as CHANNEL type by default.

NA does not support the CHANNEL type, so an error will occur if you convert them as they are. Therefore, before converting them, you are recommended to set the data type in actual use. In CX-Designer, variable names are automatically generated, but we will describe the procedure for conversion into the variable names to be used in NA.

A rough workflow is as follows.

- 1. Extracting variables used in NS
- 2. Converting host addresses into variable names
- 3. Converting internal addresses of NS into variable names
- 4. Converting data type of variables into data type in actual use
- 5. Reflecting variable tables created in procedures 2 to 4 in those of Sysmac Studio

Device	Data type	Address	Address	Variable name after
type		type		correction
Host	BOOL	CIO	00000.00	CIO_00000_00
Host	BOOL	WR	WR00000.00	WR_00000_00
Host	BOOL	HR	HR0000.00	HR_00000_00
Host	BOOL	AR	AR00000.00	AR_00000_00
Host	BOOL	DM	DM00000.00	DM_00000_00
Host	BOOL	EM	EM00000.00	EM_00000_00
Host	BOOL	EM0 to 18*1	EM0_00000.00	EM_0 to 18_00000_00
Host	BOOL	TU	TU00000	TU_00000
Host	BOOL	CU	CU00000	CU_00000
Host	CHANNEL	CIO	00000	CIO_00000
Host	CHANNEL	WR	WR00000	WR_00000
Host	CHANNEL	HR	HR00000	HR_00000
Host	CHANNEL	AR	AR00000	AR_00000
Host	CHANNEL	DM	DM00000	DM_00000
Host	CHANNEL	EM	EM00000	EM_00000
Host	CHANNEL	EM0 to 18*1	EM0_00000	EM_0 to 18_00000
Host	CHANNEL	Т	T00000	T_00000
Host	CHANNEL	С	C00000	C_00000
NS	BOOL	\$B	\$B0	B_0
NS	BOOL	\$SB	\$SB0	SB_0
NS	BOOL	\$HB	\$HB0	HB_0
NS	CHANNEL	\$W	\$W0	W_0
NS	CHANNEL	\$SW	\$SW0	SW_0
NS	CHANNEL	\$HW	\$HW0	HW_0

In this procedure, variable names are corrected under the following rules.

\*1 Match it with the EM bank No. to use.

The purpose is to improve the readability of in which address the variable after conversion is used. Therefore, it is not necessary to perform the procedure as described. There is no problem as long as variable names conform to the naming convention of NS.

Set appropriate variable names, according to the system of NA to actually replace.

Restrictions on the variable names of NS are as follows.

- A number cannot be used as the first letter.
- Blank characters cannot be used.
- Addresses cannot be used as the names.
- 64 characters max.

# 3-1-1 Extracting Variables Used in NS

- 1. Open the screen data to convert in CX-Designer.
- Click View Window Symbol Table from the menu bar.
   CX-Designer NewProject3

<u>F</u> ile Find <u>V</u> iev	v <u>P</u> T <u>T</u> ools <u>H</u> el	р			
🗅 😂 👩 💷	Toolbars		à.,	<u>a a a a a</u>	100
	<u>W</u> indow	E E	6	Project Workspace	Alt+1
or 🔁 🖬 🖂	<u>S</u> tatus Bar		5	<u>Symbol</u> Table	Alt+2
~				<u>P</u> roperty List	Alt+3
	Previous La <u>b</u> el	Ctrl+PgUp	3	Library	Alt+4
Contents No 🖧	Next <u>L</u> abel	Ctrl+PgDn	6	Select Object	Alt+5
Project Works			<b>.</b>	List Up Addresses Used	Alt+6
Project F 📇	Previous Screen	Shift+PgUp	5	Output Window	Alt+7
📯 System : 🔛	Next Screen	Shift+PgDn	1	P <u>a</u> lette	Alt+8
Comm. S					

3. The variable tables are displayed.

×	Add	Find	Find Unused (	Symbols	Prev.		Next	
	Host	Name	Туре	Addres	s Type/Numb	ber	L/O Comment	Tag
	All 🔽		All 🔽		All	•		All 💌
	PTMEM	AutoGen1	BOOL	\$B0				None
	PTMEM	AutoGen2	CHANNEL	\$W0				None
	CJ1	AutoGen19	CHANNEL	00000				None
	CJ1	AutoGen3	BOOL	00000.00				None
	CJ1	AutoGen4	BOOL	00000.01				None

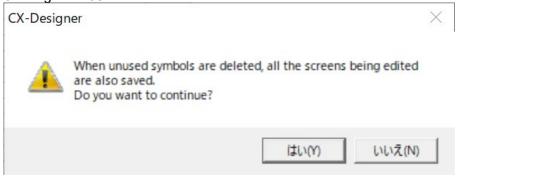
4. Right-click a variable table, and click **Delete Unused Symbols**. Doing this deletes the variable that is not used in the NS screen. The purpose is to prevent unnecessary variables from being converted.

× ⊧.	Add	Find	Find Ur	nused (	Symbols	Prev.	Next
	Host	Name	Тур	e	Addre	ss Type/Num	ber
	All 🔽		All	-		All	-
	PTMEM	AutoGen1	BOC	Ad			les l
	PTMEM	AutoGen2	CHA	Ad	2		Ins
	HOST3	AutoGen3	BOC	Cha	ange		
	HOST3	AutoGen4	BOC				
	HOST3	AutoGen5	BOC	Del	ete		Del
	HOST3	AutoGen6	BOC				
	HOST3	AutoGen7	BOC	Sel	ect All		Ctrl+A
	HOST3	AutoGen8	BOC	Cop	v		Ctrl+C
	HOST3	AutoGen9	BOC		-		
	HOST3	AutoGen10	BOC	Pas	te		Ctrl+V
	HOST3	AutoGen11	BOC				
	HOST3	AutoGen12	BOC	Fin	d		
	HOST3	AutoGen13	BOC	Ein	d Unused	Symbols	
	HOST3	AutoGen14	BOC				L
	HOST3	AutoGen15	BOC	Fin	d Invalid /	Addresses	
	HOST3	AutoGen16	BOC	NI	ct Result		E3
	HOST3	AutoGen17	BOC	Ne	(t Kesult		F3
	HOST3	AutoGen19	CHA	Pre	vious Res	ult	Shift+F3
	HOST3	AutoGen20	CHA	~			
	HOST3	AutoGen21	BOC	Cle	ar Find Re	sult	Alt+F3
	HOST3	AutoGen22	BOC	Rec	olace		
	HOST3	AutoGen23	BOC				
	HOST3	AutoGen24	BOC	Fin	d Referen	ce Object	
	HOST3	AutoGen25	BOC				
	HOST3	AutoGen26	CHA	Del	ete Unuse	d Symbols	
	HOST3	AutoGen27	CHA	_			
	HOST3	AutoGen28	CHA	Ор	eration Lo	g Setting	L
	HOST3	AutoGen29	CHA				
	HOST3	AutoGen30	СНА 🗸	Alle	ow Dockin	ng	
	HOST3	AutoGen31	CHA				



# Additional Information

When unused variables are deleted, the screen data will be saved. You are recommended to make a backup in case of a failure. The dialog shown below will be displayed when **Delete Unused Symbols** is clicked. Clicking the Yes button deletes the unused variables and saves the screen data.



5. Select a variable table, and select all variables.

CII	cking this	sorts the	addresses	in asc	cenaing or	aer.			
<b>×</b>	Add	Find	Find Unused S	by mbols	Prev.	Nex	t		Clear search result
	Host	Name	Туре	Addre	ss Type/Num	ber	I/O Comment	Tag	
	All 💌		All 💌		All	-		All 💌	

6. Select a variable table, and select all variables.

Add	Find	Find Unused	Symbols	Prev.	Nex	t	Clear search
Host	Name	Туре	Addres	s Type/Num	nber	I/O Comment	Tag
All 👱		All 🔽		All	-		All 💌
PTMEM	AutoGen1	BOOL	\$B0				None
РТМЕМ	AutoGen2	CHANNEL	\$W0				None
HOST3	AutoGen3	BOOL	00000.00				None
HOST3	AutoGen4	BOOL	00000.01				None
HOST3	AutoGen5	BOOL	00000.02				None
HOST3	AutoGen6	BOOL	00000.03				None
HOST3	AutoGen7	BOOL	00000.04				None
HOST3	AutoGen8	BOOL	00000.05				None
HOST3	AutoGen9	BOOL	00000.06				None
HOST3	AutoGen10	BOOL	00000.07				None
HOST3	AutoGen11	BOOL	80.0000				None
HOST3	AutoGen12	BOOL	00000.09				None
HOST3	AutoGen13	BOOL	00000.10				None
HOST3	AutoGen14	BOOL	00000.11				None
HOST3	AutoGen15	BOOL	00000.12				None
HOST3	AutoGen16	BOOL	00000.13				None
HOST3	AutoGen17	BOOL	00000.14				None
HOST3	AutoGen 19	CHANNEL	00000				None
HOST3	AutoGen20	CHANNEL	DM00000				None
HOST3	AutoGen21	BOOL	00000.15				None
HOST3	AutoGen22	BOOL	00001.00				None
HOST3	AutoGen23	BOOL	00001.01				None
HOST3	AutoGen24	BOOL	00001.02				None
HOST3	AutoGen25	BOOL	00001.03				None
HOST3	AutoGen26	CHANNEL	DM00020				None
HOST3	AutoGen27	CHANNEL	DM00010				None
HOST3	AutoGen28	CHANNEL	DM00001				None
HOST3	AutoGen29	CHANNEL	DM00002				None
HOSTS	AutoGen30	CHANNEL	DM00003				None
HOSTS	AutoGen31	CHANNEL	DM00004				None

- Copy all the variables.
   Start Excel.
- 9. Select a column D in the opened sheet, and right-click it to select Format Cells.

	А	В	С	D		E	F	G
1					X	Cu <u>t</u>		
2						<u>C</u> opy		
3						Paste Opti	one	
4							0113.	
5						Ă		
6						Paste <u>S</u> pecia	al	
7						Insert		
8								
9						<u>D</u> elete		
10						Clear Co <u>n</u> te	nts	
11					= =	Eormat Cell	s	
12						Column <u>W</u> id	dth	
13						<u>H</u> ide		
14								
15						<u>U</u> nhide		
16								
17								

10. Select the display format **Text**, and click the **OK** button. If this processing is skipped, information on the bit addresses **.00** and **.10** of BOOL-type variables will be lost.

Number	Alignment	Font	Border	Fill	Protection			
Vulliber	Alighthetic	FOIL	Border	FIII	FIOLECLION			
Category:		_						
General	1	Samp	e					
Number Currency								
Accountin	g	Text for	mat cells an	e treated as	text even wh	en a number i	s in the cel	П.
Date		The cel	is displayed	d exactly as	entered.			
Time Percentag	ie.							
Fraction								
Scientific								
Text Special								
Custom								
		~						

11. With the cell A2 selected, paste the copied variable information.

	А	В	С	D	E
1					
2	PTMEM	AutoGen1	BOOL	\$B0	
3	PTMEM	AutoGen2	CHANNEL	\$W0	
4	HOST3	AutoGen3	BOOL	00000.00	
5	HOST3	AutoGen4	BOOL	00000.01	
6	HOST3	AutoGen5	BOOL	00000.02	
7	HOST3	AutoGen6	BOOL	00000.03	
8	HOST3	AutoGen7	BOOL	00000.04	

### 12. Add the following words to the first row. This step is used for filtering below.

Ihis	step is used to	r filtering below.		
	А	В	С	D
1	HOST Name	Variable name	data type	address
2	PTMEM	AutoGen1	BOOL	\$B0

### 13. With the cell A1 selected, click Home – Sort & Filter – Filter.

File Home	Insert Page I	Layout Fo	ormulas	Data Re	eview View	Develo	oper Helj	р						Comments
	「シック I <u>U</u> ~   田 ~			= = = °	≫~ eb ≣ = ≣ = =	Protect	General 🖙 ~ %	• • • • • •	Conditio	onal Formata	as Cell	Insert ~ Delete ~ Format ~	· 🐺 ·	Sort & Find & Analy Filter * Select * Data
Clipboard 😼	Font		۲ <u>م</u>	Alignn	nent F	Protection	Numb	ber f	2	Styles		Cells		<sup>A</sup> ↓ Sort A to Z
A1 $\rightarrow$ i $\times \checkmark f_x$ HOST Name $Z_{A}$													A Sort Z to A	
А	В	С	D	E	F	G	Н	1	J	К	L	М	N	
1 HOST Name	Variable name	data type	address											Filter
2 PTMEM	AutoGen1	BOOL	\$B0											0

14. Save the Excel file with a desired name.

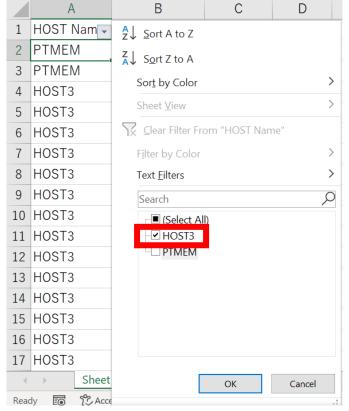
## 3-1-2 Changing Variable Names in Host Addresses

1. In order to change the variable names, select a column D, and copy & paste it to another empty column.

	g	ouco, moy are				
	А	В	С	D	E	F
1	HOST Name	Variable name	data type	address		
2	PTMEM	AutoGen1	BOOL	\$B0		\$B0
3	PTMEM	AutoGen2	CHANNEL	\$W0		\$W0
4	HOST3	AutoGen3	BOOL	00000.00		00000.00
5	HOST3	AutoGen4	BOOL	00000.01		00000.01
6	HOST3	AutoGen5	BOOL	00000.02		00000.02
7	HOST3	AutoGen6	BOOL	00000.03		00000.03
8	HOST3	AutoGen7	BOOL	00000.04		00000.04
9	HOST3	AutoGen8	BOOL	00000.05		00000.05
10	HOST3	AutoGen9	BOOL	00000.06		00000.06
11	HOST3	AutoGen10	BOOL	00000.07		00000.07

In the following case, they are copied to from a column D to a column F.

2. Select **Host Name** from filters in the column A, and click the **OK** button. In the case of the figure below, the host name is **HOST3**.



- BOOL Variable Name Change
- 1. Select **BOOL** from filters in the column C, and click the **OK** button.

	A	В	C	
1	Ž↓ Sort A to Z			•
2	Z↓ S <u>o</u> rt Z to A			
3	Sor <u>t</u> by Colo	r	>	L
4				۰.
5	Sheet <u>V</u> iew		>	_
6	🔀 <u>C</u> lear Filter I	From "data type'	1	
7	Filter by Cold	r	>	
8	Text <u>F</u> ilters		>	
9	Search		Q	
10	Select			
11	BOOL			
12		IEL		
13				
14				
15				
16				
17				
-		ОК	Cancel	
Rea				

### 2. Select the column where the addresses were copied

	А	В	С	D	E	F
1	HOST Nam 🐙	Variable nam 🗸	data type🐙	address 🗸		
4	HOST3	AutoGen3	BOOL	00000.00		00000.00
5	HOST3	AutoGen4	BOOL	00000.01		00000.01
6	HOST3	AutoGen5	BOOL	00000.02		00000.02
7	HOST3	AutoGen6	BOOL	00000.03		00000.03
8	HOST3	AutoGen7	BOOL	00000.04		00000.04
9	HOST3	AutoGen8	BOOL	00000.05		00000.05
10	HOST3	AutoGen9	BOOL	00000.06		00000.06

3. Click the Ctrl + H keys on the keyboard to display the Find and Replace dialog.

Find and Replace	? ×
Fin <u>d</u> Replace	
Find what:	For <u>m</u> at ▪
Replace with: V No Format Set	For <u>m</u> at ▪
Within:     Sheet     Image: Match case       Search:     By Rows     Image: Match case       Look in:     Formulas     Image: Match case	Op <u>t</u> ions < <
Replace <u>All</u> <u>Replace</u> Find All	Close

4. Set the text string to find and the text string after replaced respectively to . and \_, and click the **Replace All** button.

When the replacement is completed successfully, . used in bit input will be replaced with \_. The reason this variable name replacement is performed is that . cannot be used under the variable naming convention of NS.

Find and Replace	? ×
Fin <u>d</u> Re <u>p</u> lace	Microsoft Excel
Fi <u>n</u> d what: R <u>e</u> place with:	All done. We made 18 replacements
	tire cell c <u>o</u> ntents
Replace <u>A</u> ll <u>R</u> eplace F <u>i</u> n	d All <u>Eind Next</u> Close

5. Set the text string to find and the text string after replaced respectively to *WR* and *WR\_*, and click the **Replace All** button.

The reason this name replacement is performed is that the addresses cannot be used as they are under the variable name convention of NS.

*WR* was replaced in this step; however, when the other memory area *HR*, *AR*, *DM*, *EM*, *EM0\_18*, *TU*, or *CU* is used, insert \_ between the memory area and the address in the same way.

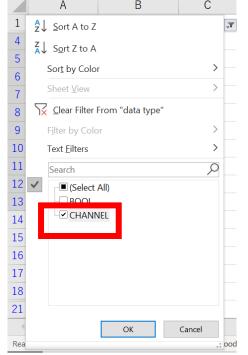
Find and	Replace					?	$\times$
Fin <u>d</u>	Re <u>p</u> lace			Microso	oft Excel		×
Fi <u>n</u> d wha	: WR						
R <u>e</u> place v	vith: WR_				All done. We ma	de 4 replacer	ments.
Wit <u>h</u> in:	Sheet		] Match (		ОК		
<u>S</u> earch:	By Rows		Match e		. <u>.</u>		
<u>L</u> ook in:	Formulas	~	Match <u>k</u>	<u>i</u> yte		Op <u>t</u> ions	s < <
Replace	<u>A</u> II <u>F</u>	<u>R</u> eplace	Fj	ind All	<u>F</u> ind Next	Clo	ose

6. Prefix *CIO*\_ to the address using the CIO area.

This is because no value can be entered in the head under the variable name convention of NS.

	А	В	С	D	Е	F	G
1	HOST Nam 🛪	Variable nam 🗸	data typ <b>∉</b> , <b>⊤</b>	address -			
4	HOST3	AutoGen3	BOOL	00000.00		CIO_0000	0_00
5	HOST3	AutoGen4	BOOL	00000.01		CIO_0000	0_01
6	HOST3	AutoGen5	BOOL	00000.02		CIO_0000	0_02

- CHANNEL Variable Name Change
- 1. Select **CHANNEL** from filters in the column C, and click the **OK** button.



#### 2. Select the column where the addresses were copied.

	А	В	С	D	E	F
1	HOST Nam 🐙	Variable nam 🗸	data typ∉ <b>"</b> r	address 🗸		
19	HOST3	AutoGen19	CHANNEL	00000		00000
20	HOST3	AutoGen20	CHANNEL	DM00000		DM00000
26	HOST3	AutoGen26	CHANNEL	DM00001		DM00001
27	HOST3	AutoGen27	CHANNEL	DM00002		DM00002
28	HOST3	AutoGen28	CHANNEL	DM00003		DM00003
29	HOST3	AutoGen29	CHANNEL	DM00004		DM00004
30	HOST3	AutoGen30	CHANNEL	DM00010		DM00010
31	HOST3	AutoGen31	CHANNEL	DM00020		DM00020

3. Click the Ctrl + H keys on the keyboard to display the Find and Replace dialog.

Find and	Replace	?	×
Fin <u>d</u>	Replace		
Fi <u>n</u> d wha	t: No Format Set	For <u>m</u> a	at •
Replace v	with: Vo Format Set	For <u>m</u> a	at 🝷
Wit <u>h</u> in:	Sheet Match case		
Search:	By Rows Match entire cell contents		
<u>L</u> ook in:	Formulas V	Options	<<
Replace	<u>A</u> ll <u>R</u> eplace Find All <u>F</u> ind Next	Clo	ose

4. Set the text string to find and the text string after replaced respectively to *DM* and *DM\_*, and click the **Replace All** button.

The reason this name replacement is performed is that the addresses cannot be used as they are under the variable name convention of NS.

*DM* was replaced in this step; however, when the other memory area *HR*, *AR*, *DM*, *EM*, *EM0\_18*, *T*, or *C* is used, insert \_ between the memory area and the address in the same way.

Find and Replace	? ×
Fin <u>d</u> Replace	
Find what: DM	No Format Set For <u>m</u> at •
Replace with: DM_ Microsoft Ex	icel X
Within: Sheet   Matc Search: By Rows  Matc	done. We made 6 replacements.
Look in: Formulas	ОК
Replace All Replace Find All	Eind Next Close

5. Prefix CIO\_ to the address using the CIO area.

This is because no value can be entered in the head under the variable name convention of NS.

	А	В	С	D	E	F
1	HOST Nam 🐙	Variable nam 🗸	data typ€ <b>,</b> ∓	address 🗸		
19	HOST3	AutoGen19	CHANNEL	00000		CIO_00000
20	HOST3	AutoGen20	CHANNEL	DM00000		DM_00000
26	HOST3	AutoGen26	CHANNEL	DM00001		DM_00001
27	HOST3	AutoGen27	CHANNEL	DM00002		DM_00002
28	HOST3	AutoGen28	CHANNEL	DM00003		DM_00003
29	HOST3	AutoGen29	CHANNEL	DM00004		DM_00004
30	HOST3	AutoGen30	CHANNEL	DM00010		DM_00010
31	HOST3	AutoGen31	CHANNEL	DM00020		DM_00020

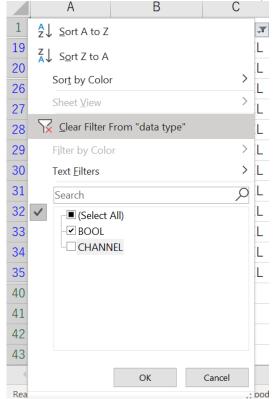
6. Clear the filters in the column A and the column C.

# 3-1-3 Changing Variable Names in NS Internal Addresses

	A		В	С	D
1	HOST Nam	r <b>, r</b> _ 2↓	<u>S</u> ort A to Z		
4	HOST3	z	Sort Z to A		
5	HOST3				>
6	HOST3		Sor <u>t</u> by Color		•
7	HOST3		Sheet <u>V</u> iew		>
8	HOST3	X	<u>C</u> lear Filter Fro	om "HOST Nan	ne"
9	HOST3		F <u>i</u> lter by Color		>
10	HOST3		Text <u>F</u> ilters		>
11	HOST3		Search		Q
12	HOST3	$\checkmark$	Select Al	l)	,
13	HOST3			•	
14	HOST3				
15	HOST3			_	
16	HOST3				
17	HOST3				
18	HOST3				
21	HOST3				
-	⊳ Sh	eet	Γ	ОК	Cancel
Rea	dv 24 of 38 re	cord			

1. Select **PTMEM** from filters in the column A, and click the **OK** button.

- BOOL Variable Name Change
- 1. Select **BOOL** from filters in the column C, and click the **OK** button.



2. Select the column where the addresses were copied.

		А	В	С	D	E	F
	1	HOST Nam 🖵	Variable nam 🗸	data typ <b>∉</b> , <b>⊤</b>	address -		
	2	PTMEM	AutoGen1	BOOL	\$B0		\$B0
4	40						
	41						
4	42						

3. Click the Ctrl + H keys on the keyboard to display the Find and Replace dialog.

Find and Replace	?	$\times$
Fin <u>d</u> Replace		
Find what:     V     No Format Set       Replace with:     V     No Format Set	For <u>m</u> at. For <u>m</u> at.	
Within:     Sheet     Image: Match gase       Search:     By Rows     Image: Match entire cell contents       Look in:     Formulas     Image: Match byte	Op <u>t</u> ions <	< <
Replace <u>A</u> ll <u>Replace</u> Find All <u>Find Next</u>	Clos	e

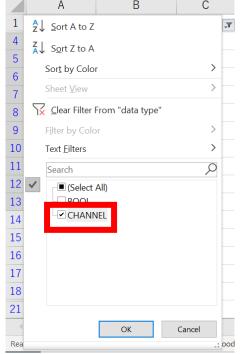
4. Set the text string to find and the text string after replaced respectively to \$ and a blank, and click the **Replace All** button. The reason this name replacement is performed is that \$ cannot be used under the variable

name convention of NS. ? Find and Replace  $\times$ Re<u>p</u>lace Fin<u>d</u> \$ Find what:  $\sim$  $\sim$ Replace with: Options >> Find All Replace <u>A</u>ll Eind Next Close <u>R</u>eplace

5. Set the text string to find and the text string after replaced respectively to *B* and *B*\_, and click the **Replace All** button.

Find and Replace			?	$\times$
Fin <u>d</u> Replace				
Find what:				×.
Replace with: B_			Ontinen	
			Op <u>t</u> ions	>>
Replace <u>A</u> ll <u>R</u> eplace	F <u>i</u> nd All	<u>F</u> ind Next	Clo	se

- CHANNEL Variable Name Change
- 1. Select **CHANNEL** from filters in the column C, and click the **OK** button.



### 2. Select the column where the addresses were copied.

		А	В	С	D	E	F
	1	HOST Nam 🐙	Variable nam 🗸	data type🗶	address -		Ī
	3	PTMEM	AutoGen2	CHANNEL	\$W0		\$W0
4	10						
4	11						
,	12						

3. Click the Ctrl + H keys on the keyboard to display the Find and Replace dialog.

Find and Re	eplace	? ×
Fin <u>d</u>	Replace	
Fi <u>n</u> d what:	✓ No Format Set	For <u>m</u> at ▪
Replace wit	th: No Format Set	For <u>m</u> at •
	Sheet Match case	
Look in:	Formulas	Op <u>t</u> ions <<
Replace <u>A</u> l	I <u>R</u> eplace Find All <u>Find Next</u>	Close

4. Set the text string to find and the text string after replaced respectively to \$ and a blank, and click the **Replace All** button.

The reason this name replacement is performed is that \$ cannot be used under the variable name convention of NS.

Find and Replace	? ×
Fin <u>d</u> Replace	
Find what: \$	~
	Op <u>t</u> ions >>
Replace <u>All</u> <u>Replace</u> Find All <u>Find</u>	l Next Close

5. Enter W and  $W_{-}$  into the text string to find and the text string after replaced respectively, and click the **Replace All** button.

Find and Repl	ace	? ×
Fin <u>d</u> Re	place	
Fi <u>n</u> d what: R <u>e</u> place with:	W	~
n <u>e</u> piace main		Op <u>t</u> ions >>
Replace <u>A</u> ll	Replace Find All Find Next	Close

- 6. Clear the filters in the column A and the column C.
- 7. Select and cut the cells containing the variable names in the column where the variable names were edited.

	A	В	С	D	E	F	G
1	HOST Nam -	Variable nam 🗸	data typ∈ -	address 🗸	_		
2	PTMEM	AutoGen1	BOOL	B0		B_0	
3	PTMEM	AutoGen2	CHANNEL	\$W0		W_0	
4	HOST3	AutoGen3	BOOL	00000.00		CIO_0000	0_00
5	HOST3	AutoGen4	BOOL	00000.01		CIO_0000	)_01
6	HOST3	AutoGen5	BOOL	00000.02		CIO_0000	0_02
7	HOST3	AutoGen6	BOOL	00000.03		CIO_0000	0_03
8	HOST3	AutoGen7	BOOL	00000.04		CIO_0000	0_04
9	HOST3	AutoGen8	BOOL	00000.05		CIO_0000	)_05
10	HOST3	AutoGen9	BOOL	00000.06		CIO_0000	0_06
11	HOST3	AutoGen10	BOOL	00000.07		CIO_0000	)_07
10	LACTO	Ato Con 11	POOL	00000 00			

8. Paste the cut variables to the column B.

	А	В	С	D	Е	F
1	HOST Nam -	Variable nam	data typ∉ -	address -		
2	PTMEM	B_0	OOL	B0		
3	PTMEM	W_0	HANNEL	\$W0		
4	HOST3	CIO_00000_00	OOL	00000.00		
5	HOST3	CIO_00000_01	OOL	00000.01		
6	HOST3	CIO_00000_02	OOL	00000.02		
7	HOST3	CIO_00000_03	OOL	00000.03		
8	HOST3	CIO_00000_04	OOL	00000.04		
9	HOST3	CIO_00000_05	OOL	00000.05		
10	HOST3	CIO_00000_06	BOOL	00000.06		
11	HOST3	CIO 00000 07	OOL	00000.07		



# Precautions for Correct Use

The maximum number of global variables that NA can register is 35,000, with 30,000 variables for communications with host addresses.

Be careful not to exceed the maximum registration limit during conversion. The following shows an extract from *Programmable Terminal User's Manual (Software), 4-1-1* Variables.

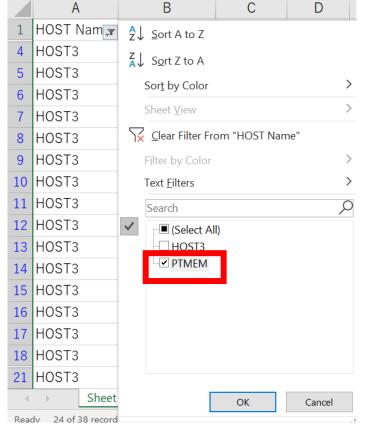
	Variable type	Description		
Global variables		Global variables are defined by the user and can be accessed from anywhere in the project. You can register up to 35,000 total in the entire project and up to 30,000 for		
		each connected device.*1		
		Global variables are declared in the HMI global variable table.		
		Global variables include external variables and internal variables, which are described below.		
E	External variables	External variables are global variables that are used to access data in Controllers and other connected devices.		
		External variables are assigned to device variables in the variable mapping.		
h	nternal variables	An internal variable can be used only within the HMI.		
		All global variables that are not external variables are internal variables.		
	System-defined variables	System-defined variables are provided in advance in the HMI. The names and all attributes are defined by the system. They have specific functions.		
		You cannot change the variable names or any other attributes of these variables.		
Subro	utine variables	Subroutine variables are defined by the user and are used only within subroutines.		
		Subroutine variables are declared in Dim statements in page subroutines or global subroutines.		
		You can use all of the data types that are supported by Visual Basic.		

# 3-1-4 Converting Data Type of Variables into Data Type for NA

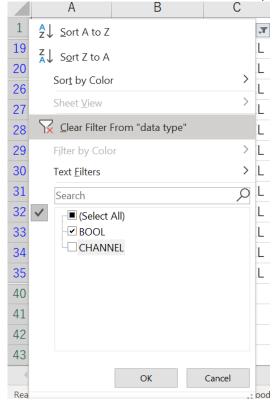
## BOOL Data Type Conversion

For the BOOL variables in internal addresses of NS, the data type changes when they are replaced with those of NA, so some corrections are required.

1. Select **PTMEM** from filters in the column A, and click the **OK** button.

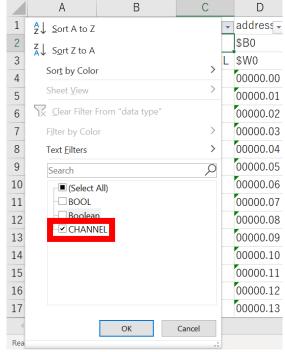


2. Select **BOOL** from filters in the column C, and click the **OK** button. A B C

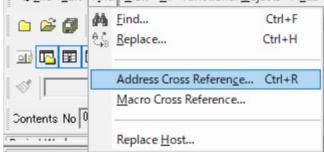


- Using Find and Replace Replace All, replace BOOL with Boolean.
   HOST Nam, Variable nam ↓ data typ ↓ addres ↓
   PTMEM B\_0 Boolean \$B0
- 4. Clear the filters in the column A and the column C.

- CHANNEL Data Type Conversion
- 1. Select **CHANNEL** from filters in the column C, and click the **OK** button.



2. Open CX-Designer, and click **Find** – **Address Cross Reference** from the menu bar.



3. When the dialog is displayed, set the range to **Whole Project**, and click the **Find** button.

Address Cross Reference	×
	Find
	Cancel
Range	
C Current Screen	
Whole Project	
C Screens	
0	0 🚊 🗖 As Sheet No.
C Categories	<b></b>

4. The list of addresses used in NS screens is displayed in the Output Tab Page.

Search	iearch Result: 28 entries found Find From:Communic							
Page	ID	Host	Name	Address	I/O Comment	Label	Object Comment	Detailed Information
0000	PB0000	HOST3	AutoGen3	00000.00				ON/OFF Button : Write Address
0000	PB0001	HOST3	AutoGen4	00000.01				ON/OFF Button : Write Address
0000	PB0002	HOST3	AutoGen5	00000.02				ON/OFF Button : Write Address
0000	PB0003	HOST3	AutoGen6	00000.03				ON/OFF Button : Write Address
0000	PB0004	HOST3	AutoGen7	00000.04				ON/OFF Button : Write Address
0000	PB0005	HOST3	AutoGen8	00000.05				ON/OFF Button : Write Address
0000	PB0006	HOST3	AutoGen9	00000.06				ON/OFF Button : Write Address
0000	PB0007	HOST3	AutoGen1	00000.07				ON/OFF Button : Write Address
0000	PB0008	HOST3	AutoGen1	00000.08				ON/OFF Button : Write Address
0000	PB0009	HOST3	AutoGen1	00000.09				ON/OFF Button : Write Address
مممم	010000	LIOCTA	ب مصحفية أ	00000 10	,		İ	ON OFF DUMEN , WHILE Address
	Page           0000           0000           0000           0000           0000           0000           0000           0000           0000           0000           0000           0000           0000           0000           0000           0000           0000           0000           0000	Page         ID           0000         PB0000           0000         PB0001           0000         PB0002           0000         PB0003           0000         PB0004           0000         PB0005           0000         PB0006           0000         PB0006           0000         PB0007           0000         PB0008           0000         PB0009	Page         ID         Host           0000         PB0000         HOST3           0000         PB0001         HOST3           0000         PB0002         HOST3           0000         PB0003         HOST3           0000         PB0004         HOST3           0000         PB0005         HOST3           0000         PB0006         HOST3           0000         PB0006         HOST3           0000         PB0007         HOST3           0000         PB0008         HOST3           0000         PB0009         HOST3           0000         PB0009         HOST3	0000         PB0000         HOST3         AutoGen3           0000         PB0001         HOST3         AutoGen4           0000         PB0002         HOST3         AutoGen5           0000         PB0003         HOST3         AutoGen6           0000         PB0004         HOST3         AutoGen6           0000         PB0005         HOST3         AutoGen6           0000         PB0006         HOST3         AutoGen9           0000         PB0006         HOST3         AutoGen9           0000         PB0006         HOST3         AutoGen1           0000         PB0008         HOST3         AutoGen1           0000         PB0009         HOST3         AutoGen1	Page         ID         Host         Name         Address           0000         PB0000         HOST3         AutoGen3         00000.00           0000         PB0001         HOST3         AutoGen3         00000.00           0000         PB0001         HOST3         AutoGen4         0000.01           0000         PB0002         HOST3         AutoGen6         0000.02           0000         PB0003         HOST3         AutoGen6         0000.03           0000         PB0004         HOST3         AutoGen7         0000.04           0000         PB0005         HOST3         AutoGen8         0000.05           0000         PB0006         HOST3         AutoGen9         0000.06           0000         PB0007         HOST3         AutoGen1         0000.07           0000         PB0007         HOST3         AutoGen1         0000.08           0000         PB0008         HOST3         AutoGen1         0000.08           0000         PB0008         HOST3         AutoGen1         0000.08	Page         ID         Host         Name         Address         I/O Comment           0000         PB0000         HOST3         AutoGen3         00000.00         0000.00           0000         PB0001         HOST3         AutoGen4         00000.01         0000.01           0000         PB0002         HOST3         AutoGen5         00000.02         0000.02         0000.03         0000         PB0003         HOST3         AutoGen7         0000.04         0000.04         0000.04         0000.04         0000.05         0000.05         0000.05         0000.06         0000.06         0000.06         0000.07         0000.06         0000.07         0000.07         0000.08         0000.07         0000.08         0000.09         0000.09         0000.09         0000.09         0000.09         0000.09         0000.09         0000.09         0000.09         0000.09         0000.09         0000.09         0000.09         0000.010         0000.09         0000.09         0000.09         0000.09         0000.09         0000.09         0000.09         0000.09         0000.09         0000.09         0000.09         0000.09         0000.09         0000.09         0000.09         0000.09         0000.09         00000.09         0000.09         00000.09	Page         ID         Host         Name         Address         I/O Comment         Label           0000         PB0000         HOST3         AutoGen3         00000.00         0000	Page         ID         Host         Name         Address         I/O Comment         Label         Object Comment           0000         PB0000         HOST3         AutoGen3         0000.00   <

3 Output À Found Results À Validation Results À Process Results /

- 5. Click the address column twice. Clicking this sorts the addresses in ascending order.
- 6. Among the cross-references, double-click a location where the address is specified. In the case of the image below, select the numeral display & input object using DMO.

	Search Result: 28 entries found							Find	
1	Page	ID	Host	Name	Address	I/O Comment	Label	Object Comment	Detailed
	0000	PB0015	HOST3	AutoGen2	00000.15				ON/OFF Button : Write Address
	0000	NUM0020	HOST3	AutoGen2	DM00000				Numeral Display & Input : Address
	0000	NUM0021	HOST3	AutoGen2	DM00001				Numeral Display & Input : Address
	0000	10.0100000	LICCTO	A . A . A	D1400000	1 1		1	NU UNU AT LAU

**F** 1

7. Double-clicking it displays the setting dialog for the object using the selected address. In the case of the following numeral display & input object, the data type set as the storage type represents the data type used in the set address.

In the case of the image below, the storage type highlight in red is the *INT* type, so it turns out that the *INT* type is in use.

You can also confirm that the setting communications address is *DM00000*. Numeral Display & Input - NUM0020

General   Text   Background   Keypad   Frame   Max/Min   F	licker Write	e
Object Comment		
Numeral Display Type		
Display Type Decimal 👻		Fo
Storage Type INT(Signed 1 word)		De
-32768 - 32767		
Unit&Scale		
Set Unit&Scale No. 0 🔆 Set1 Unit	_	S
Indirect Specification of Unit&Scale No.		I
Address	Set2	
Address		
Address CI1:DM00000	Set3	

8. Open Excel and correct the data type in the column C of the row where the address is *DM00000* to the corresponding data type.

The corresponding data type varies according to whether the address is a host address or an NS internal address.

For the host address, you only have to enter the data type set in NS as it is; however, for the NS internal address, you need to correct it to the data type corresponding to that for NA. The following shows an example of the host address.

	Ā	В	С	D
1	HOST Nam 🗸	Variable nam 🗸	data type∓	address 🗸
3	PTMEM	W_0	CHANNEL	\$W0
19	HOST3	CIO_00000	CHANNEL	00000
20	HOST3	DM_00000	INT	DM00000
26	HOST3	DM_00001	CHANNEL	DM00001
27	HOST3	DM_00002	CHANNEL	DM00002

The data type of variables in NS internal addresses should be corrected according to the
following data type correspondence table.

Data type for NA
Short
Integer
Long
UShort
UShort
UShort
UInteger
UInteger
UInteger
Single
Double

9. Repeat steps 6 to 8 to correct the data type of CHANNEL variables.

# Additional Information

In NA, variables can be converted into an array.

Screen creation can be more efficient by creating an array, so we will describe some examples. Specifically, when consecutive addresses are displayed in the screen, you can copy some objects by changing the array element through the use of the **Duplicating objects** function of Sysmac Studio.

Decide whether to actually create an array, according to whether the same data type is used in consecutive CHs judging from the address usage.

#### • Converting BOOL Variables into Array

As shown below, we will describe how to create an array when 16 bits of 0CH are all used in NS.

HOST Nam -	Variable nam 🗸	data type🛪	address 🗸
HOST3	CIO_00000_00	BOOL	00000.00
HOST3	CIO_00000_01	BOOL	00000.01
HOST3	CIO_00000_02	BOOL	00000.02
HOST3	CIO_00000_03	BOOL	00000.03
HOST3	CIO_00000_04	BOOL	00000.04
HOST3	CIO_00000_05	BOOL	00000.05
HOST3	CIO_00000_06	BOOL	00000.06
HOST3	CIO_00000_07	BOOL	00000.07
HOST3	CIO_00000_08	BOOL	00000.08
HOST3	CIO_00000_09	BOOL	00000.09
HOST3	CIO_00000_10	BOOL	00000.10
HOST3	CIO_00000_11	BOOL	00000.11
HOST3	CIO_00000_12	BOOL	00000.12
HOST3	CIO_00000_13	BOOL	00000.13
HOST3	CIO_00000_14	BOOL	00000.14
HOST3	CIO_00000_15	BOOL	00000.15

## 1. Change the data type of the variable CIO\_00000\_00 to BOOL[16].

HOST Nam -	Variable nam 🗸	data type∓	address 🗸
HOST3	CIO_00000_00	BOOL[16]	00000.00
HOST3	CIO_00000_01	BOOL	00000.01
HOST3	CIO_00000_02	BOOL	00000.02

## 2. Delete the variables from CIO\_00000\_01 to CIO\_00000\_15.

HOST Nam -	Variable nam 🗸	data type🖵	address 🗸
HOST3	CIO_00000_00	BOOL[16]	00000.00

• Converting Numerical Variables into Array

As shown below, we will describe how to create an array when the UINT type is used for DM0 to 9CH all in NS.

HOST Nam -	Variable nam 🗸	data typ∉ <b>,</b> ∓	address 🗸
HOST3	DM_00000	UINT	DM00000
HOST3	DM_00001	UINT	DM00001
HOST3	DM_00002	UINT	DM00002
HOST3	DM_00003	UINT	DM00003
HOST3	DM_00004	UINT	DM00004
HOST3	DM_00005	UINT	DM00005
HOST3	DM_00006	UINT	DM00006
HOST3	DM_00007	UINT	DM00007
HOST3	DM_00008	UINT	DM00008
HOST3	DM_00009	UINT	DM00009

## 1. Change the data type of the variable DM\_00000 to UINT[10].

HOST Nam 🗸	Variable nam 🗸	data type∓	address 🗸
HOST3	DM_00000	UINT[10]	DM00000
HOST3	DM_00001	UINT	DM00001
HOST3	DM_00002	UINT	DM00002

## 2. Delete the variables from *DM\_00000\_01* to *DM\_00009*.

HOST Nam -	Variable nam 🗸	data type🖵	address 🗸
HOST3	DM_00000	UINT[10]	DM00000

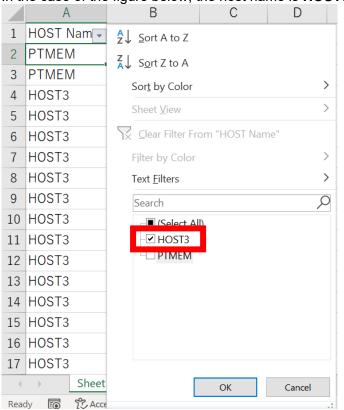
Make an array of the sequential CH numbers using the same data type.

When you create an array, we recommend that the address at the end start with 0 to make it clearer.

Although there are no restrictions on the number of array elements, the number of elements should be about 100, because performance will be affected if excessive CHs of elements are secured, for example, all the areas of DM are converted into an array.

## 3-1-5 Reflecting Variable Tables in Those of Sysmac Studio

- How to Reflect in the Variable Tables of Host Addresses
- 1. Select **Host Name** from filters in the column A, and click the **OK** button. In the case of the figure below, the host name is **HOST3**.



2. Right-click the column D and click Insert.

A	В	С	D		E	F
HOST Nam 🐙	Variable nam 🗸	data typ∉ -	address 🗔	X	Cu <u>t</u>	
HOST3	CIO_00000_00	BOOL[16]	00000.00		<u>C</u> opy	
HOST3	CIO_00000	CHANNEL	00000	ĥ	Paste (	Options:
HOST3	DM_00000	UINT[10]	DM00000			
HOST3	CIO_00001_00	BOOL	00001.00		a	
HOST3	CIO_00001_01	BOOL	00001.01		Paste <u>S</u>	pecial
HOST3	CIO_00001_02	BOOL	00001.02		<u>I</u> nsert	
HOST3	CIO_00001_03	BOOL	00001.03		Delete	
HOST3	DM_00010	INT	DM00010		_	
HOST3	DM_00020	INT	DM00020		Clear C	o <u>n</u> tents
HOST3	DM_00011	INT	DM00011	□- □-	<u>F</u> ormat	Cells
HOST3	DM_00012	INT	DM00012		Columr	<u>W</u> idth
HOST3	DM_00013	INT	DM00013		Hide	
HOST3	DM_00014	INT	DM00014		_	
					Unhido	

A	В	С	D	E
HOST Nam 🐙	Variable nam 🗸	data typ∈ -	v	\star dress 🗸
HOST3	CIO_00000_00	BOOL		00000.00
HOST3	CIO_00000_01	BOOL		00000.01
HOST3	CIO_00000_02	BOOL		00000.02
HOST3	CIO_00000_03	BOOL		00000.03
HOST3	CIO_00000_04	BOOL		00000.04
HOST3	CIO_00000_05	BOOL		00000.05
HOST3	CIO_00000_06	BOOL		00000.06
HOST3	CIO_00000_07	BOOL		00000.07
HOST3	CIO_00000_08	BOOL		00000.08
HOST3	CIO_00000_09	BOOL		00000.09
HOST3	CIO_00000_10	BOOL		00000.10
HOST3	CIO_00000_11	BOOL		00000.11
HOST3	CIO_00000_12	BOOL		00000.12
HOST3	CIO_00000_13	BOOL		00000.13
HOST3	CIO_00000_14	BOOL		00000.14
HOST3	CIO_00000	CHANNEL		00000

3. With the variable tables in columns B to E selected, press the **Ctrl + C** keys on the keyboard to copy the cells.

4. Create a new Excel file, put a cursor on the cell A1, and press the **Ctrl + V** keys on the keyboard to paste them.

	А	В	С	D
1	CIO_00000_00	BOOL		00000.00
2	CIO_00000_01	BOOL		00000.01
3	CIO_00000_02	BOOL		00000.02
4	CIO_00000_03	BOOL		00000.03
5	CIO_00000_04	BOOL		00000.04
6	CIO_00000_05	BOOL		00000.05
7		PAOL		00000.00

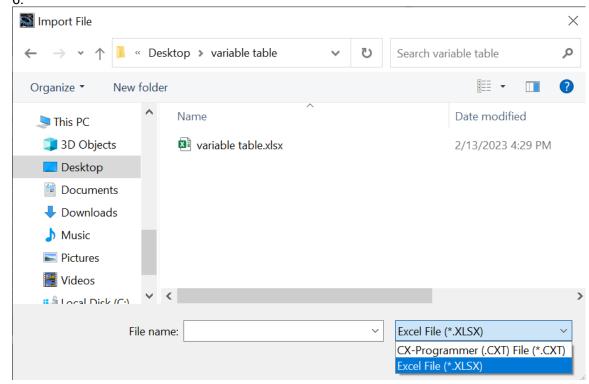
- 5. Save the Excel file with a desired name.
- 6. Open the Sysmac Studio project file created in Section 2, and double-click **Configurations** and Setup – Device References – Registered Device in Multiview Explorer.

Multiview Explorer	HOST3 🗙			
HMI_NA5_0 V	Device Configuration —		Communications Co	nfiguration
▼ Configurations and Setup	Device Name	HOST3	Network Address	1 🌲
▼	Device Vendor	Omron 🔻	Node Address	1 🌲
L Internal Devices	Device Series	CJ	Frame Length	2000 🌲 bytes
HOST3	Communication Driver	FINS Ethernet	Timeout	2 🛔 seconds
🔹 🏕 Variable Mapping				
티 HMI Settings			Encoding	us-ascii 🔻
📾 Security Settings			Communication E	rror Indication

7. Click the Import button under Import variable information from a file.

Multiview Explorer	HOST3 X				
HMI_NA5_0	Device Configuration —			Communications Co	nfiguration
<ul> <li>Configurations and Setup</li> </ul>	Device Name	HOST3		Network Address	1 🌻
V 🖪 Device References	Device Vendor	Omron		Node Address	1 🌲
∟ 🛙 Internal Devices	Device Series	CJ	<b>•</b>	Frame Length	2000 🗘 bytes
HOST3	Communication Driver	FINS Ethernet		   Timeout	2 🛔 seconds
✓ Variable Mapping				Encoding	us-ascii 🔻
티 HMI Settings				Communication E	
Security Settings					
🗨 Troubleshooter	_ Data Types				
A Language Settings	Update HMI data types v	with any changes that	have beer	n made on this device i	reference
Operation Log Settings	Update				
► HMI					
	Importing ———				
	Import variable and data	type information from	m a physic	al device	
	Import	Update	]		
	Import variable informati	ion from a file			
	Import				
	Status of last 5 import at	tempts Not Importe	d.		<b></b>

8. Set the file type to display to *Excel File* (\*.*XLSX*), and select and import the file saved in step 6.



9. When it is imported successfully, you will be informed of that in the import status field.

Multiview Explorer 👻 📮	HOST3 🗙					
HMI_NA5_0 🔻	C Device Configuration —			Communications Config	uration ———	
<ul> <li>Configurations and Setup</li> </ul>	Device Name	HOST3		Network Address		1 🌻
▼  B Device References	Device Vendor	Omron	<b>•</b>	Node Address		1 🌻
∟∰ Internal Devices	Device Series	CJ	<b>•</b>	Frame Length		2000 🗘 bytes
HOST3	Communication Driver	FINS Ethernet	<b>T</b>	Timeout		2 🚖 seconds
Variable Mapping				Encoding	us-ascii	
다 HMI Settings				Communication Error		
<ul> <li>Security Settings</li> <li>Troubleshooter</li> </ul>						
	Data Types ———					
▲ Language Settings	Update HMI data types v	vith any changes that have been r	nade on this device	e reference		
Operation Log Settings	Update					
► HMI						
	Importing —					
	Import variable and data	type information from a physical	device			
	Import	Update				
	Import variable informat	ion from a file				
	Import					
	Statuc of lact 5 import at	tempts Import from 'C:\Users\90	5DD9249\Dackton	uariahla tahla\uariahla tahla	vlev' successful on '2	022/02/12 15:40:20'
	Status or last 5 import at	tempts import nom C:\Users\90	JPP0240 Desktop		exist successiul on 2	023/02/13 13:49:38

10. When a set device is displayed under the registered device, right-click it and click **Create Device Variable**.

Multiview Explorer	HOST3	🧬 Variable Mapping 🗙			
HMI_NA5_0 🔻	Position	Port		Data Type	Variable
		Configured Devices	_		
<ul> <li>Configurations and Setup</li> </ul>		► HOST3	Cut		
🔹 🕷 Device References					
∟ 🖩 Internal Devices			Сору		
► 🗄 HOST3			Paste		
Variable Mapping					
찌 HMI Settings					
🖻 Security Settings			C		
R Troubleshooter			Search		
A Language Settings			Expand/Co	llapse All	
Operation Log Settings			Create Dev	ice Variable	
► HMI			Create Dev	ice Variable with	Prefix

11. Click ► in the left of the set device to expand Variable Mapping, and check that device variables are generated in the column of Variable.

Multiview Explorer 👻 🗣	НОЅТЗ	🥔 Variable Mapping 🗙		
HMI_NA5_0	Position	Port	Data Type	Variable
HMI_NA5_0 🔻		Configured Devices		
Configurations and Setup		▼ HOST3		
▼		CIO_00000_00	BOOL	HOST3_CIO_00000_00
∟		CIO_00000_01	BOOL	HOST3_CIO_00000_01
► I HOST3		CIO_00000_02	BOOL	HOST3_CIO_00000_02
Variable Mapping		CIO_00000_03	BOOL	HOST3_CIO_00000_03
- 11 5		CIO_00000_04	BOOL	HOST3_CIO_00000_04
디 HMI Settings		CIO_00000_05	BOOL	HOST3_CIO_00000_05
Security Settings		CIO_00000_06	BOOL	HOST3_CIO_00000_06
A Troubleshooter		CIO_00000_07	BOOL	HOST3_CIO_00000_07
A Language Settings		CIO_00000_08	BOOL	HOST3_CIO_00000_08
Operation Log Settings		CIO_00000_09	BOOL	HOST3_CIO_00000_09
► HMI		CIO_00000_10	BOOL	HOST3_CIO_00000_10
The second s		CIO_00000_11	BOOL	HOST3_CIO_00000_11
		CIO_00000_12	BOOL	HOST3_CIO_00000_12
		CIO_00000_13	BOOL	HOST3_CIO_00000_13
		CIO_00000_14	BOOL	HOST3_CIO_00000_14
		CIO_00000_15	BOOL	HOST3_CIO_00000_15
		WR_00000_00	BOOL	HOST3_WR_00000_00
		WR_00001_00	BOOL	HOST3_WR_00001_00
		WR_00001_01	BOOL	HOST3_WR_00001_01
		WR_00001_02	BOOL	HOST3_WR_00001_02
		WR_00001_03	BOOL	HOST3_WR_00001_03
		DM_00000	UINT	HOST3_DM_00000
		DM_00001	UINT	HOST3_DM_00001
		DM_00003	UINT	HOST3_DM_00003
		DM_00004	UINT	HOST3_DM_00004
	1	DM_00010	INT	HOST3_DM_00010
		DM_00020	INT	HOST3_DM_00020
		CIO_00001_00	BOOL	HOST3_CIO_00001_00
		CIO_00001_01	BOOL	HOST3_CIO_00001_01
		CIO_00001_02	BOOL	HOST3_CIO_00001_02
		CIO_00001_03	BOOL	HOST3_CIO_00001_03
		DM_00002	UINT	HOST3_DM_00002
		DM_00005	UINT	HOST3_DM_00005
	1.1	DM_00006	UINT	HOST3_DM_00006
	1000	DM_00007	UINT	HOST3_DM_00007

12. Open the Excel file containing those variable tables again, and clear the filter in the column A.

- How to Reflect in the Variable Tables of NS Internal Addresses
- 1. Select **PTMEM** from filters in the column A, and click the **OK** button.

В	С	D
<mark>2</mark> ↓ <u>S</u> ort A to Z		
Z↓ Sort Z to A		
Sor <u>t</u> by Color		>
Sheet <u>V</u> iew		>
Sciear Filter Fre	om "HOST Nan	ne"
F <u>i</u> lter by Color		>
Text <u>F</u> ilters		>
Search		Q
Select Al	I)	
HOST3	1	
	•	
	ОК	Cancel
		.:

2. Delete the address information in the column E.

А	В	С	D	E
HOST Nam 🛪	Variable nam 🗸	data typ∈ -	-	address 🗸
PTMEM	B_0	Boolean		B_0
PTMEM	W_0	Short		W_0

3. Enter the following settings into the F to I columns as shown below.

I ney will be	i ney will be required for registration in the global variable tables of Sysmac Studio.								
А	В	С	D	E	F	G	Н	l I	
HOST Nam 🐙	Variable nam 🗸	data typ∈ -	•	address -					
PTMEM	B_0	Boolean			FALSE	FALSE	0	none	
PTMEM	W_0	Short			FALSE	FALSE	0	none	

#### The settings are as follows.

	Column F	Column G	Column H	Column I
Characters to enter	FALSE	FALSE	0	None
Settings on the	Retention	Constant	Update	Scaling
Sysmac Studio	setting		rate	

4. Copy the columns B to J of the rows where NS internal variables are registered.

В	С	D	E	F	G	Н		J
Variable nam 🗸	data type 🗸	-	address 🗸					
B_0	Boolean			FALSE	FALSE	0	none	
W_0	Short			FALSE	FALSE	0	none	

## 5. <u>Open Sysmac Studio, and double-click Multiview Explorer – HMI – Data – Global Variables.</u>

Multiview Explorer 🚥 🗸 🗣	🗺 Global Variables 🗙	
HMI_NA5_0 🔻	Name	Data Type
	HOST3_CIO_00000_00	Boolean
<ul> <li>Configurations and Setup</li> </ul>	HOST3_CIO_00000_01	Boolean
▼ HMI	HOST3_CIO_00000_02	Boolean
► m Pages	HOST3_CIO_00000_03	Boolean
► 🗤 User Alarms	HOST3_CIO_00000_04	Boolean
► Bote Langian	HOST3_CIO_00000_05	Boolean
⊠ Data Logging Ma Data Groups	HOST3_CIO_00000_06	Boolean
Recipes	HOST3_CIO_00000_07	Boolean
Custom Keypads	HOST3_CIO_00000_08	Boolean
V I Data	HOST3_CIO_00000_09	Boolean
– – ∟⊡ Data Types	HOST3_CIO_00000_10	Boolean
■ Global Variables	HOST3_CIO_00000_11	Boolean
5 Global Events	HOST3_CIO_00000_12	Boolean

6. With the global variable tables selected, press the **Ctrl + V** keys on the keyboard to paste the NS internal variables.

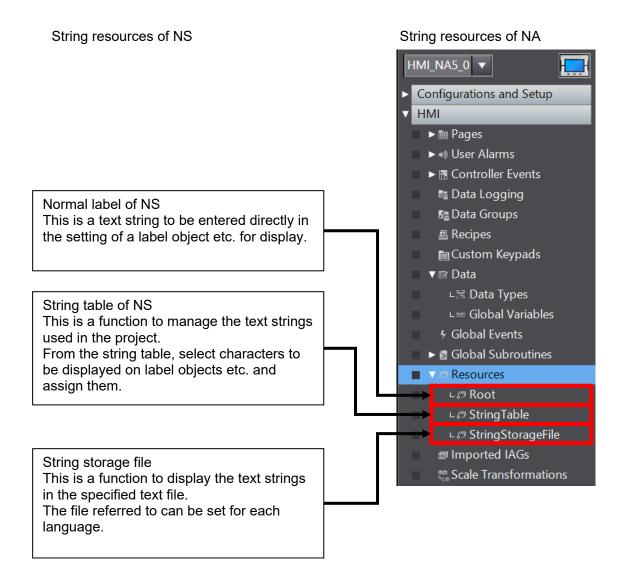
Multiview Explorer	🚾 Global Variables 🗙	i Global Variables 🗙							
HMI_NA5_0 🔻	Name	Data Type	Initial Value	I AT	Retain	Constant	Update Rate	Scaling	
	HOST3_WR_00000_00	Boolean		HOST3.WR			500 Milliseconds	None	
Configurations and Setup	HOST3_WR_00001_00	Boolean		HOST3.WR			500 Milliseconds	None	
▼ HMI	HOST3_WR_00001_01	Boolean		HOST3.WR			500 Milliseconds	None	
► 🖻 Pages	HOST3_WR_00001_02	Boolean		HOST3.WR			500 Milliseconds	None	
► 🔹 User Alarms	HOST3_WR_00001_03	Boolean		HOST3.WR			500 Milliseconds	None	+
Controller Events	HOST3_DM_00000	UShort		HOST3.D			500 Milliseconds	None	-
■ Nata Logging	HOST3_DM_00001	UShort		HOST3.D			500 Milliseconds	None	-
Bata Groups	HOST3_DM_00003	UShort		HOST3.D			500 Milliseconds	None	-
	HOST3_DM_00004	UShort		HOST3.D			500 Milliseconds	None	-
▼ I Data	HOST3_DM_00010	Short		HOST3.D			500 Milliseconds	None	-
L≊ Data Types	HOST3_DM_00020	Short		HOST3.D			500 Milliseconds	None	+
Global Variables	B_0	Boolean					None	None	
Global Events	W_0	Short					None	None	

## 3-2 Conversion of Text Strings

In NA, all the texts to be registered into objects are to be registered into the string resources. Therefore, in NS, those used to be divided into the normal label, string table, and string storage file; however, it is now necessary to register them into the string resources of Sysmac Studio. The string resources can be divided into some groups, so you are recommended to group the normal label and the others.

The conceptual figure of settings is as follows.

Register the normal label into the root, and then register the characters entered in the string table and string storage file into the other resource groups.



For the string resources of NA, multiple languages can be set as with NS. The conceptual figure of setting screen is as follows.

The conceptual ligure of a	Setting Selec				
Multiview Explorer	🞜 Root 🗙				
HMI_NA5_0	ABC	General	Strings		
<ul> <li>HMI</li> </ul>		Name	Resource ID	Japanese (Japan)	English (United States)
		String0	String0	日本語	Japanese
► m Pages	ABC	String1	String1	英語	English
► • User Alarms		String2	String2	ラベル	Label
Controller Events					
🔤 Data Logging	4				
📭 Data Groups					
Recipes					
Custom Keypads					
▼ 🖾 Data					
∟⊠ Data Types					
L 🖻 Global Variables					
9 Global Events					
🕨 🕨 🖥 Global Subroutines					
▼					
Root					
∟ <i></i> StringTable					
<i>∟</i>					

NS also used to manage the string resources for each language in the same way. Conversion of string resources is realized by replacing that format with the format for NA. This section describes the conversion procedure.

## 3-2-1 Conversion of Language Settings

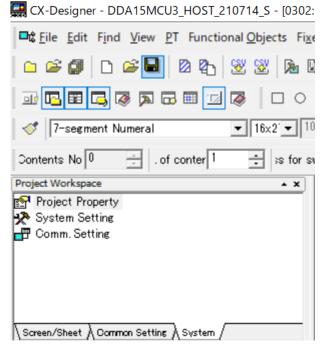
This section describes how to convert the language settings.

NS was able to allow multiple languages to be displayed on one object. Also, NA can register multiple languages into the string resources.

It is necessary to set multiple languages before registering the string resources, so we will describe how to configure the settings first.

It is assumed that Japanese and English are displayed in NS.

1. Open the NS screen data in CX-Designer and double-click **System – Project Property** in project workspace.



2. Click the **Switch Label** Tab. Project Property



3. Check the set number of labels. The number of labels represents the number of languages that can be displayed.

It is also linked to the setting of label name.

In the case of the setup above, setting the label number to 0 displays the Japanese label. Change the label number to check the label name to be displayed on all labels.

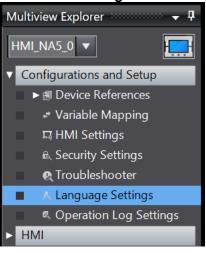
This manual describes how to convert the settings when the label number 0 is Japanese and 1

is English.

Project Property



- 4. Startup Sysmac Studio.
- 5. Double-click Configurations and Setup Language Settings in Multiview Explorer.



6. Click the + icon in the lower left of the displayed screen.

🕂 Language Settings	×			
	Language List			
	Project Languages	System Languages	Software Keypads	Transfer to Device
Default language	English (United States)	English (United States)	Standard	
	<			
	+ m +			
	Add			

7. When a language is added, set a project language in the first row to Japanese (Japan), and set that in the second row to English (United States).

🙏 Language Settings	×		
	Language List		
	Project Languages	System Languages	Software Keypads
Default language	Japanese (Japan)	Japanese (Japan)	Standard
	English (United States)	English (United States)	Standard

8. Set the system language in the same way.

	\land Language Settings	×		
		Language List		
		Project Languages	System Languages	Software Keypads
	Default language	Japanese (Japan)	Japanese (Japan)	Standard
		English (United States)	English (United States)	Standard



## Additional Information

On Language Settings, you can set the default fonts of the objects to be arranged on screens. The settings of FontFamily, FontSize, and FontStyle represent the font settings to be applied when objects are arranged.

\land Language Settings	×						
	Language List						
í	Project Languages	System Languages	Software Keypads	Transfer to Device	FontFamily	FontSize	FontStyle
Default language	Japanese (Japan)		Standard		Segoe UI	12	Normal
	English (United States)	English (United States)	Standard		Segoe UI	12	Normal

### The fonts recommended for languages are as follows.

Language	Recommended font family
Japanese	Meiryo, MS Gothic
Chinese (Simplified Chinese)	Microsoft YaHei, SimSun
Chinese (Traditional Chinese)	Microsoft JhengHei, MingLiU
Korean	Malgun Gothic, Gulim, GulimChe

## 3-2-2 Normal Label

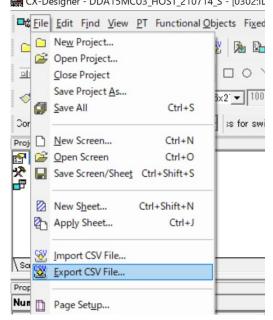
The normal label used in NS can be output to a CSV file in CX-Designer.

By converting that file into a format that can be imported to NA, the normal label can be converted relatively easily.

An example of the conversion procedure is as follows.

This procedure describes how to convert the NS screen data where two languages (Japanese and English) are set for labels, into that for NA.

- 1. Open the NS screen data in CX-Designer.
- On CX-Designer, click Export CSV File.
   CX-Designer DDA15MCU3\_HOST\_210714\_S [0302:IC



3. When the **Export target selection** screen is displayed, set **Target** to **Label/Message**, and click the **OK** button.

Export target selection	$\times$
Select the export target.	
Export all csv files     Target	
• Label/Message	
C Alarm/Event	
C String Table Setting	
C Confirmation Dialog Setting	
OK Cancel	

4. When the Label CSV Export screen is displayed, set Output Range to Whole Project and Output Code to Unicode, and click the OK button.

Set a desired file name and export the data.

\* Unless **Output code** is **Unicode**, some characters may be garbled.

Label CSV Export				×
Output Range				
C Screen/Sheet No.	Start Screen <u>1</u>	0	To <u>2</u>	0
	Start Sheet <u>8</u>	0	To <u>4</u>	0
Output Code © <u>Unicode</u> © <u>A</u> SCII Code				
			OK	Cancel

- 5. Next, import the exported CSV file to Excel, and extract the labels to register into NA.
- 6. Startup Excel and choose File Open. Browse and open the csv file output above as Text Files (\*.prn, \*.txt, \*.csv).

) Home								
New	L Recent		₽ Sear	ch				
			Workbooks	Folders				
ን Open	🗱 Open							
Info	$\leftarrow \rightarrow \checkmark \uparrow \downarrow > Tr$	nis PC » Local Disk (C:) » Users	> 905PP8248 > Des	ktop > String Resource		~	U	🔎 Search String Resource
	Organize • New fold	ler						· ·
Save	S This PC	Name		Date modified	Туре	Size		
Save As	3D Objects	String Resource.csv		2/20/2023 3:50 PM	Microsoft Excel Com		2 KB	
Print	Desktop							
-	<ul> <li>Documents</li> <li>Downloads</li> </ul>							
Share	Music							
Export	E Pictures							
Publish	Videos							
Close	Local Disk (C:)							
Close	Network							

7. When you open it, the following text file wizard will appear. Select the data format option **Characters such as commas or tabs separate each field** in the Original data type field, and click the Next button.

Text Import Wizard - Step 1 of 3	?	$\times$
The Text Wizard has determined that your data is Fixed Width.		
If this is correct, choose Next, or choose the data type that best describes your data.		
Original data type		
Choose the file type that best describes your data:		
Delimited     - Characters such as commas or tabs separate each field.     Direct with a command in extension with severe between each field.		
Fixed width - Fields are aligned in columns with spaces between each field.		
Start import at <u>r</u> ow: 1 File <u>o</u> rigin: 932 : Japanese (Shift-JIS)		~
☐ <u>My</u> data has headers.		
Preview of file C:\Users\905PP8248\Desktop\String Resource\String Resource.csv.		
1 PRJ 2 "Project/Screen No.,""Title"",""Parts ID"",""Parts Comment"",""Property"", 3 "Screen-10,""Management screen 1"",""LBL0000"","""",""Caption"",""1",""L4 4 "Screen-10,""Management screen 1"",""LBL0000"","""",""Caption"",""2",""L4 5 "Screen-10,""Management screen 1"",""LBL0001"","""",""Caption"",""3",""L4	,‴日本語 \BEL″″″ \BEL″″″ \BEL″″″	~ <b>`</b>
<	>	
Cancel < Back <u>N</u> ext >	<u>F</u> inis	sh

## 8. Select **Comma** as a delimiter and click the **Next** button.

Convert Text to Columns Wizard - Step 2 of 3	?	$\times$
This screen lets you set the delimiters your data contains. You can see how your text is affe preview below.	cted in th	e
Delimiters         Iab         Semicolon         Comma         Space         Qther:		
PRJ     Parts ID     Parts Comment       Project/Screen No.     Title     Parts ID     Parts Comment       Screen-10     Management screen 1     LBL0000     Caption       Screen-10     Management screen 1     LBL0000     Caption	n 1 n 2	
Screen-10 Management screen 1 LBL0001 Captio	nβ >	~
Cancel < <u>B</u> ack <u>Next</u> >	Einis	sh

 Select all columns in the Data preview field. In this state, select Text in the Column data format field. Click the Finish button.

Text Import Wizard - Step 3 o	of 3				?	×
This screen lets you select each o	olumn and set the	Data Format				
Column data format General Text Date: MDY Do not import column (skip	remaining v	onverts numer values to text.	ic values to numb	_	s to dates, a	and all
Data preview Text Text PRJ Project/Screen No. Title			Text Parts Comment	Property E	əxt Təx ]本語 英	A I
Screen-10 Manag	gement screen gement screen gement screen	1 LBL0011		Caption 1 Caption 2 Caption 3	LAB LAB LAB	BEL
		Cancel	< <u>B</u> ack	Next >		<u>F</u> inish

10. When the contents of the CSV file are displayed, delete the first row.

1	А	В	С	D	E	F	G
1	PRJ						
2	Project/Screen No.	Title	Parts ID	Parts Corr	Property	日本語	英語
3	Project				AlarmMes	アラーム1	
4	Project				AlarmMes	アラーム2	

11. Filter the column A, and select **Project** only. If **Project** does not exist, go on to step 14.

	Α	В	
1	Project/Screen No. 🛪	Title 🖵	Pa
₽↓	Sort A to Z		
Z↓	S <u>o</u> rt Z to A		
	Sor <u>t</u> by Color		>
	Sheet <u>V</u> iew		>
$\mathbf{N}$	Clear Filter From "Project/	Screen No."	
	F <u>i</u> lter by Color		>
	Text <u>F</u> ilters		>
	Search	5	0
$\checkmark$	(Select All)		
	Project		
	Screen-20		

. 06				iispiaye	u 10w5.			
		А	В	С	D	E	F	G
1	Project	/Screen No. 🛒	Title 🖵	Parts ID 🚽	Parts C 🚽	Propert 🚽	日本語 🖵	英語 🖵
2	Pro the state	ゴシッ~11 ~ A	^ ^	% • 🛱		AlarmMes	アラーム1	
3	Prc	I ≡ 🎸 - A	↓			AlarmMes	アラーム2	
4	Prc,	1 = <u>•</u> · <u>4</u>	· · .0	0 ->.0 🗸		AlarmMes	アラーム3	
5	Prc x	Cut				StringTab	文字列テー	ブル
14								
15		<u>C</u> opy						
16		Paste Options:						
17		É0						
18		Paste Special						
19			_					
20		Insert Row						
21		<u>D</u> elete Row						
22		Clear Co <u>n</u> tents						
23		<u>F</u> ormat Cells						
24		Row Height						
25		-						
26		<u>H</u> ide						
27		<u>U</u> nhide						

#### 12. Select and delete all the displayed rows.

### 13. Clear the filter.

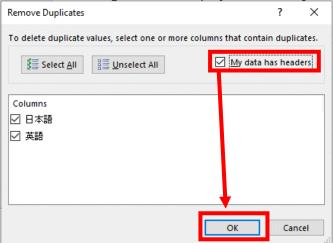
# Additional Information

When the string table or the user alarm function is used, labels will be exported together. These are not required for normal label conversion, so delete them beforehand. This step is unnecessary if **Project** is not included in the column A of the exported file.

#### 14. The columns F and G are for labels, so select all the columns. With the columns selected click **Data – Remove Duplicates**

/ / /	th the co	numr	is sele	cied, c		ata – F	kemo	ve Dup	nicate	S.				
Fi	le Home	Insert	Page Lay	out Forr	nulas Da	ata Revi	iew Vie	ew Develo						
D	Get ata ~	Refresh All ~	<b>Queries &amp;</b> Properties		Stocks (		ncies	$\begin{array}{c} A \downarrow \\ A Z \downarrow \\ A \downarrow \end{array}$ Sort	Filter	Clear Reapply Advanced			What-If Analysis ~	Forecast Sheet
Set a	& Transform Data	Q	ueries & Conn	ections		Data Types			Sort & Filter		Data	Tools	Forec	ast
F1	Ŧ	×	$\sqrt{-f_x}$	日本語										
	А		В	С	D	Е	F	G	Н	1	J	К	L	N
1	Project/Scree	en No. ₊	Title 👻	Parts ID 🗸	Parts C 🚽	Propert 🗸	日本語	▼ 英語 ▼						
2	Screen-10		管理画面1	LBL0010		Caption	1	1						
3	Screen-10		管理画面1	LBL0011		Caption	2	2						
4	Screen-10		管理画面1	LBL0012		Caption	3	3						
5	Screen-10		管理画面1	LBL0013		Caption	4	4						
6	Screen-10		管理画面1	LBL0014		Caption	5	5						
7	Screen-10		管理画面1	LBL0015		Caption	6	6						
8	Screen-10		管理画面1	LBL0016		Caption	7	7						
0	0 10		ARE THE CASE AND 1	DI 0017		o	<b>6</b>	10						

15. When the following screen is displayed, check My data has headers and click the OK button.



- 16. The duplicate labels will be deleted.
  - The purpose of this processing is to prevent the same labels from being registered into NA.

Micros	oft Excel	$\times$
0	6 duplicate values found and removed; 31 unique values rem	ain.
	ОК	

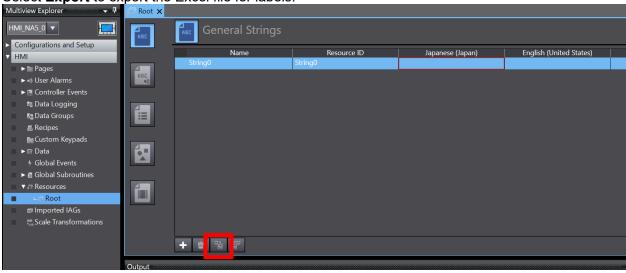
- 17. Open the project file for screen replacement in Sysmac Studio.
- 18. <u>Double-click **Resources Root**.</u>



19. Click the + button to create an empty resource.



20. Select Export to export the Excel file for labels.



#### 21. Open the exported Excel file.

đ	A	В	С	D
1	Group Name	Resource ID	Japanese (Japan) [ja–JP]	English (United States) [en-US]
2	[root]	String0		
3				
4				
5				
6				
7				
8				
9				
10				
11				

22. The columns C and D are for Japanese and English labels, so copy & paste the labels extracted in NS.

	A	В	С	D	E
1	Group Name	Resource ID	Japanese (Japan) [ja–JP]	English (United States) [en-US]	
2	[root]	String0	1	1	
3			2	2	
4			3	3	
5			4	4	
6			5	5	
7			6	6	
8			5	7	
9			8	8	
10			9	9	
11			10	10	
12			管理画面¥n1	Management¥n1	
13			2/2	2/2	
14			11	11	
15			12	12	
16			13	13	
17			14	14	
18			15	15	
19			16	16	
20			17	17	
21			18	18	
22			19	19	

	A	В	С	D
1	Group Name	Resource ID	Japanese (Japan) [ja–JP]	English (United States) [en-US]
2	[root]	String0	1	1
3	[root]		2	2
4	[root]		3	3
5	[root]		4 5	4 5
6	[root]			
7	[root]		6	6
8	[root]		7	2
9	[root]		8	8 9
10	[root]		9	9
11	[root]		10	10
12	[root]		管理画面¥n1	Management¥n1
13	[root]		2/2	2/2
14	[root]		11	11
15	[root]		12	12
16	[root]		13	13
17	[root]		14	14
	[root]		15	15
19	[root]		16	16
20	[root]		17	17
21	[root]		18	18
22	[root]		19	19
23	[root]		20	20
			管理画面	Management
24	[root]		2	2
25	[root]		1/2	1/2
26	[root]		データロググラフ	データロググラフ
27	[root]		DM100(赤)	DM100(赤)
28	[root]		DM100(青)	DM100(青)
29	[root]		DM100(緑)	DM100(緑)
30	[root]		+	+
31	[root]		-	-

## 23. Copy the cell A2, and paste it from the cell A3 to the last row where the labels were added.

24. Select the cell B2, and drag it to the last row where the labels were added, to set the **Resource ID** data.

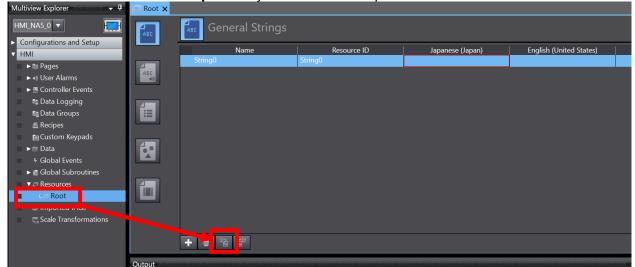
Every Resource ID data needs to have a unique name, so avoid duplicate names by registering consecutive data.

Å	A	В	C	D
1	Group Name	Resource ID	Japanese (Japan) [ja–JP]	English (United States) [en-US]
2	[root]	String0	1	1
3	[root]	String1	2	2
4	[root]	String2	3	3 4
5	[root]	String3	4	4
6	[root]	String4	5	5
7	[root]	String5	6	6
8	[root]	String6	2	2
9	[root]	String7	8	8 9
10	[root]	String8	9	9
11	[root]	String9	10	10
			管理画面	Management
12	[root]	String10	1	1
13	[root]	String11	2/2	2/2
14	[root]	String12	11	11
15	[root]	String13	12	12
16	[root]	String14	13	13
17	[root]	String15	14	14
18	[root]	String16	15	15
19	[root]	String17	16	16
20	[root]	String18	17	17
21	[root]	String19	18	18
22	[root]	String20	19	19
23	[root]	String21	20	20
			管理画面	Management
24	[root]	String22	2	2
25	[root]	String23	1/2	1/2
26	[root]	String24	データロググラフ	データロググラフ
27	[root]	String25	DM100(赤)	DM100(赤)
28	[root]	String26	DM100(青)	DM100(青)
29	[root]	String27	DM100(緑)	DM1 00(緑)
30	[root]	String28	+	+
31	[mot]	String29	1–	—

25. Convert the line feed code because it is different between NS and NA. Select **Home – Find & Select – Replace** to replace *¥n* with a line feed (**Ctrl + J** keys).

Find and Rep	place			?	Х
Find R	teplace				
Find what: Replace with	¥n				<ul><li></li><li></li></ul>
				Option	\$ >>
Replace All	<u>Replace</u>	Find All	Eind Next	CI	ose

26. Select **Resources** – **Root** – **Import** in Sysmac Studio to import the created Excel file.



27. When it is imported successfully, the labels will be added as shown below.

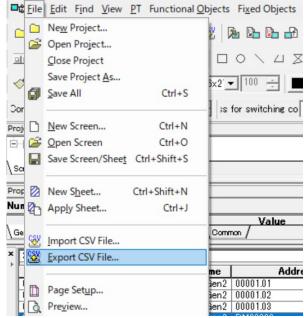
Multiview Explorer 👻 🕈	Root ×							
	General Strings							
Configurations and Setup	Name	Resource ID	Japanese (Japan)	English (United States)				
	String0	String0	1	1				
► d User Alarms	String 1	String 1	2	2				
Get Alams      Marins      Marins      Marins	String2	String2	3	3				
Data Logging	String3	String3	4	4				
Ba Data Groups	String4	String4	5	5				
Recipes	String5	String5	6	6				
Kecipes     Extension Keypads	String6	String6	7	7				
► I Data	String7	String7	8	8				
✓ Global Events	String7 String8	String8	9	9				
<ul> <li>Global Subroutines</li> </ul>	String9	String9	10	10				
	String10	String10	管理画面 1	Management 1				
Root	String11	String11	2/2	2/2				
Imported IAGs	String12	String12	11	11				
Scale Transformations	String13	String13	12	12				
	String14	String14	13	13				
	String15	String15	14	14				
	String16	String16	15	15				
	String17	String17	16	16				
	String18	String18	17	17				
	String19	String19	18	18				
	String20	String20	19	19				
	String21	String21	20	20				
	String22	String22	管理画面 2	Management 2				

## 3-2-3 String Table

The string table can be converted in the same way as 3-2-2 Normal Label.

1. Open the NS screen data in CX-Designer.





3. When the **Export target selection** dialog appears, select **String Table Setting** in the **Target** field, and click the **OK** button.

Export target selection $ imes$						
Select the export target.						
☐ Export all csv files ┌ Target ————————————————————————————————————	1					
C Label/Message						
C Alarm/Event						
<ul> <li>String Table Setting</li> </ul>						
C Confirmation Dialog Setting						
OK Cancel						

4. Set the output code to **Unicode**, and click the **OK** button. Set a desired file name and export the data.

\* Unless **Output code** is **Unicode**, some characters may be garbled.

Export CSV File	×
Output Code	
C ASCII Code	
<ul> <li>Unicode</li> </ul>	
ОК	Cancel

- 5. Import the exported CSV file to Excel, and extract the labels to register into NA.
- 6. Open Excel.
- Open the CSV file exported previously.
   When you open it, the following text file wizard will appear.
   Select the data format option Characters such as commas or tabs separate each field in the Original data type field, and click the Next button.

Text Import Wizard - Step 1 of 3	?	×
The Text Wizard has determined that your data is Fixed Width.		
If this is correct, choose Next, or choose the data type that best describes your data.		
Original data type		
Choose the file type that best describes your data:		
Delimited     - Characters such as commas or tabs separate each field.		
<ul> <li>Fixed width - Fields are aligned in columns with spaces between each field.</li> </ul>		
Start import at <u>row</u> : 1 File <u>o</u> rigin: 932 : Japanese (Shift-JIS)		~
My data has headers.		
Preview of file C:\Users\905PP8248\Desktop\String Resource\String Resource.csv.		
1 "PRJ"		7~
2 "Project/Screen No.","Title","Parts ID","Parts Comment","Property","日本語	","英語"	
3 Screen-10", "Management screen 1", "LBL0010","", "Caption", "1", "LABEL" 4 Screen-10", "Management screen 1", "LBL0011", "", "Caption", "2", "LABEL"		
5 "Screen-10", "Management screen 1", "LBL0012", "", "Caption", "3", "LABEL"		~
<	)	÷
Cancel < Back <u>N</u> ext >	Eini	sh

#### 8. Select **Comma** as a delimiter and click the **Next** button.

Convert Text to Columns Wizard - Step 2 of 3	?	$\times$
This screen lets you set the delimiters your data contains. You can see how your text is affe preview below.	cted in the	•
Delimiters       Tab       Semicolon       Comma       Space       Qther:		
Data preview		
PRJ Project/Screen No. Title Parts ID Parts Comment Proper Screen-10 Management screen 1 LBL0000 Captio Screen-10 Management screen 1 LBL0001 Captio	n 1 n 2	<b>^</b>
Cancel < <u>B</u> ack <u>N</u> ext >	Einis	h

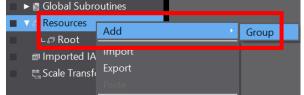
Select all columns in the Data preview field.
 In this state, select Text in the Column data format field.
 Click the Finish button.

Convert Text to Columns Wizar	d - Step 3 of 3	}		?	×	
This screen lets you select each colu Column data format O <u>G</u> eneral O <u>T</u> ext	'General' con	verts numer	ic values to numb	ers, date valu	ues to dates	s,
Do not import column (skip)	and all remai	ning values	<u>A</u> dvanced			
D <u>e</u> stination: \$A\$1					1	•
Data <u>p</u> review						
Text Text		Text	Text	Text	Text 🔨	
Screen-10 Managem	ent screen 1 ent screen 1 ent screen 1		Parts Comment	Caption	日本書 1 2 3 ~ ~	
	Cancel	< <u>B</u> ac	k Next	>	<u>F</u> inish	

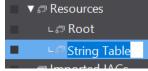
	A	B	C
1	No	日本語	英語
2	0	テキスト0	Text0
3	1	テキスト1	Text1
4	2	テキスト2	Text2
5	3	テキスト3	Text3
6	4	テキスト4	Text4
7	5	テキスト5	Text5
8	6	テキスト6	Text6
9	7	テキスト7	Text7
10	8	テキスト8	Text8
11	9	テキスト9	Text9
12	10	テキスト10	Text10
13	11	テキスト11	Text11
14	12	テキスト12	Text12
15	13	テキスト13	Text13
16	14	テキスト14	Text14
17	15	テキスト15	Text15
18	16	テキスト16	Text16
19	17	テキスト17	Text17
20	18	テキスト18	Text18
21	19	テキスト19	Text19
22	20	テキスト20	Text20
23	21	テキスト21	Text21
24	22	テキスト22	Text22
25	23	テキスト23	Text23

10. The contents of the string table are displayed.

11. Open the project file for screen replacement in Sysmac Studio.



13. Change the name of the added resource group to String Table.



14. Click the + button to create an empty resource.

Multiview Explorer 👻 🕂	StringTable	×				
HMI_NA5_0 V	ABC	Gene	ral Strings			
<ul> <li>Configurations and Setup</li> <li>HMI</li> </ul>		String0	Name	Resource ID StringTable_String0	Japanese (Japan)	English (United States)
► 🖿 Pages	ABC	annyo		String lable_stringo		
Image: Second	40					
Controller Events						
Data Logging						
Data Groups						
📠 Recipes						
Custom Keypads						
🔲 🕨 🖾 Data	6.					
9 Global Events						
🖉 🕨 🖪 Global Subroutines						
▼ 🕫 Resources						
■ ∟ <i>⊜</i> Root						
StringTable			_			
Imported IAGs     Scale Transformations		+ 🖻 🔓	á <sup>p</sup>			

15. Select Export to export the Excel file for labels.

Multiview Explorer 🗸 🗸	StringTable	e X				
HMI_NA5_0	ABC	률 Gen	eral Strings			
<ul> <li>Configurations and Setup</li> <li>HMI</li> </ul>			Name	Resource ID	Japanese (Japan)	English (United States)
▶ m Pages		String0		StringTable_String0		
► 🗤 User Alarms	ABC					
<ul> <li>The Controller Events</li> </ul>						
👦 Data Logging						
₽≣ Data Groups						
📕 🕮 Recipes						
Custom Keypads						
■ ► 🖻 Data						
<ul> <li>۶ Global Events</li> <li>▶          ■ Global Subroutines     </li> </ul>						
▼						
v ₅∍ Resources						
StringTable						
Imported IAGs		+ 🗊 🗞	<del>ي</del>			
na Ceale Transformations						

## 16. Open the exported Excel file.

A	A	В	С	D
1	Group Name	Resource ID	Japanese (Japan) [ja-JP]	English (United States) [en-US]
2	StringTable	StringTable_StringO		
3				
4				
5				

17. The columns C and D are for Japanese and English labels, so copy and paste the string tables extracted in NS.

	A	В	С	D
1	Group Name	Resource ID	Japanese (Japan) [ja-JP]	English (United States) [en-US]
2	StringTable	StringTable_String0	S	Text0
3			テキスト1	Text1
4			テキスト2	Text2
5			テキスト3	Text3
6			テキスト4	Text4
- 7			テキスト5	Text5
8			テキスト6	Text6
9			テキスト7	Text7
10			テキスト8	Text8
11			テキスト9	Text9
12			テキスト10	Text10
13			テキスト11	Text11
14			テキスト12	Text12
15			テキスト13	Text13
16			テキスト14	Text14
17			テキスト15	Text15
18			テキスト16	Text16
19			テキスト17	Text17
20			テキスト18	Text18
21			テキスト19	Text19
22			テキスト20	Text20
23			テキスト21	Text21
24			テキスト22	Text22
25			テキスト23	Text23

_	Α	В	С	D
1	Group Name	Resource ID	Japanese (Japan) [ja-JP]	English (United States) [en-US]
2	StringTable	StringTable_StringO	テキストロ	Text0
З	StringTable		テキスト1	Text1
4	StringTable		テキスト2	Text2
5	StringTable		テキスト3	Text3
6	StringTable		テキスト4	Text4
7	StringTable		テキスト5	Text5
8	StringTable		テキスト6	Text6
9	StringTable		テキスト7	Text7
10	StringTable		テキスト8	Text8
11	StringTable		テキスト9	Text9
12	StringTable		テキスト10	Text10
13	StringTable		テキスト11	Text11
14	StringTable		テキスト12	Text12
15	StringTable		テキスト13	Text13
16	StringTable		テキスト14	Text14
17	StringTable		テキスト15	Text15
18	StringTable		テキスト16	Text16
19	StringTable		テキスト17	Text17
20	StringTable		テキスト18	Text18
21	StringTable		テキスト19	Text19
22	StringTable		テキスト20	Text20
23	StringTable		テキスト21	Text21
	StringTable		テキスト22	Text22
25	StringTable	1	テキスト23	Text23

### 18. Copy the cell A2, and paste it from the cell A3 to the last row where the labels were added.

19. Select the cell B2, and drag it to the last row where the labels were added, to set the **Resource ID** data.

The string table No. of NS and the number at the end of **Resource ID** should be the same value.

This is because the values need linking with each other if indirect referencing of string tables is performed in NS.

	A	В	С	D
1	Group Name	Resource ID	Japanese (Japan) [ja-JP]	English (United States) [en-US]
2	StringTable	StringTable_String0	テキストロ	Text0
З	StringTable	StringTable_String1	テキスト1	Text1
4	StringTable	StringTable_String2	テキスト2	Text2
5	StringTable	StringTable_String3	テキスト3	Text3
6	StringTable	StringTable_String4	テキスト4	Text4
7	StringTable	StringTable_String5	テキスト5	Text5
8	StringTable	StringTable_String6	テキスト6	Text6
9	StringTable	StringTable_String7	テキスト7	Text7
10	StringTable	StringTable_String8	テキスト8	Text8
11	StringTable	StringTable_String9	テキスト9	Text9
12	StringTable	StringTable_String10	テキスト10	Text10
13	StringTable	StringTable_String11	テキスト11	Text11
	StringTable		テキスト12	Text12
15	StringTable	StringTable_String13	テキスト13	Text13
16	StringTable		テキスト14	Text14
17	StringTable	StringTable_String15	テキスト15	Text15
18	StringTable	StringTable_String16	テキスト16	Text16
19	StringTable	StringTable_String17	テキスト17	Text17
20	StringTable	StringTable_String18	テキスト18	Text18
21	StringTable	StringTable_String19	テキスト19	Text19
22	StringTable	StringTable_String20	テキスト20	Text20
23	StringTable		テキスト21	Text21
24	StringTable		テキスト22	Text22
25	StringTable	StringTable String23	テキスト23	Text23

- 20. Convert the line feed code because it is different between NS and NA.
  - Select Home Find & Select Replace to replace ¥n with a line feed (Ctrl + J keys).

Find and	Repla	ace			?	×
Find	Rej	place				
Find wha	t	¥n				~
Replace	with:					~
					Option	s >>
Replace	All	Replace	Find All	Eind Next	C	lose

21. Select Resources – StringTable – Import in Sysmac Studio to import the created Excel file.

Multiview Explorer 👻 🗸	StringTable	×			
HMI_NA5_0  Configurations and Setup	ABC	General S	trings		
<ul> <li>Configurations and Setup</li> <li>HMI</li> </ul>		Name	Resource ID	Japanese (Japan)	English (United States)
► The Pages		String0	StringTable_String0		
► ages ► a User Alarms	ABC	and the second second			
Oser Alarms      Microfler Events					
B≞ Data Logging	4				
Data Groups					
圖 Recipes					
Custom Keypads					
► 🖻 Data					
9 Global Events					
🗾 🕨 🖥 Global Subroutines					
▼ 🕫 Resources	4				
La Root					
StringTable	· · · · · ·				
Imported IAGS					
nn Coole Transformations					

22. When it is imported successfully, the labels will be added as shown below.

Multiview Explorer 🚽 📮	C StringTable	×			
HMI_NA5_0  Configurations and Setup	ABC	🔚 General String	js		
<ul> <li>Configurations and Setup</li> <li>HMI</li> </ul>		Name	Resource ID	Japanese (Japan)	English (United States)
► m Pages		String0	StringTable_String0	テキスト0	Text0
► d User Alarms	ABC	String1	StringTable_String1	テキスト1	Text1
Gontroller Events	<0	String2	StringTable_String2	テキスト2	Text2
Data Logging		String3	StringTable_String3	テキスト3	Text3
	4	String4	StringTable_String4	テキスト4	Text4
📰 Data Groups		String5	StringTable_String5	テキスト5	Text5
📠 Recipes		String6	StringTable_String6	テキスト6	Text6
■ Custom Keypads ► I Data	6	String7	StringTable_String7	テキスト7	Text7
		String8	StringTable_String8	テキスト8	Text8
Global Events		String9	StringTable_String9	テキスト9	Text9
►		String10	StringTable_String10	テキスト10	Text10
Resources		String11	StringTable_String11	テキスト11	Text11
⊨ ∟ Root		String12	StringTable_String12	テキスト12	Text12
StringTable		String13	StringTable_String13	テキスト13	Text13
📾 Imported IAGs 🚓 Scale Transformations		+ 🖬 📽 🗳			

# 3-2-4 String Storage File

In the label objects etc. of NS, there is a function to display the characters stored in a text file as shown below. Label - LBL0000

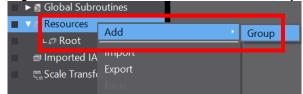
Horizontal Position: Left Text Color:  Auto resize text Indirect Reference of Text Color Address Set(3)
> Text Color:

This section describes how to convert this text file into the string resources for NA.

This procedure describes how to convert the NS screen data where two languages (Japanese and English) are set for labels, into that for NA.

1. Open the project file for screen replacement in Sysmac Studio.

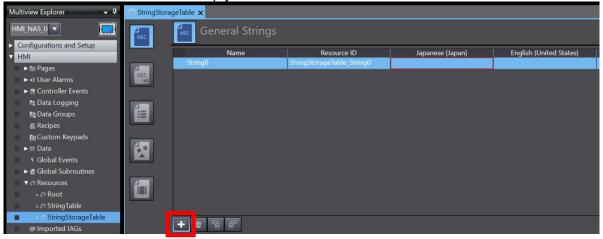
### Right-click Resources, and click Add – Group.



2. Change the name of the added resource group to String Table.



3. Click the + button to create an empty resource.



4. Select **Export** to export the Excel file for labels.

Multiview Explorer 🚽 📮	StringStore	geTable 🗙				
HMI_NA5_0	ABC	📶 Gene	ral Strings			
<ul> <li>Configurations and Setup</li> <li>HMI</li> </ul>		String0	Name	Resource ID StringStorageTable_String0	Japanese (Japan)	English (United States)
► 📾 Pages ► 🐗 User Alarms	ABC					
<ul> <li>Controller Events</li> <li>Data Logging</li> </ul>						
🛯 Data Groups 🕮 Recipes						
<ul> <li>Im Custom Keypads</li> <li>Im Data</li> </ul>						
<ul> <li>۶ Global Events</li> <li>▶          B Global Subroutines</li> </ul>						
▼						
Imported IAGs		+ 🖬 🗞	g.			

5. Open the exported Excel file.

		///		
	A	В	С	D
1	Group Name	Resource ID	Japanese (Japan) [ja-JP]	English (United States) [en-US]
2	StringStorageTable	StringStorageTable_StringO		
3				
4				
5				
6				

- 6. Open the NS screen data in CX-Designer.
- 7. Open the object property containing string storage file settings, and click Label Edit. Label - LBL0000

 $\geq$ 

General Background Label Message Frame Flicker Co	ontrol Flag Size/Position
Switch 日本語	
Label (Press Enter key to break a line)	Text Attribute
LABEL	Text Attribute Apply Attribute
	Font Name:StandardFont Size:2x2Horizontal Scale:100Font Style:StandardVertical Position:CenterHorizontal Position:LeftText Color:Image: Center
>	Auto resize text     Indirect Reference of Text Color
	Address Set(3)
✓ Indirect Reference of String         File Name       Text_JP.txt         Address for         Specifying File Line         Clear display when the address	wwse     Edit       Edit     Character Code       Set(4)     ASCII Code       Value is 0     0

8. When the registered text file opens, select all and press the **Ctrl + C** keys to copy them.

	Text_JP	.txt - Note	epad		
File	Edit	Format	View	Help	
1234567777行行行行行行行行行行行行行行行行行行行行行行行行行行行行行行行行行					

9. Open the exported Excel file, and paste them by pressing the **Ctrl + V** keys with the cell C2 selected.

		conceptioning column		
1	A	В	С	D
1	Group Name	Resource ID	Japanese (Japan) [ja-JP]	English (United States) [en-US]
2	StringStorageTable	StringStorageTable_String0	1行目	
З			2行目	
4			3行目	
5			4行目	
6			5行目	
7			6行目	
8			7行目	
9			8行目	
10			9行目	
11			10行目	
12			11行目	
13			12行目	
14			13行目	<u> </u>

\* Paste them in the corresponding column for NS and NA

10. Open CX-Designer again, click the drop-down list in the right of **Switch**, select *English*, and click **Edit**.

Horizontal Position: Left   Text Color: Indirect Reference of Text Color   Address Set(3)	neral Background La Switch 日本語 abel 英語 LABEL	bel Message Frame	ak a line)	ol Flag Size/Position ext Attribute Text Attribute Font Name: Font Size: Horizontal Scale: Font Style: Vertical Position:	Apply Attribute Standard 2x2 100 Standard Center	
File Name     Text_EN.txt     Browse     Edit       Address for     CJ:000000     Set(4)     C Unicode       Specifying File Line     Clear display when the address value is 0     0	<		, , , , , , , , , , , , , , , , , , ,	Text Color:  Auto resize text Indirect Reference		Set(3)
Address for Specifying File Line CJ:000000 Set(4) C Unicode Clear display when the address value is 0	✓ Indirect Reference of	String				
Clear display when the address value is 0			Brows	s Fdit		
Use the String Table	File Name Address for	Text_EN.txt	Brows	e Edit (	ASCII Code	
	File Name Address for	Text_EN.txt CJ:000000		e Edit ( Set(4) (	ASCII Code	

11. When the registered text file opens, select all again and press the **Ctrl + C** keys to copy them.



12. Open the exported Excel file, and paste them by pressing the Ctrl + V keys with the cell D2 selected.
 \* Paste them in the corresponding column for NS and NA

* Pa	iste them	in the	corresponding	colu	mn for l	NS and NA

	A	В	С	D
1	Group Name	Resource ID	Japanese (Japan) [ja-JP]	English (United States) [en-US]
2	StringStorageTable		1行目	Line1
З			2行目	Line2
4			3行目	Line3
5			4行目	Line4
6			5行目	Line5
- 7 -			6行目	Line6
8			7行目	Line7
9			8行目	Line8
10			9行目	Line9
11			10行目	Line10
12			11行目	Line11
13			12行目	Line12
14			13行目	Line13

1	A	В	С	D
1	Group Name	Resource ID	Japanese (Japan) [ja-JP]	English (United States) [en-US]
2	StringStorageTable	StringStorageTable_StringO	1行目	Line1
З	StringStorageTable		2行目	Line2
4	StringStorageTable		3行目	Line3
5	StringStorageTable		4行目	Line4
6	StringStorageTable		5行目	Line5
- 7 -	StringStorageTable		6行目	Line6
8	StringStorageTable		7行目	Line7
9	StringStorageTable		8行目	Line8
10	StringStorageTable		9行目	Line9
11	StringStorageTable		10行目	Line10
12	StringStorageTable		11行目	Line11
13	StringStorageTable		12行目	Line12
14	StringStorageTable		13行目	Line13

### 13. Copy the cell A2, and paste it from the cell A3 to the last row where the labels were added.

14. Select the cell B2 and change the number at the end from 0 to 1. This is because, for the characters to be displayed in the string storage file, a value of the set address starts with 1.

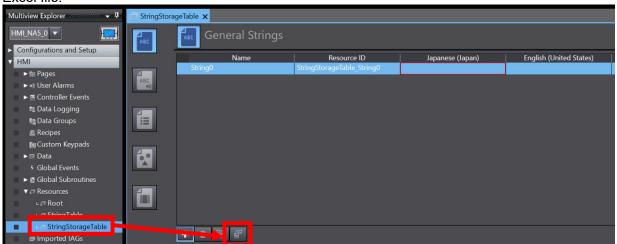
	A	В	С	D
1	Group Name	Resource ID	Japanese (Japan) [ja-JP]	English (United States) [en-US]
2	StringStorageTable	StringStorageTable_String1	1行目	Line1
З	StringStorageTable		2行目	Line2
4	StringStorageTable		3行目	Line3
5	StringStorageTable		4行目	Line4
6	StringStorageTable		5行目	Line5
7	StringStorageTable		6行目	Line6
8	StringStorageTable		7行目	Line7
9	StringStorageTable		8行目	Line8
10	StringStorageTable		9行目	Line9
11	StringStorageTable		10行目	Line10
12	StringStorageTable		11行目	Line11
13	StringStorageTable		12行目	Line12
14	StringStorageTable		13行月	Line13

### 15. Drag it to the last row where the labels were added, to set the **Resource ID** data.

	- A	В	С	D
1	Group Name	Resource ID	Japanese (Japan) [ja-JP]	English (United States) [en-US]
2	StringStorageTable	StringStorageTable_String1	1行目	Line1
З	StringStorageTable	StringStorageTable_String2	2行目	Line2
- 4	StringStorageTable	StringStorageTable_String3	3行目	Line3
5	StringStorageTable	StringStorageTable_String4	4行目	Line4
6	StringStorageTable	StringStorageTable_String5	5行目	Line5
- 7	StringStorageTable	StringStorageTable_String6	6行目	Line6
8	StringStorageTable	StringStorageTable_String7	7行目	Line7
9	StringStorageTable	StringStorageTable_String8	8行目	Line8
10	StringStorageTable	StringStorageTable_String9	9行目	Line9
11	StringStorageTable	StringStorageTable_String10	10行目	Line10
12	StringStorageTable	StringStorageTable_String11	11行目	Line11
13	StringStorageTable	StringStorageTable_String12	12行目	Line12
14	StringStorageTable	StringStorageTable String13	13行目	Line13

16. Save the created Excel file, and close the file.

17. Select **Resources – StringStorageTable – Import** in Sysmac Studio to import the created Excel file.



18. When it is imported successfully, the labels will be added as shown below.

Multiview Explorer	StringStorage	🔁 StringStorageTable 🗙				
HMI_NA5_0   Configurations and Setup	ABC	General Strings				
<ul> <li>Configurations and Setup</li> <li>HMI</li> </ul>		Name	Resource ID	Japanese (Japan)	English (United States)	
▶ m Pages		String0	StringStorageTable_String0			
► 🖷 Tages	ABC	String1	StringStorageTable_String1	1行目	Line1	
► Controller Events		String2	StringStorageTable_String2	2行目	Line2	
Data Logging		String3	StringStorageTable_String3	3行目	Line3	
Data Eogging		String4	StringStorageTable_String4	4行目	Line4	
Recipes		String5	StringStorageTable_String5	5行目	Line5	
Kecipes     Excipes     Excipes     Excipes		String6	StringStorageTable_String6	6行目	Line6	
■Custom keypaus	<b>6</b>	String7	StringStorageTable_String7	7行目	Line7	
Field Data		String8	StringStorageTable_String8	8行目	Line8	
<ul> <li>Global Events</li> <li>Global Subroutines</li> </ul>		String9	StringStorageTable_String9	9行目	Line9	
✓		String10	StringStorageTable_String10	10行目	Line10	
v ⊕ Resources ∟@ Root		String11	StringStorageTable_String11	11行目	Line11	
		String12	StringStorageTable_String12	12行目	Line12	
■ L StringTable		String13	StringStorageTable_String13	13行目	Line13	
Constraint Storage Table     Imported IAGs		+ 🖮 🖓				

### Additional Information

If multiple text files have been registered, add resource groups accordingly.

# 3-3 Conversion of Alarm/Event Settings

Refer to the *Programmable Terminal NA-series Replace Guide From NS to NA (Cat. No. V469), 5-4 Alarm/Event Settings and 6-18 Alarm/Event Summary and History* for basic conversion procedures for alarms.

In NA, alarm messages are also registered automatically into a resource, as with the objects such as buttons and labels. While objects are registered into **General Strings**, alarm messages are registered into **Alarm Strings**.

When using multiple languages and registering messages by language, directly edit data at **Alarm Strings** in the resource, or export alarms and edit them on Excel.

🞜 Root 🗙				
ABC	Alarm St	trings		
	Name	Resource ID	Japanese (Japan)	English (United States)
	AString0	AString0	Message1	
ABC	AString1	AString1	Message2	
<b>•</b> ••	AString2	AString2	Message3	
1				
	+ 💼 🖧			

Clicking the

licon allows you to export alarms.

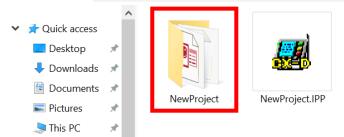
The exported data will be saved as Excel data, so write desired messages.

When the edit is completed, import them by clicking the E

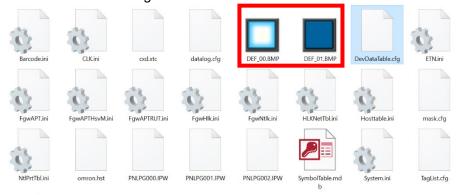
Å	A	В	С	D
1	Group Name	Resource ID	Japanese (Japan) [ja-JP]	English (United States) [en-US]
2	[root]	AString0	Message1	
З	[root]	AString1	Message2	
4	[root]	AString2	Message3	

# 3-4 Conversion of Images

In NA, images to be used for objects are also registered into a resource. You can get image files from the project file of NS. The image files used in NS are stored in the project folder.



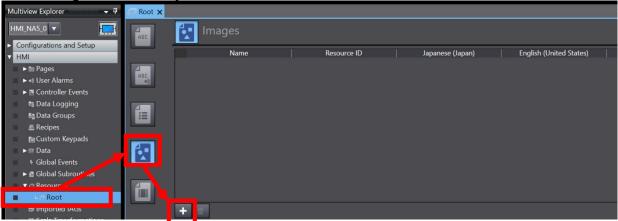
The contents of the folder are shown below. The images in the red frame represent the image files used in NS. These files are to be registered into a resource.



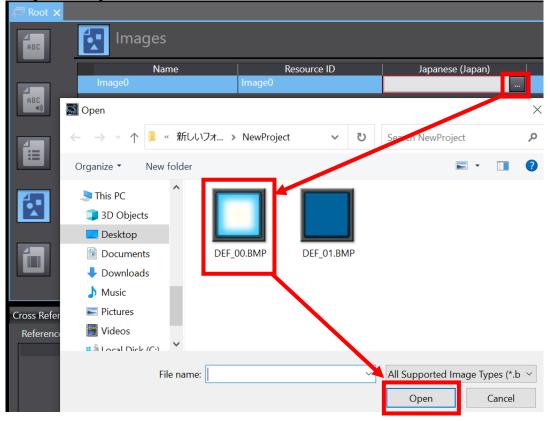


txttable.cfg

1. Add an image resource of Sysmac Studio.



2. Assign the image files of NS to the added resource.



3. When you perform the above steps, the image files of NS can be used on NA.

💭 Root 🗙				
ABC	Images			
	Name	Resource ID	Japanese (Japan)	English (United States)
	Image0	Image0	DEF_01.bmp	
ABC 40				

# Precautions for Correct Use

In NS, there is a function to set the transparent color of images.

NA does not have an equivalent function, so you need to apply transparency processing to image files.

The transparency processing can be used via image processing sites on the Internet and commercial image processing software.

The following shows a transparent color setting screen of NS.

Color Transparent Setting		×
File Name Transparent color DEF_01.BMP DEF_00.BMP	Transparent color Reset	Set All Reset from All Cancel

# **4** Screen Replacement from NS to NA

This section describes the concepts of replacing the screens of NS with those of NA and the procedures for that.

Refer to the *Programmable Terminal NA-series Replace Guide From NS to NA (Cat. No. V469)* for how to select and set the specific objects to replace.

## 4-1 Extraction of Base Screens and Similar Screens of NS

Some replacement-source screens of NS include multiple similar screens.

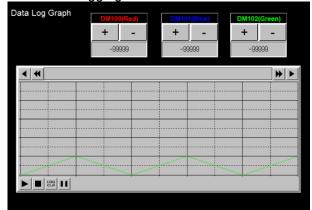
It is not efficient to create similar screens again and again, so look through the screens before creation, and extract the base screens and similar screens.

First choose a base screen, find a screen similar to that, and link them to each other. We will use the following three screens for description as an example of the concept.





Screen 3: Logging screen



In the above case, it turns out that both the screens 1 and 2 are management screens and also the objects in use are almost the same.

Refer to the screen 1 as a base screen, and the screen 2 as a similar screen.

When actually creating the screen 2, reuse the contents of the screen 1.

The screen 3 is not similar to any screens, so refer to it as a base screen.

Although there is no rule for how to summarize, you are recommended to write down the definition on an Excel table etc. as shown below.

Screen number	Screen name	Base screen	Similar screen * Base screen number
1	Management screen 1	Yes	
2	Management screen 2		1
3	Logging screen	Yes	

Screen 2: Management screen 2

16

17

18

19

2Й

-99999

-99999

-99999

-99999

-99999

1/2

Management screen 2

11

12

13

14

15

-99999

-99999

-99999

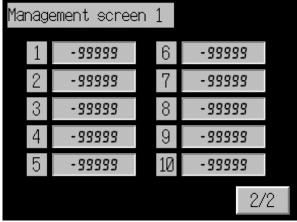
-99999

-99999

### 4-2 Creation of Base Screens

In this section, the management screen 1 of NS is replaced with that of NA as an example of screen replacement from NS to NA.

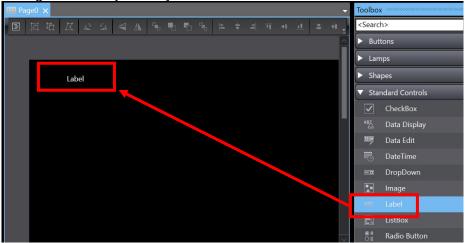
\* The procedure is described on the premise that the conversion of memory maps and string resources is completed.



1. On the CX-Designer, check the setting of the object written as **Management screen 1**. Select the object to check that it is a label object.

Management screen 1	
Label - LBL0000	
General Background Label Message Frame Flicker Control Flag	Size/Position
Object Comment	
🔲 Use as a Message Display	

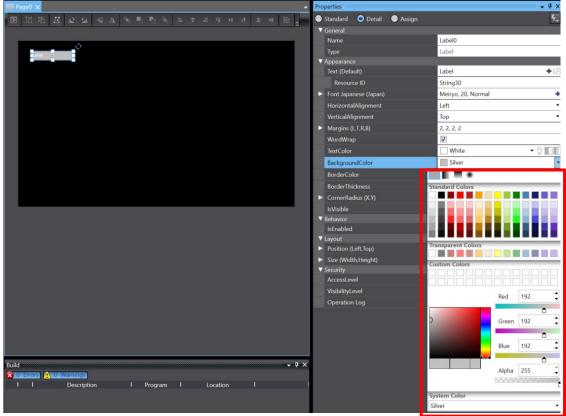
2. Arrange a label object in Sysmac Studio.



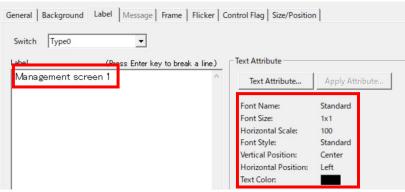
- abel LBL0028 General Background Label Message Frame Flicker Control Flag Size/Position ▼ Tile Background 100 Color -The RGB setting is displayed in hexadecimal. Color Setting The setting is displayed in decimal Color Setting notation in NA, so convert it beforehand. In the case of the left setting, 0xC0 User Palette can be converted into 192. Register RGB C0, C0, C0 Sample Pattern C Order of Col No. Gradation
- 3. Check the background color setting in CX-Designer.

4. Set a background color in Sysmac Studio.

Set the Red, Green, and Blue values in the lower right in the red frame to *192* checked above. The Alpha value under them should be set to *255*. This setting represents transparency. When you set it to 0, the background color becomes transparent. As the value increases, the transparency becomes lower.



5. In the label setup of CX-Designer, check the display text and font settings.



6. Configure the display text and font settings in Sysmac Studio. Enter the settings checked above into the default text and font settings. The font *Standard* used in NS is not in NA.

When entering Japanese, you are recommended to set the font to Meiryo.

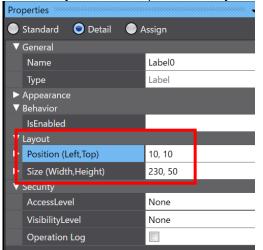
Page0 ×	Properties
图 因 因 及 오 오 속 A % % % % % % * * * * * * * * * * * * *	😬 💽 Standard 💿 Detail 🕒 Assign
	▼ General
	Name Label0
	Type
Management Screen1	▼ Appearance
Management Screen1	Text (Default) Management Screen1
	Resource ID String1
	▼ Font Japanese (Japan) Meiryo, 20, Normal
	Family Meiryo
	Size 20
	Style Normal
	HorizontalAlignment Left
	VerticalAlignment Top
	Margins (L,T,R,B) 2, 2, 2, 2
	WordWrap
	TextColor Black
	BackgroundColor Silver
	BorderColor White
	BorderThickness 0

7. Check the Size/Position settings in CX-Designer.

Label - LBL0000

-Size		
Width	315 dots	
Height	50 🔆 dots	
–Position fi	om the Upper Left of Screen/Frame/Table	
×	10 dots	
Y	10 dots	

8. <u>Set the object size and position in Sysmac Studio.</u>

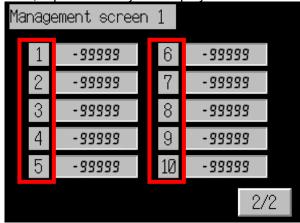


# Additional Information

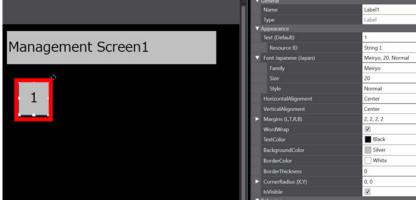
NS and NA are different in resolution even if the same in panel size. Adjust the object size and position according to the model to replace. The following shows the resolution for each panel size of NS and NA. A strict adjustment is not required. The purpose is to provide the same object layout as NS.

Unit type	Display Size	Unit type	Display Size
NS5-SQ0[]-V1			
NS5-SQ0[]-V2			
NS5-TQ0[]-V2			
NS5-MQ0[]-V2	320x240	NA5-7W001□-V1	800x480
NS5-SQ1[]-V2			
NS5-TQ1[]-V2			
NS5-MQ1[]-V2			
NS7-SV0[]			
NS8-TV0[]-V1		NA5-7W001⊓-V1	800x480
NS8-TV0[]-V2			000,400
NS8-TV1[]-V1	640x480		
NS10-TV0[]			
NS10-TV0[]-V1		NA5-9W001□-V1	800x480
NS10-TV0[]-V2			
NS12-TS0[]			
NS12-TS0[]-V1	800x600	NA5-12W101□-V1	1280x800
NS12-TS0[]-V2			
NS15-TX0[]-V2	1024x768	NA5-15W101□-V1	1280x800
NS-Runtime	3840×2400	Soft-NA	800×480
	*Resolution can be changed in 1 dot units		1280×800 1920×1080

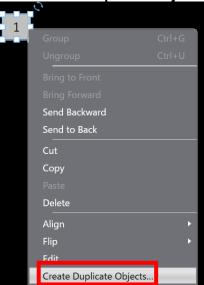
9. Next, replace the objects displayed as **1 to 10**.



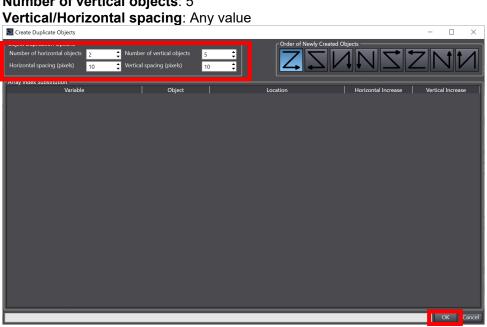
10. The above objects are labels, so create the label object **1** in Sysmac Studio referring to the replacement method in Step 1.



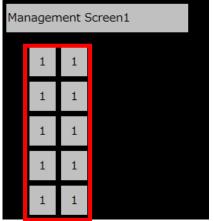
11. Right-clicking the created object displays the following pop-up menu. <u>Select Create Duplicate Objects.</u>



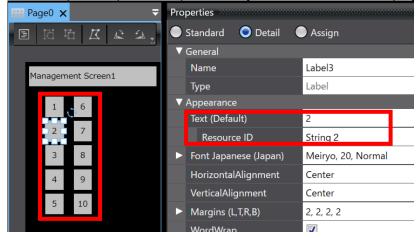
 When the Create Duplicate Object screen is displayed, configure the following settings in the Object Duplication Options field, and press the OK button. Number of horizontal objects: 2 Number of vertical objects: 5



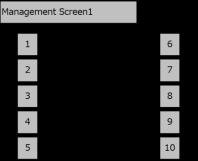
13. The object will be duplicated by the number set on the Create Duplicate Object screen.



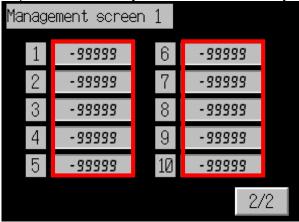
14. Set Text (Default) of the duplicated object to the character displayed in NS.



15. Adjust the object display positions to those in NS.



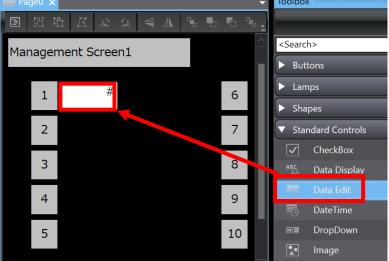
16. Replace the value objects next to the label objects displayed as **1 to 10**.



17. Check the value object settings in CX-Designer.Open Control Flag, and check that Enable is selected in the Input setting field.You can check that a value entry is enabled in this object.

1	- <b>33,333</b> 6 - <b>33333</b>	
2	lumeral Display & Input - NUM0006	×
4	General   Text   Background   Keypad   Frame   Max/Min   Flicker   Write   Password   Control Flag   Macro   Size/	Position
3	- Input-	1
U I	Enable     Action when Specifying Indirect	
4	C Disable C Indirect C Indirect C Indirect	
•	Address(4) Set(1) C Enable Input when Address OFF	
5	Display	] ]
- 3	Display     Action when Specifying Indirect	
	C Hide C Indirect C Display when Address ON(Z)	
	Address(5) Set(2) C Display when Address OFF	
	Display (Numeral Display)	ן ר
	C Display     C Ust     C Ust	
	C Indirect     Image: Comparison of the sector	

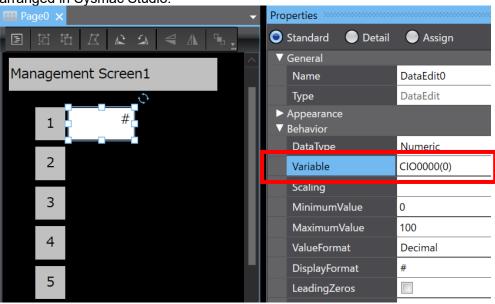
# 18. Arrange a **Data Edit** object in Sysmac Studio.



19. Check the communications address in CX-Designer.

ral Display & Input - NUM0006 eral   Text   Background   Keypad   Frame   Max/Min   F	lisker Write Decovered Co	ntrol Elan Macro Siza/Das
bject Comment		introi riag   Macro   Size/Pos
Iumeral Display Type Display Type Decimal Storage Type INT(Signed 1 word) Range -32768 - 32767	Format Integer 5 Decimal 0	
nit&Scale Set Unit&Scale No. 0+ Set1 Unit	Scale	Offset
Indirect Specification of Unit&Scale No.	Set2	/ «/Min Limit Check after rsion
ddress	Set3	entry

20. Enter the address checked in CX-Designer, into the **Variable** setting of the **Data Edit** object arranged in Sysmac Studio.

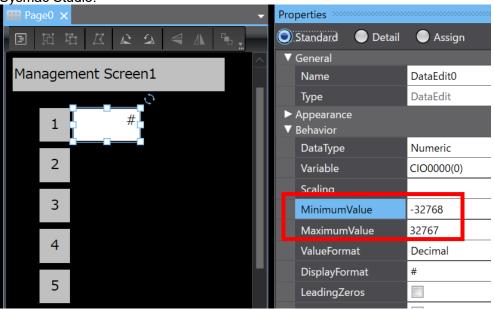


21. Check the Max/Min settings in CX-Designer.

In the following case, no settings have been configured, so the **Maximum/Minimum Value** settings of the assigned data type represent the maximum/minimum limits.\* It is an INT type, so the range is -32768 to 32767.

- <b>33,333</b> 6	- 99999	
Numeral Display & Input - NUM0006		)
General Text Background Keypad Fr	ame Max/Min   Flicker   Write   Password   Control Flag   Mac	ro Size/Position
- Range		
Type of Value © Immediate Value	C Difference from Current Value	
Maximum Input Limit		
Value	0	
C Indirect Reference	Address(0)	Set1
Minimum Input Limit		
Value	0	
C Indirect Reference	Address(X)	Set2

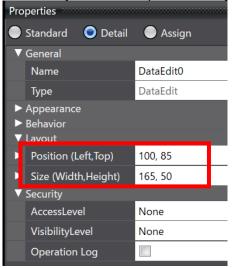
22. Enter the values checked in CX-Designer, into the **Maximum/Minimum Value** fields of Sysmac Studio.



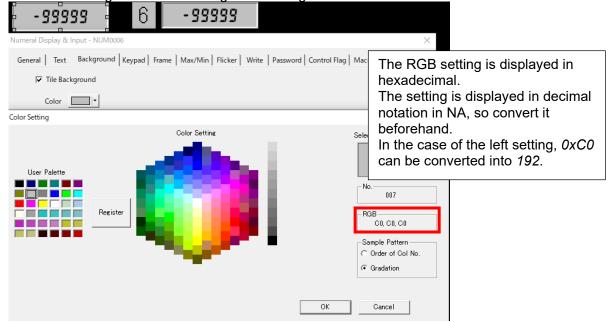
23. Check the Size/Position settings of CX-Designer.

- 99999	6 -99999	
Numeral Display & Input - NUM0006		×
General     Text     Background     Keyp       - Size     -     -     -       Width     165 ÷     dots       Height     50 ÷     dots       - Position from the Upper Left of Scrut     X     100 ÷       X     100 ÷     dots       Y     85 ÷     dots	ad   Frame   Max/Min   Flicker   Writ	te   Password   Control Flag   Macro Size/Position

24. Set the object size and position in Sysmac Studio.



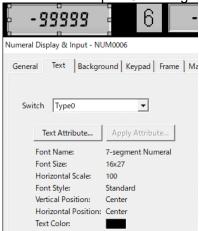
### 25. Check the background color setting in CX-Designer.



26. Set a background color in Sysmac Studio. Set the Red, Green, and Blue values in the lower right in the red frame to *192* checked above.

📟 Page0 🗙 👻	Properties	
ERHRRA A.	💿 Standard 🛛 🔵 Detail	Assign
	▼ General	
	Name	DataEdit0
Management Screen1	Туре	DataEdit
0	▼ Appearance	
	<ul> <li>Font Japanese (Japan)</li> </ul>	Meiryo, 20, Normal
1 #	HorizontalAlignment	Right
	VerticalAlignment	Тор
2	WordWrap	<b>V</b>
	TextColor	Black
3	BackgroundColor	Silver
	BorderColor	
4	BorderThickness	Standard Colors
5	► Behavior	
		Transparent Colors
		Custom Colors
		Red 192 🗘
		Green 192
		Blue 192
		Alpha 255 🗘

27. In the label setup of CX-Designer, check the display text and font settings.



28. Configure the display text and font settings in Sysmac Studio. Enter the settings checked above into the default text and font settings.

📟 Page0 🗙 👻	Properties	
E H H K & A 4 4 4	💿 Standard 🛛 🔵 Detail	🕘 Assign
	▼ General	_
	Name	DataEdit0
Management Screen1	Туре	DataEdit
	▼ Appearance	
¢	▼ Font Japanese (Japan)	DF7segHMI, 30, Normal
1 #	Family	DF7segHMI
	Size	30
2	Style	Normal
	HorizontalAlignment	Center
3	VerticalAlignment	Center
	WordWrap	
4	TextColor	Black
	BackgroundColor	Silver
5	BorderColor	Transparent

29. Check the Frame settings of CX-Designer.

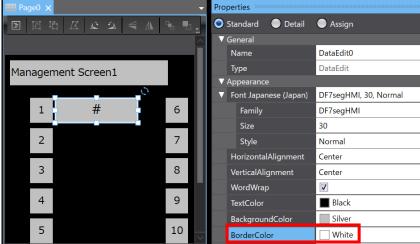
There is no three-dimensional frame setting in NA, so it cannot be replaced. Replace **Color (Border)** only.

-99999	6	- 99999
Numeral Display & Input - NUMO	0006	×
General Text Backgroun	d Keypad Fra	ame   Max/Min   Flicker   Write   Password   Control Flag   Macro   Size/Position
Color (Left/Top)		Frame ON/OFF Display
Color (Right/Bottom)		Address
Frame Size	2	
Color (Border)		

### 30. Set BorderColor and BorderThickness of Sysmac Studio.

If **BackgroundColor** and **BorderColor** are the same, the frame will not be displayed in 3-D in NA, so you are recommended to change **BorderColor**.

In the case of the following object configuration, you are recommended to set **BorderColor** to *White*.



31. Right-clicking the created object displays the following pop-up menu. Select **Create Duplicate Objects**.

#	6	
• • • • • • • • • • • • • • • • • • •	Group	Ctrl+G
		Ctrl+U
	Bring to Front	
	Send Backward	
	Send to Back	
	Cut	
	Сору	
	Delete	
	Align	۰.
	Flip	۰.
	Edit	
	Create Duplicate Ob	jects

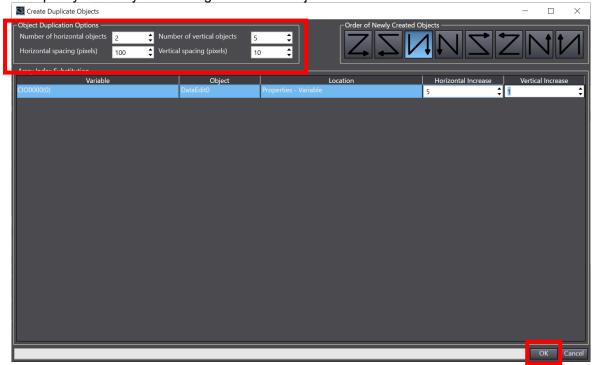
32. When the **Create Duplicate Object** screen is displayed, configure the following settings in the **Object Duplication Options** field, and press the **OK** button.

Number of horizontal objects: 2

Number of vertical objects: 5

Vertical/Horizontal spacing: Any value

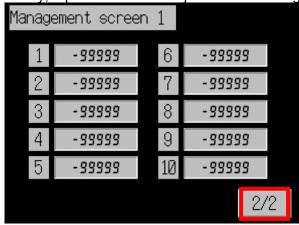
\* If any array variable is specified in the object to duplicate in the **Object** field, the array element number can be incremented at the time of duplication. Making this setting eliminates the need to specify the array element again for each object.



33. The object will be duplicated by the number set on the Create Duplicate Object screen.

Management Screen1					
	1	#		6	#
	2	#		7	#
	3	#		8	#
	4	#		9	#
	5	#		10	#

34. Finally, replace the button object in the lower right of the screen.

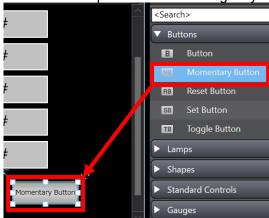


# 35. Check the button object settings in CX-Designer.

The object will be created with Action Type as Momentary and the shape as rectangle.

VOIT BULLOIT - FB0022					~
General Color/Shape	Label Frame Flick	er   Write   Password   Group   G	Control Flag   Macro   Size/Po	osition Other	
Object comment					
Action Type	Address				
Momentary	Write Address	SELEAL:00010.00	Set1		
C Alternate	Display Address1	SELEAL:00020.00	Set2		
C SET	Display Address2		Set3	Set3	
Button type	Explanation				
Rectangle(Type1)		F according to the ON/OFF of write			
Rectangle(Type2-		F according to the ON/OFF of disp			
Rectangle(Type2-		F according to the ON/OFF of disp	·		
Rectangle(Type3) The color changes according to the combination of display addres			p 0		
Circle(Type1) Goes ON/OFF according to the ON/OFF of write address.			-2/2		
Circle(Type2-1) Goes ON/OFF according to the ON/OFF of display address 1.					
Circle(Type2-2) Goes ON/OFF according to the ON/OFF of display address 1 or dis		lay address 1 or dis		D	

- 36. Arrange **Momentary Button** in Sysmac Studio. <u>The button shape of NA is a rectangle by d</u>efault, so no settings need configuring.



### 37. Check the Write Address and Display Address settings in CX-Designer.

bject comment				
Action Type	Addross			
Momentary	Write Address	SELEAL:00010.00	Set1	
C Alternate	Display Address1	SELEAL:00020.00	Set2	
C SET	Dispiay Address2		Set3	_
Button type	Explanation			
Rectangle(Type)		FF according to the ON/OFF of writ		
Rectangle(Type2-1) Goes ON/OFF according to the ON/OFF of display address 1				
Rectangle(Type2-2) Rectangle(Type3) Goes ON/OFF according to the ON/OFF of displa The color changes according to the combination Gircle(Type1) Goes ON/OFF according to the ON/OFF of write.				
			-	
			. 2	
Circle(Type2-1) Goes ON/OFF according to the ON/OFF of displa Circle(Type2-2) Goes ON/OFF according to the ON/OFF of displa				

38. Open the button properties in Sysmac Studio, and set the Write Address setting of NS to the Variable item.

Change the **VisualFeedback** setting to *Feedback (Button)*. When the **FeedbackExpression** setting item is displayed, set the **Display Address** setting of NS.

	10.		
Properties			
💿 Standard 🛛 Detail 🔵 Assign			
▼ General			
	Name	Button0	
Туре		MomentaryButton	
► Appearance			
▼ Behavior			
	Variable	CIO0010(0)	
	VisualFeedba	Feedback (Button)	
	FeedbackExp	CIO0020(0)	

39. Check the **ON/OFF color** settings in CX-Designer.

ON/OFF Button - PB0022	
------------------------	--

General	Color/Shape Label Fr	ame   Flicker   Write   Password   Group   Control Flag   Macro   Size/Position   Other
	OFF color	Address 1 Set 5
	ON color	Indirect reference of color       Address2         Set6

X

40. Set **BackgroundColorButtonUp** and **BackgroundColorButtonDown** settings in Sysmac Studio.

' General	
Name	Button0
Туре	MomentaryButton
Appearance	
Design	Rectangle
TextButtonUp (Default)	Momentary Button
Resource ID	String11
TextButtonDown (Default)	Momentary Button
Resource ID	String11
' Font Japanese (Japan)	Segoe UI, 12, Normal
Family	Segoe UI
Size	12
Style	Normal
HorizontalAlignment	Center
VerticalAlignment	Center
WordWrap	
TextColorButtonUp	Black
TextColorButtonDown	Black
BackgroundColorButtonUp	Silver
BackgroundColorButtonDown	Yellow

BackgroundColorButtonUp represents OFF color of NS, and BackgroundColorButtonDown represents ON color of NS.

41. Check the display text and font settings in CX-Designer. You can set another string to **Momentary Button** separately for OFF and ON. Use the drop-down object in the upper-right red frame to change and check that.

General Color/Shape Label Frame Flicker Write Pass	sword   Group   Control Flag   Macro   Size/Position   Other
Switch Type0 <u>S</u> witch Status	OFF Apply String
Lahel (Press Enter key to break a line)	Text Attribute
2/2	Text Attribute Apply Attribute
	Font Name:     Standard       Font Size:     1x1       Horizontal Scale:     100       Font Style:     Standard       Vertical Position:     Center       Horizontal Position:     Center       Text Color:     Text
< >	Auto resize text     Indirect Reference of Text Color     Address     Set(2),,,
Switch Label for Address ON/OFF  Ligk with the Write Address ON/OFF  Link with the Display Address 1 ON/OFF  Link with the Specified Address ON/OFF  Address	Set(4)

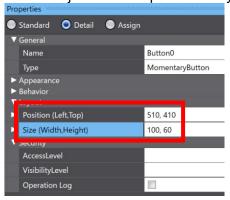
42. Configure the text and font settings checked in Sysmac Studio. Set the text for OFF of NS to the **TextButtonUp (Default)** item. Set the text for ON of NS to the **TextButtonDown (Default)** item.

Properties				
💿 Standard 🛛 Detail 💭 Assign				
▼	General			
Name		Button0		
	Туре	MomentaryButton		
▼	Appearance			
	Design	Rectangle		
	TextButtonUp (Default)	2/2		
	Resource ID	String11		
	TextButtonDown (Default)	2/2		
	Resource ID	String11		
▼	Font Japanese (Japan)	Meiryo UI, 24, Normal		
	Family	Meiryo UI		
	Size	24		
	Style	Normal		
	HorizontalAlignment	Center		
	VerticalAlignment	Center		
	WordWrap			
	TextColorButtonUp	Black		
	TextColorButtonDown	Black		
	BackgroundColorButtonUp	Silver		
	BackgroundColorButtonDown	Yellow		
	BorderColorButtonUp	Linear		

43. Check the Size/Position settings of CX-Designer.  $_{\text{DN/OFF Button - PB0022}}$ 



44. Set the object size and position in Sysmac Studio.



45. On CX-Designer, check the screen number of **Management screen 1**.
Project Workspace



46. Open the **Properties** page in Sysmac Studio, and set **Name** to *ManagementScreen1* and **PageIndex** to *0*.

Pro	perties bootcostones			° <b>↓ ₽ ×</b>			
۲	Standard 💿 Detail 🧲	Assig	า	<b>%</b> →			
▼	General						
	Name	ManagementScreen1					
	Туре	Page					
	PageIndex	0					
▼	Appearance		•				
	BackgroundColor	📕 Bla	ack	•			
▼	Behavior						
	PageType	Main 🗸					
	BackgroundPage						
	AutoNavigateKeypads						
▼	Layout						
►	Size (Width,Height)	800, 4	80				

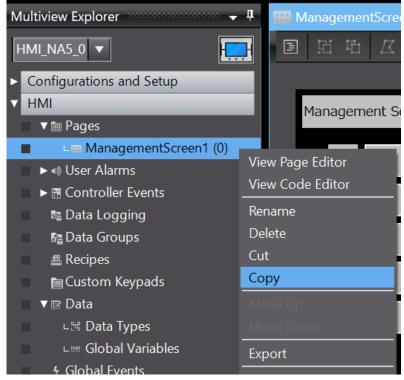
### 4-3 Reuse for Similar Screens

As an example of reuse for similar screens, this section describes how to reuse **ManagementScreen1** created in *4-2 Creation of Base Screens* for creating **ManagementScreen2**.

Copy the screen, and manually correct the differences from the base screen.

1. Copy the screen.

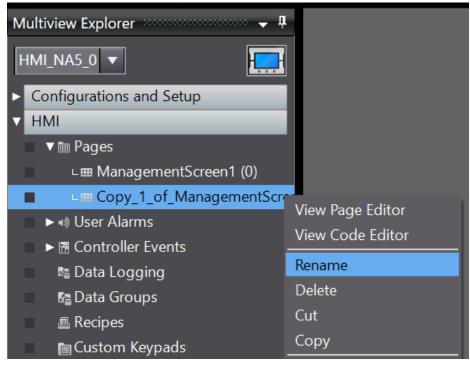
Right-click ManagementScreen1 in Multiview Explorer - HMI - Pages, and select Copy.



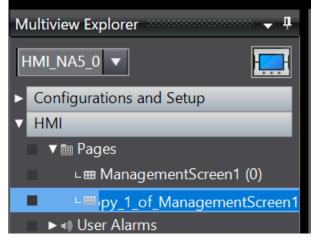
2. Right-click Multiview Explorer – HMI – Pages, and select Paste.



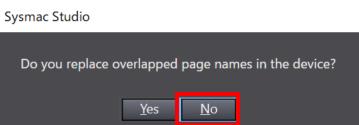
3. Right-click the created Copy\_1\_of\_ManagementScreen, and select Rename.



4. You can change the screen name, so change it to *ManagementScreen2*.



5. Changing the screen name displays the following message, and select No.



6. Open **ManagementScreen2**. The words in the red frames are different, so correct each of them.

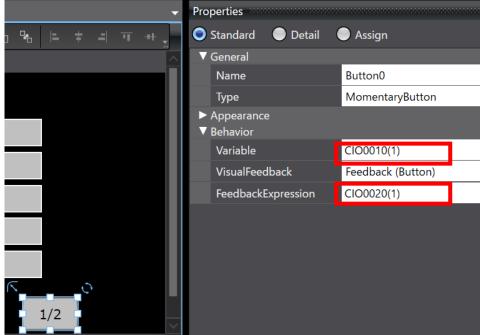
ManagementScreen2 ×													
F	ļ	i i	Д	£	<u></u>	$\mathbf{V}$	Δ	٩.			•	=	ŧ
	Mai	nagen	nent Sc	reen1									
		1		#			6			#			
		2		#			7			#			
		3		#			8			#			
		4		#			9			#			
		5		#			10			#			
												2/2	

7. The display after correction is as follows.

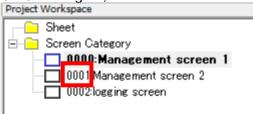
The variables set for **Data Edit** objects and **Momentary Button** in the red frames are different from those of **ManagementScreen1**, so correct each of them.

ManagementScreen2 🗙								
E			€ 1	°. •. •. •.	<b>-</b>			
	Managen	nent Screen2						
	11	#	16	#				
	12	#	17	#				
	13	#	18	#				
	14	#	19	#				
	15	#	20	#				
					1/2			
					-/-			

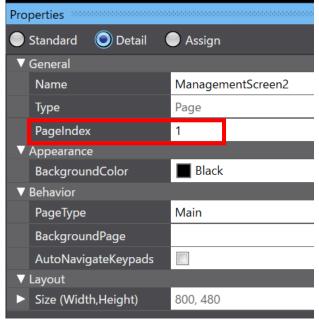
8. <u>Correct the variables as shown below.</u>



9. On CX-Designer, check the screen number of Management screen 2.



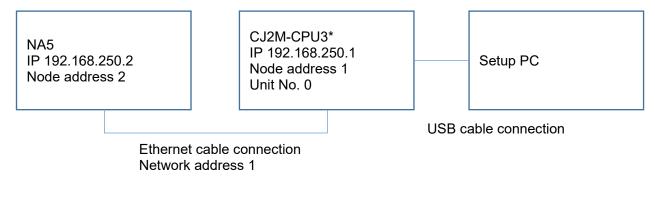
10. Open the **Properties** page in Sysmac Studio, and set **PageIndex** to 1.



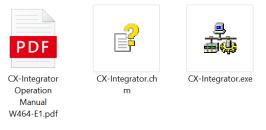
### **5 Routing Table Settings on CJ Side**

To connect NA and CJ via FINS Ethernet, routing table settings needs configuring. If no routing table settings are configured in the CJ CPU in use, configure them according to the procedure in this section. (No settings need configuring if the routing table settings are already configured for connections with NS.)

Description is given through the following unit configuration. Also, set the operating mode of the CJ2M to **PROGRAM mode** beforehand.

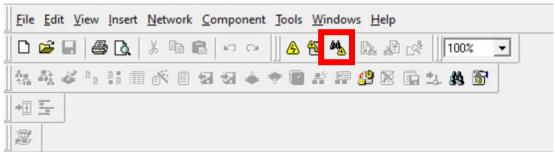


1. Start the CX-Integrator in the setup PC.



2. Click the Auto Online button.

💑 NewProject - CX-Integrator - [System Overview]

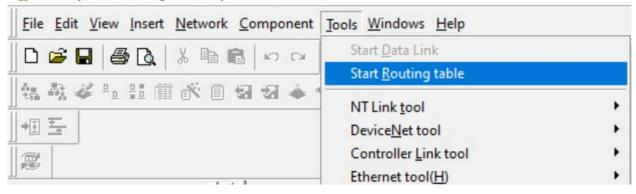


3. When the dialog is displayed, click the **Connect** button with **USB connection** selected.

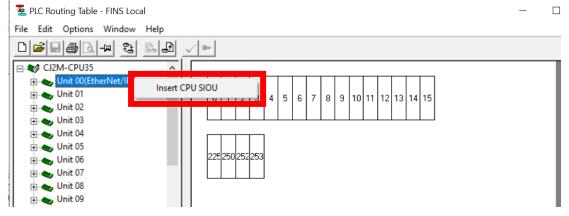
Auto Online	$\times$
Goes online automatically. Select connection type and press [Connect] button.	
Connection type	
${f C}$ Serial connection(also when using USB-Serial conversion cable)	
Serial port of PC	
Connection will automatically be made to the PLC connected directly to the P via USB cable #Please select "Serial connection" when using USB-Serial conversion cable. #Supported PLC: NSJ series,CJ2-CPU,CP1H/L,NJ5 series	C
Connect Cancel	

4. Click Tools – Start Routing table from the menu bar.

NewProject - CX-Integrator - [System Overview]



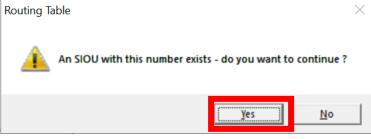
5. When the routing table setting screen is displayed, right-click **Unit 00 (Ethernet/IP)** in the screen left, and click the **Insert CPU SIOU** button.



6. When the network address setting dialog is displayed, enter *1* into **Local Network Number** and click the **OK** button.

Ent	ter SIOU Details		$\times$
	CPU SIOU Local Network Numb	0 -	
	OK	Cancel	

7. When the confirmation dialog is displayed, click the **Yes** button.



8. Check that the network address of the unit 0 is set at 1.

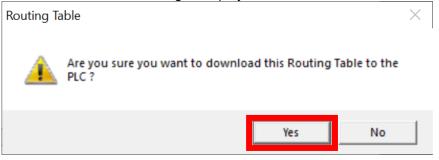
0 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
225 250	252	253														
			,													
						Lo	cal	Netv	vork	#1						
Main Vie	ew [	O.	erv	riew	·   T	able	εV	iew	Г						 	

### 9. Click **Options – Transfer to PLC** from the menu bar.

🔁 PLC Routing Table - FINS Local

File	Edit	Options	Window	Help		
	<b>~</b>	Alw	ays On Top			
	CJ2	Mai	n View		>	-
			sfer to PLC	2	-	h
E	÷	Tran	sfer from P	PLC		6
E	•	Dele	te Routing	Table		
	÷	Acti	vate Routin	ng Table	İ	Г
		Dea	ctivate Rou	iting Table		
6	+	Verit	fy Routing	Table		
E	+	Che	ck Routing	Table for errors		
E	+	Aut	omatic Net	work Search		

10. When the confirmation dialog is displayed, click the **Yes** button.



11. <u>When the dialog is displayed showing routing table transfer is completed, click the **OK** button.</u>



# 6 Debugging

This section describes the debugging perspectives.

As a major premise, check the replaced screens of NA operate in the same manner as NS. Since the following debugging perspectives are minimum confirmation items, the final judgment on debugging items is left to you.

PerspectiveTest perspectiveCommunicationsCommunications shall be established between NA and devices via designed communications method.System settingsCheck the following setting items. • Touch/Error sound • Screen saver • Initial display screen • System memoryLanguage settingsThe same languages as NS shall have been set.Alarm settingsCheck the following setting items. • Address • Display text string • Group
Setupcommunications method.System settingsCheck the following setting items. • Touch/Error sound • Screen saver • Initial display screen • System memoryLanguage settingsThe same languages as NS shall have been set.Alarm settingsCheck the following setting items. • Address • Display text string
System settingsCheck the following setting items. • Touch/Error sound • Screen saver • Initial display screen • System memoryLanguage settingsThe same languages as NS shall have been set.Alarm settingsCheck the following setting items. • Address • Display text string
<ul> <li>Touch/Error sound</li> <li>Screen saver</li> <li>Initial display screen</li> <li>System memory</li> <li>Language settings</li> <li>The same languages as NS shall have been set.</li> <li>Alarm settings</li> <li>Check the following setting items.</li> <li>Address</li> <li>Display text string</li> </ul>
<ul> <li>Initial display screen</li> <li>System memory</li> <li>Language settings</li> <li>Alarm settings</li> <li>Check the following setting items.</li> <li>Address</li> <li>Display text string</li> </ul>
<ul> <li>Initial display screen</li> <li>System memory</li> <li>Language settings</li> <li>Alarm settings</li> <li>Check the following setting items.</li> <li>Address</li> <li>Display text string</li> </ul>
• System memory         Language settings       The same languages as NS shall have been set.         Alarm settings       Check the following setting items.         • Address       • Display text string
Language settingsThe same languages as NS shall have been set.Alarm settingsCheck the following setting items.• Address• Display text string
Alarm settings Check the following setting items. • Address • Display text string
<ul><li>Address</li><li>Display text string</li></ul>
• GIOLD
Screen transition destination
* Generally, the items above are major settings.
Also check the other settings if any.
Data logging Check the following setting items.
Address
Logging cycle setting
• Logging file path
* Check whether it is as specified, otherwise the save location will change.
Broken-line graph Check the following setting items.
Address
Number of points displayed
Data block Check the following setting items.
Address
Set value
Password The behavior shall be equivalent to NS.
'
Unit Check the following setting items.
The same scaling shall have been set.
Dialog settings The dialog displayed shall contain the same words.
Project macro Macros shall be executed under the same conditions as NS.
The macro execution result obtained shall be the same as NS.

Perspective	Test perspective
General object	Check the following setting items.
settings	Address assignment
	Object shape for OFF/ON
	Background color     Tout color
	<ul><li>Text color</li><li>Display text string</li></ul>
	* Check whether no characters lie off their objects.
	When multiple languages are used, check them for each language.
	• Font size * Same as above
	Object size and layout
	<ul> <li>* Since the resolution changes, the object size and the layout change subtly. Check whether the overall screen layouts are natural compared with the original screens.</li> <li>• Display control</li> <li>• Input control</li> <li>• Flicker setting</li> <li>• Macro setting</li> </ul>
Screen transition	Screens shall transition to the same screens as the original ones.
	* The number of pop-up screens that can be displayed varies between NS and NA.
	Check whether they behave as described in the conversion specifications.
Error handling	Generate a typical error, such as sudden power interruption of host or NA and cable in/out during communications, and check the error display and recovery method in NA.
Behavior in case of	If communications are cut off, the system shall not exhibit any unexpected
communication error	behavior when restoring the communications. * If a write operation is performed to the Controller while communications are
	cut off, the NS Series will perform a write operation when restoring the communications; however, the NA Series will not perform a write operation but read the variables of the Controller then reflect them in the display.

# 7 Revision History

Revision history	Date	Revised content					
01	January 2023	Original production					
02	January 2024	Correction of erroneous descriptions					
03	March 2024	Addition of NS-Runtime replacement model					
		NS-Runtime has been added to the NS and NA resolution comparison table					
		for reference in "4-2 Creation of Base Screens ".					

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

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