
Technical Information

STARDOM FCN-100/FCJ Migration



TI 34P02K71-01E

Introduction

■ About This Manual

This manual describes the migration procedure from the data, control applications and Duolet(Java) applications on the NFCP100, to the NFCP500(NFCP501/NFCP502).

For the sake of simplicity, this manual uses the least terminologies and the most basic functions. For more details on functions and specifications, please refer to other available documentation (IM, TI, GS or online help).

■ Organization of This Manual

- Chapter 1: Introduces the overview of migration, and flow of procedure.
- Chapter 2: Introduces the steps to migrate on the target device directly.
- Chapter 3: Introduces the procedure to migrate work in-house equipment in advance.

**STARDOM
FCN-100/FCJ Migration**

4th Edition: TI 34P02K71-01E

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1. Overview

This chapter describes the migration procedure from the data and control applications on the NFCP100, to the NFCP501/NFCP502.

First step, backing up, convert and restore the data on the controller by the command operation on the personal computer.

Next step, migrate the control application for the NFCP100 (project on the Logic Designer), to for the NFCP501/NFCP502. And download to the NFCP501/NFCP502.

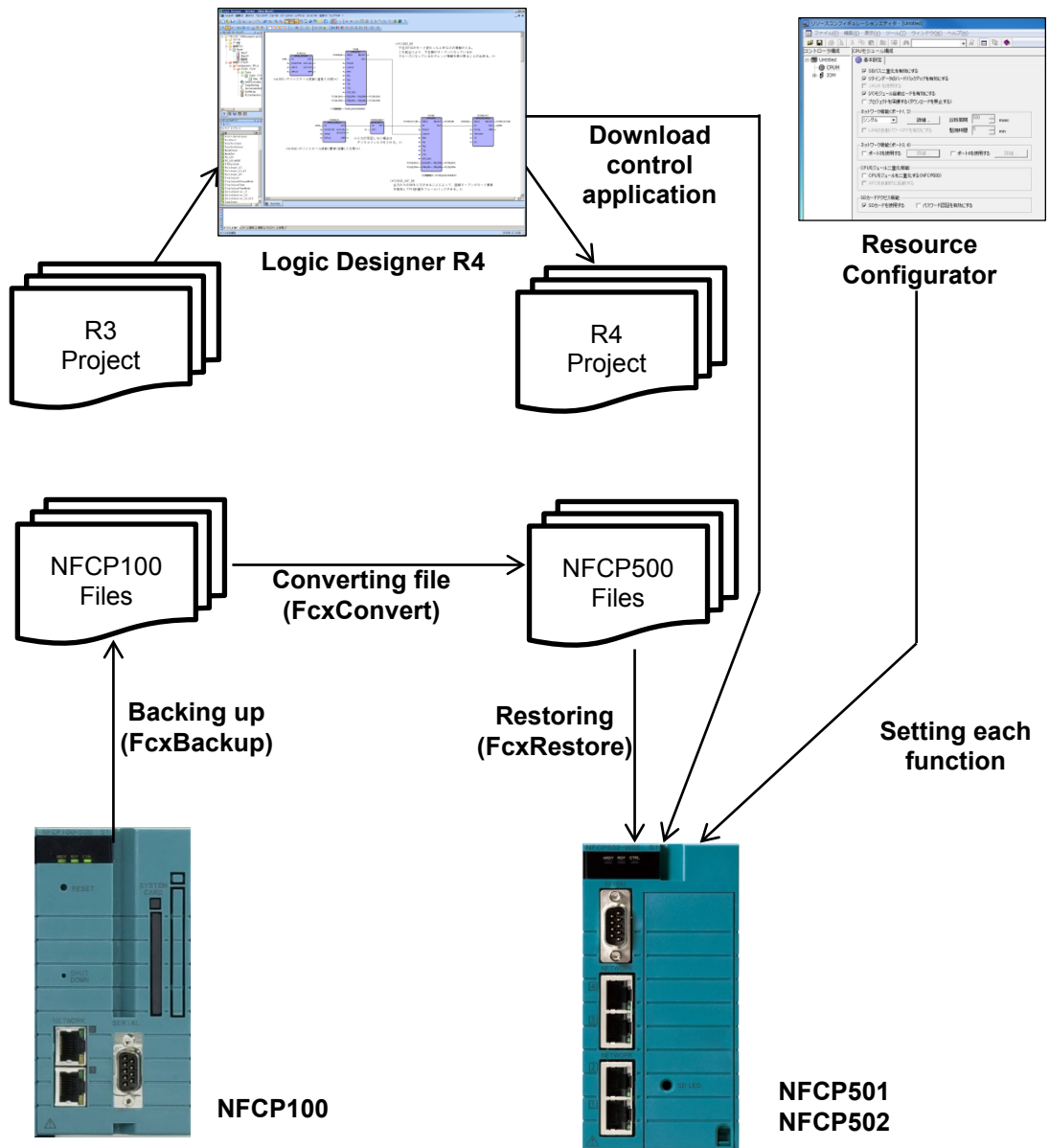


Figure Overview of migration

1.1 Backing up, Converting, Restoring Data

This section describes the command for backing up the data of the NFCP100, for converting it for the NFCP501/NFCP502, and for restoring it to the NFCP501/NFCP502.

The converted file is shown below.

- Retain saved file
- Settings of the resource configurator
- DUONUS.PRP

Setting items that are not included in the NFCP100, will be the default value. If necessary, set it.

- CPU duplex configuration
- SNTP server
- Ethernet port No.3 and No.4 for NFCP502
- SD card

TIP

- Control application, boot project and the source file is not a conversion target. These are compiled and downloaded by the Logic Designer.
- FcxConvert command can not convert the file that was backed up from NFJT100. Re-set IO setting by the resource configurator. Re-set DUONUS.PRP by the maintenance page. Retain saved file can be restored without conversion.

● FcxBackup Command

This command backs up the target files from NFCP100 or NFJT100. "BACKUP" folder will be created in the current directory.

Command: `FcxBackup -all -u <User name> -p <Password> <Host name or IP address>`

User name: User name of the administrator account.

Password: Password of the administrator account.

Host name or IP address: Host name or IP address of the NFCP100.

E.g.: `FcxBackup -all -u user01 -p abc123 192.168.0.1`

TIP

- When you run the FcxBackup, FcxConvert and FcxRestore command in the command prompt, move to the unzipped folder.
- The "-all" argument can be used FcxBackup command R3.10 or later.
- The "-u <user name>" and "-p <password>" argument can be used FcxBackup command R4.10 or later. If you have changed the user name and password from the initial value, be sure to specify them always.

- **FcxConvert Command**

This command converts the FcxBackup command output file to NFCP501/NFCP502 file.

Command: `FcxConvert.exe -t {new CPU type} -i {Source folder} -o {Destination folder}`

New CPU type: "NFCP501" or "NFCP502"

Source folder: "BACKUP"

Destination folder:

E.g. "BACKUP_NFCP501"

Please rename "BACKUP_NFCP501" into "BACKUP" when it is restored to NFCP501/NFCP502.

E.g.: `FcxConvert.exe -t NFCP501 -i BACKUP -o BACKUP_NFCP501`

- **FcxRestore Command**

This command restores (downloads) the FcxConvert command output file to NFCP501/NFCP502.

Command: `FcxRestore {Host name or IP address}`

Host name or IP address:

Host name or IP address of the NFCP501/NFCP502.

E.g.: `FcxRestore 192.168.0.1`

TIP

When restoring the file backed up from the NFCP100 and converted, to the NFCP501 /NFCP502, the IP address of the backup source is set as the restore destination.

- **FcxSaveRetain Command**

This command saves, acquires, restores, and clears the retained data.

In this TI, only clear option is used. The command with "-c" option clears the retain data on the SRAM. This command is used together with the FcxRestore command to ensure that the backed up retained data is reflected in the SRAM.

Command: `FcxSaveRetain -c {Host name or IP address}`

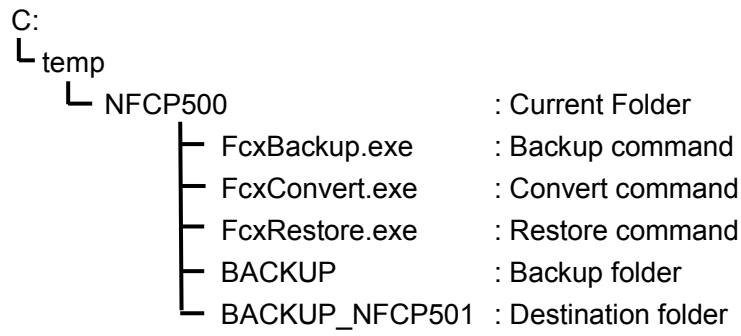
Host name or IP address:

Host name or IP address of the NFCP501/NFCP502.

E.g.: `FcxSaveRetain -c 192.168.0.1`

- **Folder configuration example**

If you specify "C:\temp" to the destination folder of the conversion tool



1.2 Migrating the Control Application

This section describes procedure of migrate the control applications (project on the Logic Designer) for NFCP100 and NFJT100 to NFCP501/NFCP502. In Section 2 or later describes the procedure of the case you do not extend retain data area fundamentally.

- **Not expanding the retain data area (Migration)**
 - If the PLC type is IPC_40, this control application (project) can be used by re-compiling without changing itself.
 - If the PLC type is IPC_32 or IPC_33, re-create the resource with IPC_40, and re-compile.
- **Expanding the retain data area (Extend function)**
 - If the PLC type is IPC_40, re-create the resource with "FCFX_B"/ "FCFX_C", and re-compile.
 - If the PLC type is "IPC_32" or "IPC_33", re-create the resource with "IPC_40" and "FCFX_B", and re-compile.

PLC type	Processor type	Migration Procedure	Remark
IPC_40	FCX FCX_A	Re-compile	
		Create resource for IPC_40, FCFX_B/FCFX_C, and re-compile	If expand the retain data area (refer to IMPORTANT)
IPC_32 IPC_33		Create resource for IPC_40, and re-compile	
SH_40		Create resource for IPC_40, and re-compile	

IMPORTANT

If retain data area is extended, it is careful in clearing retained data.

TIP

The combination of PLC type and processor type is shown in the table below.

PLC type	Processor type	Controller	Remark
IPC_33	FCX FCX_A	NFCP100 (*2) NFJT100 (FCJ) FCN/FCJ simulator	R1.01 or later (FCX_A: R1.11 or later)
IPC_33			R1.30 or later
IPC_40			R1.50 or later
IPC_40	FCX_B	NFCP501/NFCP502 FCN/FCJ simulator	R4.02 or later
IPC_40	FCX_C	NFCP501/NFCP502 FCN/FCJ simulator	R4.20 or later

*1: FCX: For NFJT100 or NFCP100 (not use NFLF111/NFGS813/NFGP813 /NFLP121/NFLC121)

FCX_A: For NFCP100 (use NFLF111/NFGS813/NFGP813/NFLP121 /NFLC121)

FCX_B: For NFCP501/NFCP502, retain data area extended version of FCX_A

FCX_C: For NFCP501/NFCP502 with three or more extension units and NFLF111/NFLP121/NFLC121, device label extended version of FCX_B

*2: If the PLC type is IPC_40, the project for NFCP100 can be used by re-compiling without changing itself.

If the PLC type is IPC_32 / IPC_33, re-create the resource with IPC_40.

If you want to change the processor type to FCX_B/FCX_C, re-create the resource with IPC_40.

● **Using the RS-232-C port on the FCJ**

Change the port name used in the application program.

COM1: If you are migrating to COM1 of NFCP501/NFCP502, the application program about the communication of the COM1 port is not changed.

If you are migrating to a port of the RS-232C communication module, change in the same manner as the COM2 in the next section.

COM2: Migrate to a port of the RS-232C communication module.

Set the Port name of RS-232C communication module (e.g.) RS02 in the resource configurator.

Change "COM2" to (e.g.) "RS02" in the application program.

2. Migrating on the target device directly

This chapter describes the steps to migrate on the target device directly.

This text describes the steps to migrate from NFCP100 to NFCP500. Except for the noted items, it is also true for NFJT100.

■ Migration Environment

The Tools for NFCP500 are required on the engineering PC.

- Logic Designer R4.20 or later
- Resource Configurator R4.20 or later
- Backup, Convert and Restore commands R4.20 or later

TIP

To back up NFCP 100, a Windows 7 or Windows 10 engineering PC is required. Backup commands (R4.20 or later) will not work on Windows XP or Windows Vista PCs.

■ Migration Procedure (on the target device directly)

The following flowchart shows the overview of migration work on the target device directly.

TIP

The definition information of the fieldbus (NFLF111, NFLP121, NFLC121) is stored on the engineering PC with the IP address of the controller as the key. If field bus communication modules are used, it requires advance preparation. For detail, refer to Appendix 3 "Field bus Definition".

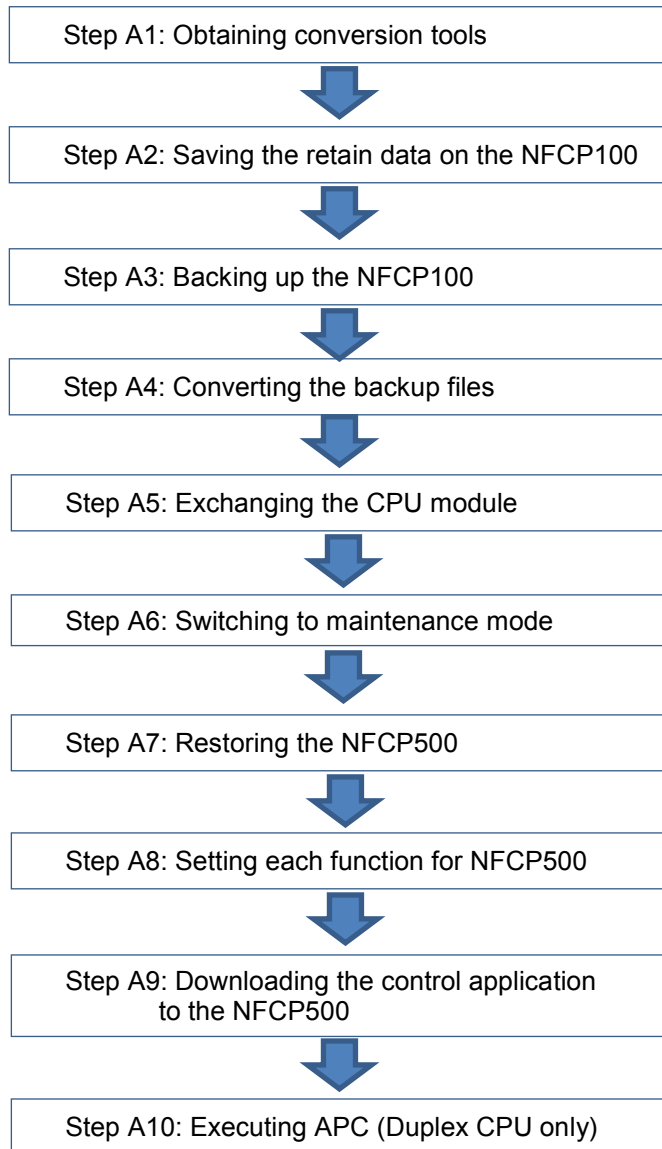


Figure Flowchart of migration

■ Procedure

● Step A1: Obtaining conversion tools

- (1) Insert the system DVD-ROM for the R4.20 or later in the DVD drive.
- (2) Select “DVD Contents.”
- (3) Double-click the FCN/FCJ Basic Software Package.
- Pkg_NFCP500.exe in the Pkg_NFCP500 folder for FCN-500
- (4) Specify a folder for saving unzipped files, and click the [Install] button.
The conversion tools are unzipped.

TIP

For example, if the specified folder for storing unzipped files is “C:\temp,” the following files will be created in that folder.

```
C:\temp\NFCP500\FcxBackup.exe  
C:\temp\NFCP500\FcxRestore.exe  
C:\temp\NFCP500\FcxConvert.exe  
C:\temp\FCXTOOL\FcxSaveRetain.bat  
C:\temp\FCXTOOL\save_retain.txt
```

To specify the name for the unzipped folder, do not include space in the name of the folder.

● Step A2: Saving the retain data on the NFCP100

- (1) Run the Web browser and open the “STARDOM Maintenance Page” on the NFCP100.
- (2) Click “Maintenance Menu.”
The FCX Maintenance Menu is displayed.
- (3) Click “Save Retain Data.”
The last time and data when the retain data was saved is displayed.
- (4) Click the [SAVE] button.
The retain data is saved.

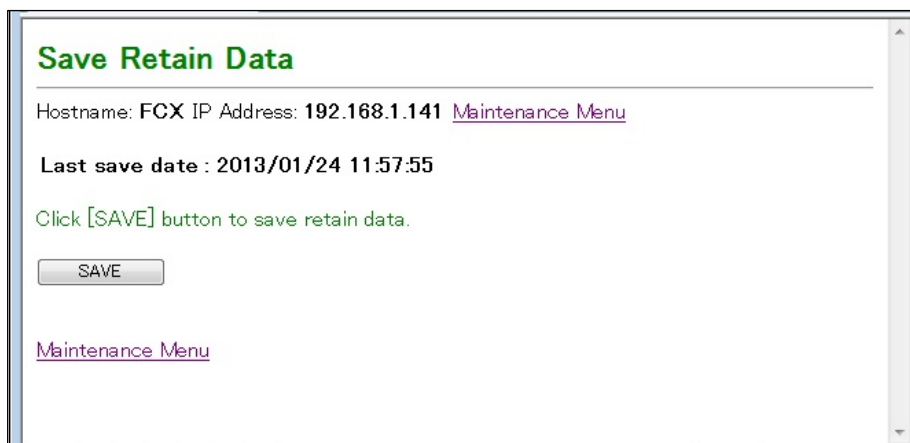


Figure Saving the retain data

TIP

The [SAVE] button is not displayed in the maintenance mode.

If prior to R1.70, please save the retain data refer to the online help.

If the retain data area to extend, the data saved in Step A2 is not available in NFCP500.

• Step A3: Backing up the NFCP100

- (1) In the command prompt window, change the current directory to the folder containing the extracted conversion tools in Step A1.

Supposing that the conversion tools have been extracted to the folder C:\temp, type "cd C:\temp\NFCP500" and press the [Enter] key.

- (2) In the command prompt window, type "FcxB Backup -all -u <user name> -p <password> <host name or IP address>," and press the [Enter] key.

"BACKUP" folder will be created in the current directory.

e.g. C:\temp\NFCP500> FcxB Backup -all -u user01 -p abc123
 192.168.0.1

TIP

If already have a backup, you can skip this step.

• Step A4: Converting the backup files (except NFJT100)

- (1) In the command prompt window, type "FcxC Convert -t <new CPU type> -i <Source folder> -o <Destination folder>," and press the [Enter] key.

Some files for the NFCP501/NFCP502 are created to the destination folder.

e.g. C:\temp\NFCP500> FcxC Convert -t NFCP501 -i BACKUP
 -o BACKUP_NFCP501

• Step A5: Exchanging the CPU module

- (1) Remove the NFCP100 from the base module.

In the case of CPU duplex configuration, remove also the two.

- (2) Transfer the Ethernet cable and the RS-233-C cable from NFCP100 to NFCP501/NFCP502.

Attach the Ethernet cables to the same Ethernet port 1 or 2 before the exchange.

- (3) In the case of new goods NFCP501/NFCP502, start the resources configurator to set the IP address.

- (4) Insert the NFCP501/NFCP502 to the base module.

In the case of CPU duplex configuration, insert only the control side CPU module in this step.

- (5) In the case of new goods NFCP501/NFCP502, so the start-up in the IP address setting mode, and set the IP address in the resource configurator.

After setting, you can exit the resources configurator.

- **Step A6: Switching to maintenance mode on the NFCP500**

- (1) Run the Web browser and open the “STARDOM Maintenance Page” on the NFCP501/NFCP502.
- (2) Select “Maintenance Menu.”
The FCX Maintenance Menu is displayed.
- (3) Select “Reboot.”
The Reboot Menu is displayed.
- (4) Select “Reboot (Maintenance Mode)” and click the [OK] button.
The NFCP501/NFCP502 boots up in maintenance mode.
- (5) Make sure that it has been started in a maintenance mode, and exit the Web browser.

- **Step A7: Restoring to the NFCP500**

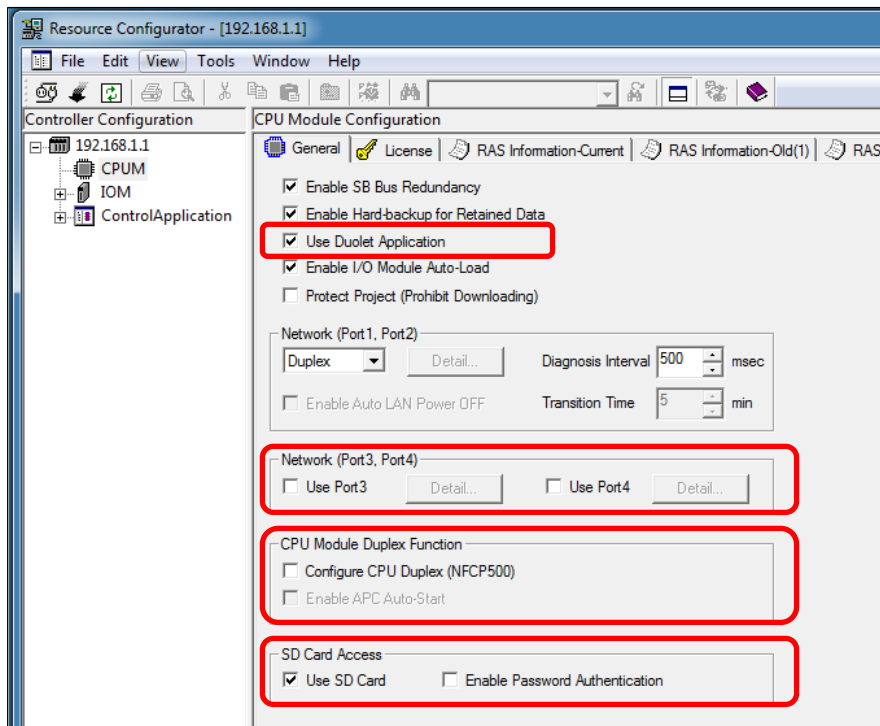
- (1) Rename "BACKUP" folder in Step A3 to another name.
- (2) Rename the destination folder in Step A4 to "BACKUP".
- (3) In the command prompt window, type “FcxSaveRetain -c <host name or IP address>,” and press the [Enter] key.
The command with "-c" option only clears the retain data on the SRAM and does not save the retain data.
e.g. C:\temp\NFCP500> FcxSaveRetain -c 192.168.0.1
- (4) In the command prompt window, type “FcxRestore <host name or IP address>,” and press the [Enter] key.
e.g. C:\temp\NFCP500> FcxRestore 192.168.0.1
- (5) After restoring, change to the online mode in the maintenance page.
- (6) Make sure that it has been started in online mode, and exit the Web browser.

TIP

The IP address of the restored NFCP501/NFCP502 is reflected the IP address of NFCP100. If necessary, change the IP address. If field bus (NFLF111, NFLP121, NFLC121) are used, do the following after Step A7 restore. Step A7-1: Exported by Resource Configurator, Step A7-2: Change IP address, and Step A7-3: Imported by resource configurator. License information can't be migrated to the FCN-500. Please use the CPU module to the required licenses are bundled.

● **Step A8: Setting each function for the NF500**

- (1) Set some settings for new function or additional configuration by the resource configurator, and download it.
 - Duolet function (If necessary)
 - CPU duplex configuration (If necessary)
 - Ethernet port No.3 and No.4 for NF500 (If necessary)
 - SD card: (If necessary)
 - I/O definition (migrating from NFJT100 only)



- (2) Set some settings for new function or additional configuration by the resource configurator,.
 - SNTP server (If necessary)

SEE ALSO

For setting of the SNTP server, refer to the "2.2.6 Time Synchronization" TI "STARDOM Engineering Guide (FCN-500/FCN-RTU)".

• Step A9: Downloading the control application to the NF500

(1) If you have the user library project, copy the user library (mwt file) and the folder named the same name as the library project into the library folder.

E.g.: Copy Userlib.mwt and Userlib folder into
"C:\YOKOGAWA\FCN-FCJ\LogicDesigner\Libraries"

If the user library is compressed in this project, it is also copied user library when it is decompressed. If an existing project is present, it compares the version information before overwriting, and select to overwrite or Save As. Compile the project of the user library in the logic designer of R4 after thawing.

TIP

The user library is a project to which the user is to create your own reference. Library of APPF is not included.

If you are not using the user library, this step is not necessary.

(2) Open the project (R1/R2/R3/R4) by the Logic Designer R4.

The projects in the format of R3 or earlier are converted automatically to R4 format.

TIP

The project of R4 format can't be opened in the R1/R2/R3 Logic Designer.

(3) If the PLC type is defined in IPC_32 / IPC_33, re-create the resource (PLC type: IPC_40). When you re-create the resource, copy and set the definition following information on the logic designer.

- Copy of the task definition
- Copy of the Program POU instance definition
- Copy of the global variable definition
- Setting of target setting dialog
- Copy of the device label variable definition
- Copy of the software wiring definition
- Change of resource names

SEE ALSO

Detailed procedure of re-creating resources, refer to online help "Control Application Programming Guide" - "Control application creating" - "Considerations in the control application programming" - "Project data management."

TIP

If the retain data area to extend, re-create the resource (PLC type: IPC_40, Processor type: FCX_B /FCX_C).

If the retain data area to extend, the data saved is not available in NF500.

If changing the processor type of existing resources, the retain data area will not be extended.

- (4) Make the project by the Logic Designer R4.
- (5) Perform offline download the control application to the NFCP501/NFCP502.
Also download the boot project and the source files as needed.

- **Step A10: Executing APC (Duplex CPU only)**

- (1) After confirming the connection of Ethernet cable and the RS-233-C cable, insert the other one CPU module for stand-by side.
- (2) Run the APC. If APC automatic startup is disabled, run the APC from the resource configurator.

TIP

In the control side and standby side CPU module, use the same model and same revision of basic software.

3. Migrating in-house equipment in advance

This chapter describes the following procedure.

Bring back the data that was backed up from the target equipment on site. Check the operation and conversion work in-house equipment. And then, work for the target equipment on site.

(1) In Step B1 to B16 describes the following procedure.

Without providing the same I/O configuration as the target device as an in-house equipment, check the operation with a minimum configuration of NFCP500, power supply and base module.

Then, reflect the results operation check in-house to NFCP500 in the field.

(2) In Step B1 to B10 and C11 to C14 describes the following procedure.

Prepare the same I/O configuration as the target device as an in-house equipment, check the operation in-house.

Then, replace the NFCP500 used in the operation check in-house in the field.

This text describes the steps to migrate from NFCP100 to NFCP500. Except for the noted items, it is also true for NFJT100.

■ Migration Environment

The Tools for NFCP500 are required on the engineering PC of both the site and the in-house.

- Logic Designer R4.20 or later
- Resource Configurator R4.20 or later
- Backup, Convert and Restore commands R4.20 or later

TIP

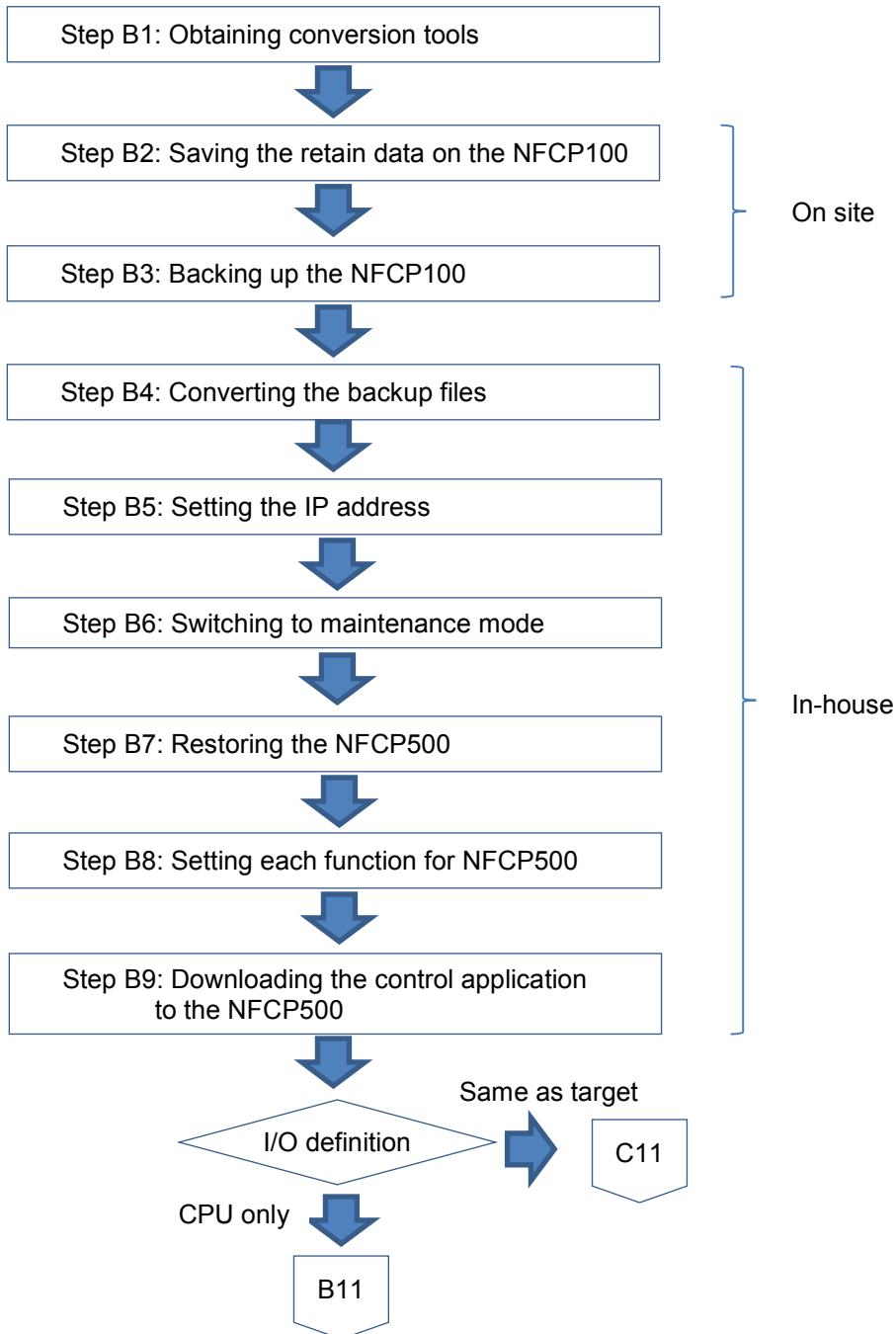
To back up NFCP 100, a Windows 7 or Windows 10 engineering PC is required. Backup commands (R4.20 or later) will not work on Windows XP or Windows Vista PCs.

■ Migration Procedure (In advance to work in-house equipment)

The following flowchart shows the overview of migration work in advance to work in-house equipment.

TIP

The definition information of the fieldbus (NFLF111, NFLP121, NFLC121) is stored on the engineering PC with the IP address of the controller as the key. If field bus communication modules are used, it requires advance preparation. For detail, refer to Appendix 3 "Field bus Definition".



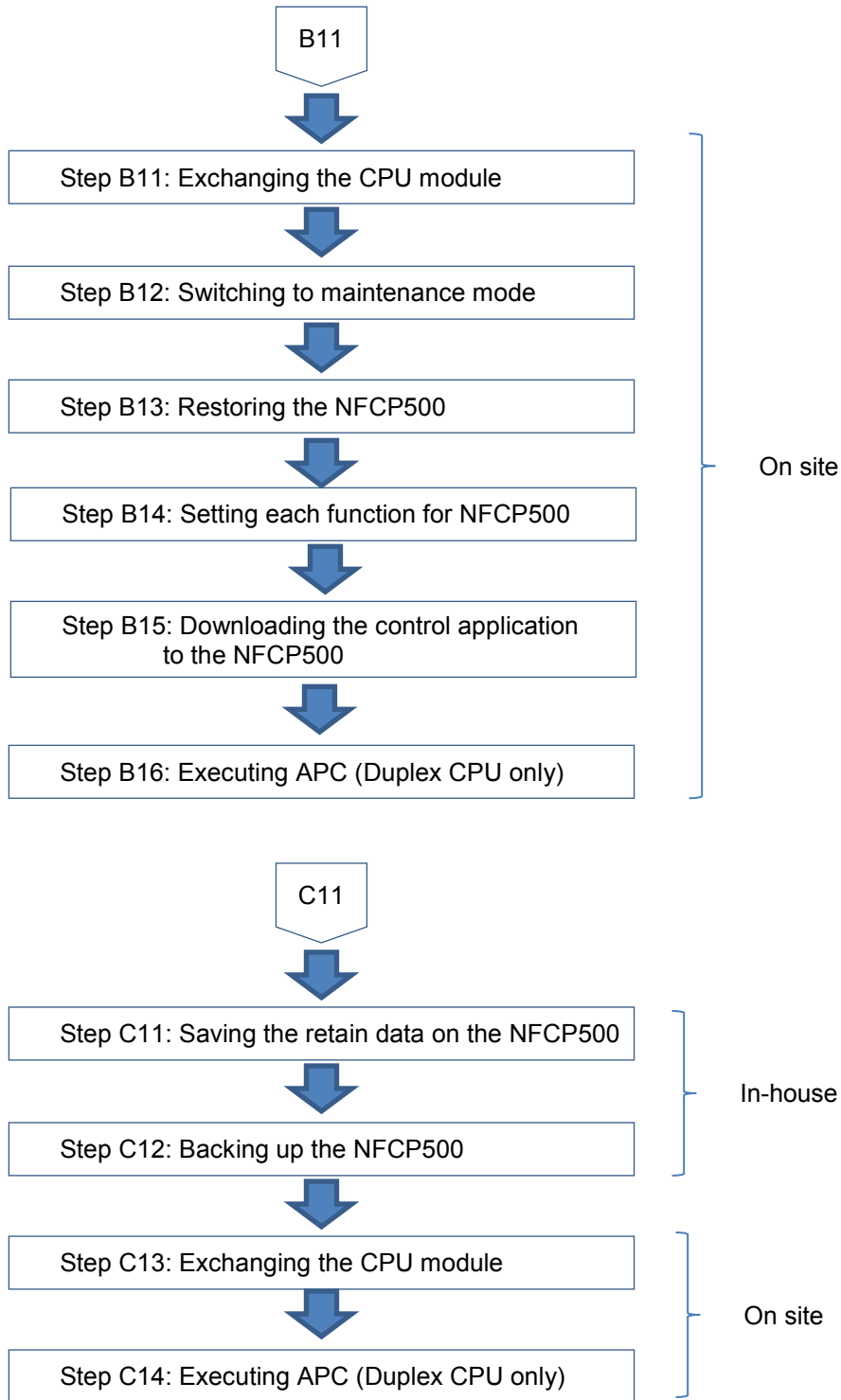


Figure Flowchart of migration

■ Procedure (Work of target equipment in advance)

● Step B1: Obtaining conversion tools

- (1) Insert the system DVD-ROM for the R4.20 or later in the DVD drive.
- (2) Select “DVD Contents.”
- (3) Double-click the FCN/FCJ Basic Software Package.
- Pkg_NFCP500.exe in the Pkg_NFCP500 folder for FCN-500.
- (4) Specify a folder for saving unzipped files, and click the [Install] button.
The conversion tools are unzipped.

TIP

For example, if the specified folder for storing unzipped files is “C:\temp,” the following files will be created in that folder.

```
C:\temp\NFCP500\FcxBackup.exe  
C:\temp\NFCP500\FcxRestore.exe  
C:\temp\NFCP500\FcxConvert.exe  
C:\temp\FCXTOOL\FcxSaveRetain.bat  
C:\temp\FCXTOOL\save_retain.txt
```

To specify the name for the unzipped folder, do not include space in the name of the folder.

● Step B2: Saving the retain data on the NFCP100

- (1) Run the Web browser and open the “STARDOM Maintenance Page” on the NFCP100.
- (2) Click “Maintenance Menu.”
The FCX Maintenance Menu is displayed.
- (3) Click “Save Retain Data.”
The last time and data when the retain data was saved is displayed.
- (4) Click the [SAVE] button.
The retain data is saved.

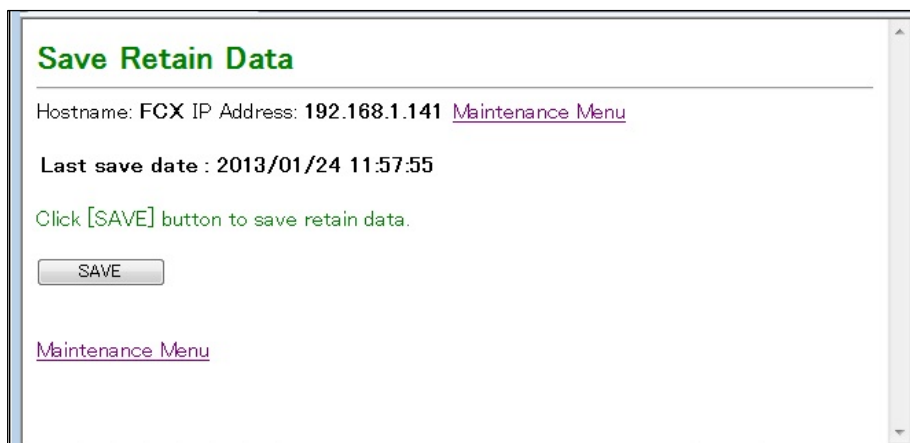


Figure Saving the retain data

TIP

The [SAVE] button is not displayed in the maintenance mode.
If prior to R1.70, please save the retain data refer to the online help.
If the retain data area to extend , the data saved in Step A2 is not available in NFCP500.

● **Step B3: Backing up the NFCP100**

(1) In the command prompt window, change the current directory to the folder containing the extracted conversion tools in Step B1.

Supposing that the conversion tools has been extracted to the folder C:\temp, type "cd C:\temp\NFCP500" and press the [Enter] key.

(2) In the command prompt window, type "FcxB backup -all -u <user name> -p <password> <host name or IP address>," and press the [Enter] key.

"BACKUP" folder will be created in the current directory.

e.g. C:\temp\NFCP500> FcxB backup -all -u user01 -p abc123
 192.168.0.1

TIP

If already have a backup, you can skip this step.

■ Procedure (Work of in-house equipment)

● Step B4: Converting the backup files (except NFJT100)

(1) In the command prompt window, move to the unzipped folder in step B1.

(2) In the command prompt window, type "FcxConvert -t <new CPU type> -i <Source folder> -o <Destination folder>," and press the [Enter] key.

Some files for the NFCP501/NFCP502 are created to the destination folder.

e.g. C:\temp\NFCP500> FcxConvert -t NFCP501 -i BACKUP
 -o BACKUP_NFCP501

● Step B5: Exchanging the CPU module

(1) In the case of new goods NFCP501/NFCP502, start the resources configurator to set the IP address.

(2) Start the NFCP501/NFCP502.

(3) In the case of new goods NFCP501/NFCP502, so the start-up in the IP address setting mode, and set the IP address in the resource configurator.

After setting, you can exit the resources configurator.

● Step B6: Switching to maintenance mode on the NFCP500

(1) Run the Web browser and open the "STARDOM Maintenance Page" on the NFCP501/NFCP502.

(2) Select "Maintenance Menu."

The FCX Maintenance Menu is displayed.

(3) Select "Reboot."

The Reboot Menu is displayed.

(4) Select "Reboot (Maintenance Mode)" and click the [OK] button.

The NFCP501/NFCP502 boots up in maintenance mode.

(5) Make sure that it has been started in a maintenance mode, and exit the Web browser.

● Step B7: Restoring to the NFCP500

(1) Rename "BACKUP" folder in Step B3 to another name.

(2) Rename the destination folder in Step B4 to "BACKUP".

(3) In the command prompt window, type "FcxSaveRetain -c <host name or IP address>," and press the [Enter] key.

The command with "-c" option only clears the retain data on the SRAM and does not save the retain data.

e.g. C:\temp\NFCP500> FcxSaveRetain -c 192.168.0.1

(4) In the command prompt window, type "FcxRestore <host name or IP address>," and press the [Enter] key.

e.g. C:\temp\NFCP500> FcxRestore 192.168.0.1

(5) After restoring, change to the online mode in the maintenance page.

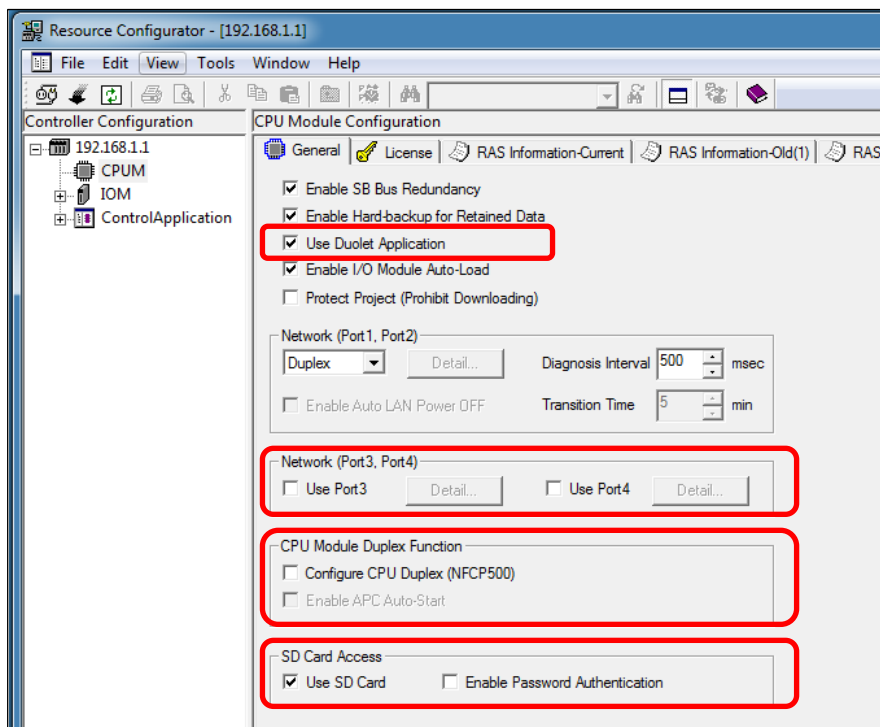
(6) Make sure that it has been started in online mode, and exit the Web browser.

TIP

The IP address of the restored NF501/NF502 is reflected the IP address of NF100. If necessary, change the IP address. If field bus (NFLF111, NFLP121, NFLC121) are used, do the following after Step B7 restore. Step B7-1: Exported by Resource Configurator, Step B7-2: Change IP address, and Step B7-3: Imported by resource configurator. License information can't be migrated to the FCN-500. Please use the CPU module to the required licenses are bundled.

● **Step B8: Setting each function for the NF500**

- (1) Set some settings for new function or additional configuration by the resource configurator, and download it.
 - Duolet function (If necessary)
 - CPU duplex configuration (If necessary)
 - Ethernet port No.3 and No.4 for NF502 (If necessary)
 - SD card (If necessary)
 - I/O definition (migrating from NFJT100 only)



- (2) Set some settings for new function or additional configuration by the resource configurator,.
 - SNTP server (If necessary)

SEE ALSO

For setting of the SNTP server, refer to the "2.2.6 Time Synchronization" TI "STARDOM Engineering Guide (FCN-500/FCN-RTU)".

- **Step B9: Downloading the control application to the NFCP500**

(1) If you have the user library project, copy the user library (mwt file) and the folder named the same name as the library project into the library folder.

E.g.: Copy Userlib.mwt and Userlib folder into
 "C:\YOKOGAWA\FCN-FCJ\LogicDesigner\Libraries"

If the user library is compressed in this project, it is also copied user library when it is decompressed. If an existing project is present, it compares the version information before overwriting, and select to overwrite or Save As. Compile the project of the user library in the logic designer of R4 after thawing.

TIP

The user library is a project to which the user is to create your own reference. Library of APPF is not included.

If you are not using the user library, this step is not necessary.

(2) Open the project (R1/R2/R3/R4) by the Logic Designer R4.

The projects in the format of R3 or earlier are converted automatically to R4 format.

TIP

The project of R4 format can't be opened in the R1/R2/R3 Logic Designer.

(3) If the PLC type is defined in IPC_32 / IPC_33, re-create the resource (PLC type: IPC_40). When you re-create the resource, copy and set the definition following information on the logic designer.

- Copy of the task definition
- Copy of the Program POU instance definition
- Copy of the global variable definition
- Setting of target setting dialog
- Copy of the device label variable definition
- Copy of the software wiring definition
- Change of resource names

SEE ALSO

Detailed procedure of re-creating resources, refer to online help "Control Application Programming Guide" - "Control application creating" - "Considerations in the control application programming" - "Project data management."

TIP

If the retain data area to extend, re-create the resource (PLC type: IPC_40, Processor type: FCX_B /FCX_C).

If the retain data area to extend, the data saved is not available in NFCP500.

If changing the processor type of existing resources, the retain data area will not be extended.

(4) Make the project by the Logic Designer R4.

(5) Perform offline download the control application to the NF501/NF502.
Also download the boot project and the source files as needed.

- **Step B10: Checking the operation of NF500**

- Hardware operation (communication function, CPU duplex configuration)
- The operation of the control application

TIP

If the in-house facilities site CPU type and the I/O module configuration is different, here the backup of the data is not available in the work in the field..

■ Procedure (Work of target equipment)

● Step B11: Exchanging the CPU module

- (1) Remove the NFCP100 from the base module.
In the case of CPU duplex configuration, remove also the two.
- (2) Transfer the Ethernet cable and the RS-233-C cable from NFCP100 to NFCP501/NFCP502.
Attach the Ethernet cables to the same Ethernet port 1 or 2 before the exchange.
- (3) In the case of new goods NFCP501/NFCP502, start the resources configurator to set the IP address.
- (4) Insert the NFCP501/NFCP502 to the base module.
In the case of CPU duplex configuration, insert only the control side CPU module in this step.
- (5) In the case of new goods NFCP501/NFCP502, so the start-up in the IP address setting mode, and set the IP address in the resource configurator.
After setting, you can exit the resources configurator.

● Step B12: Switching to maintenance mode on the NFCP500

- (1) Run the Web browser and open the "STARDOM Maintenance Page" on the NFCP501/NFCP502.
- (2) Select "Maintenance Menu."
The FCX Maintenance Menu is displayed.
- (3) Select "Reboot."
The Reboot Menu is displayed.
- (4) Select "Reboot (Maintenance Mode)" and click the [OK] button.
The NFCP501/NFCP502 boots up in maintenance mode.
- (5) Make sure that it has been started in a maintenance mode, and exit the Web browser.

● Step B13: Restoring to the NFCP500

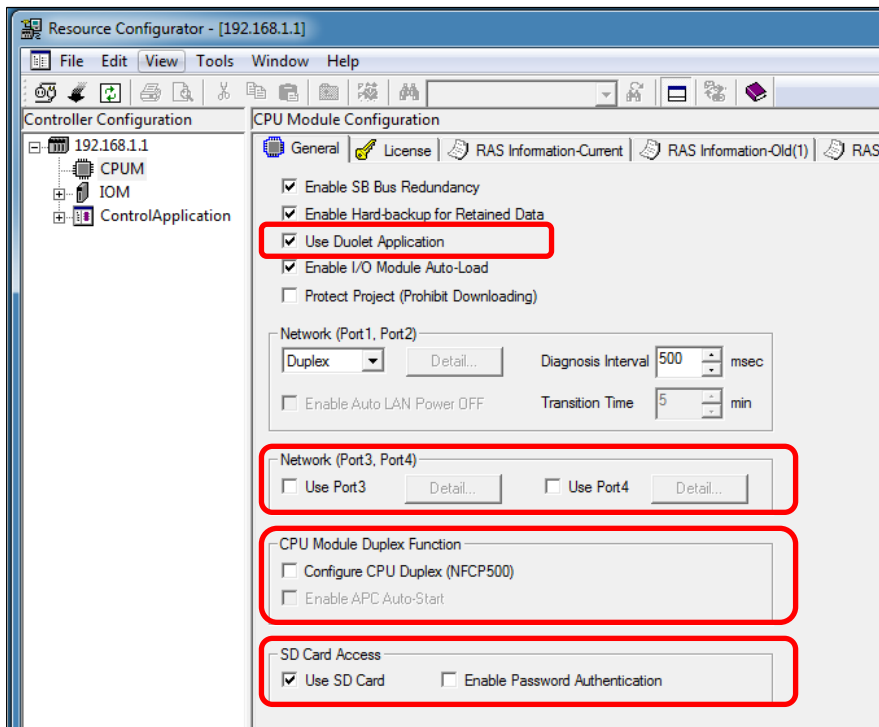
- (1) Rename "BACKUP" folder in Step B3 to another name.
- (2) Rename the destination folder in Step B4 to "BACKUP".
- (3) In the command prompt window, type "FcxSaveRetain -c <host name or IP address>," and press the [Enter] key.
The command with "-c" option only clears the retain data on the SRAM and does not save the retain data.
e.g. `C:\temp\NFCP500> FcxSaveRetain -c 192.168.0.1`
- (4) In the command prompt window, move to the unzipped folder in step B1.
- (5) In the command prompt window, type "FcxRestore <host name or IP address>," and press the [Enter] key.
e.g. `C:\temp\NFCP500> FcxRestore 192.168.0.1`

TIP

The IP address of the restored NF501/NF502 is reflected the IP address of NF100. If necessary, change the IP address. If field bus (NFLF111, NFLP121, NFLC121) are used, do the following after Step B7 restore. Step B13-1: Exported by Resource Configurator, Step B13-2: Change IP address, and Step B13-3: Imported by resource configurator. License information can't be migrated to the FCN-500. Please use the CPU module to the required licenses are bundled.

● **Step B14: Setting each function for the NF500**

- (1) Set some settings for new function or additional configuration by the resource configurator, and download it.
 - Duolet function (If necessary)
 - CPU duplex configuration (If necessary)
 - Ethernet port No.3 and No.4 for NF502 (If necessary)
 - SD card (If necessary)
 - I/O definition (migrating from NFJT100 only)



- (2) Set some settings for new function or additional configuration by the resource configurator,.
 - SNTP server (If necessary)

SEE ALSO

For setting of the SNTP server, refer to the "2.2.6 Time Synchronization" TI "STARDOM Engineering Guide (FCN-500/FCN-RTU)".

- **Step B15: Downloading the control application to the NFCP500**

- (1) Open the project in step B9 by the Logic Designer R4.
- (2) Perform offline download the control application to the NFCP501/NFCP502.
Also download the boot project and the source files as needed.

IMPORTANT

The retain data that changed or added to in-house equipment, re-set it in the field.

- **Step B16: Executing APC (Duplex CPU only)**

- (1) After confirming the connection of Ethernet cable and the RS-233-C cable, insert the other one CPU module for stand-by side.
- (2) Run the APC. If APC automatic startup is disabled, run the APC from the resource configurator.

TIP

In the control side and standby side CPU module, use the same model and same revision of basic software.

■ Procedure (Work of in-house equipment)

● Step C11: Saving the retain data on the NF500

- (1) Run the Web browser and open the “STARDOM Maintenance Page” on the NF500/NF502.
- (2) Click “Maintenance Menu.”
The FCX Maintenance Menu is displayed.
- (3) Click “Save Retain Data.”
The last time and data when the retain data was saved is displayed.
- (4) Click the [SAVE] button.
The retain data is saved.

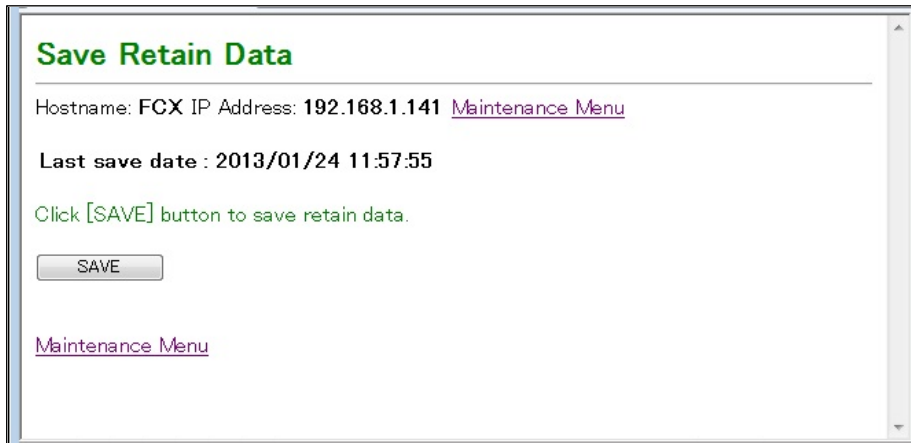


Figure Saving the retain data

TIP

The [SAVE] button is not displayed in the maintenance mode.

● Step C12: Backing up the NF500

- (1) In the command prompt window, change the current directory to the folder containing the extracted conversion tools in Step B1.
Supposing that the conversion tools has been extracted to the folder C:\temp, type “cd C:\temp\NF500” and press the [Enter] key.
- (2) In the command prompt window, type “FcxBackup -all -u <user name> -p <password> <host name or IP address>,” and press the [Enter] key.
"BACKUP" folder will be created in the current directory.
e.g. C:\temp\NF500> FcxBackup -all -u user01 -p abc123
 192.168.0.1

TIP

This backup is the storage of the contents of the in-house work. You do not need to restore the content in the field.

■ Procedure (Work of target equipment)

- **Step C13: Exchanging the CPU module**

- (1) Remove the NFCP100 from the base module.
In the case of CPU duplex configuration, remove also the two.
- (2) Transfer the Ethernet cable and the RS-233-C cable from NFCP100 to NFCP501/NFCP502.
Attach the Ethernet cables to the same Ethernet port 1 or 2 before the exchange.
- (3) Insert the NFCP501/NFCP502 using in-house equipment to the base module.
In the case of CPU duplex configuration, insert only the control side CPU module in this step.

- **Step C14: Executing APC (Duplex CPU only)**

- (1) After confirming the connection of Ethernet cable and the RS-233-C cable, insert the other one CPU module for stand-by side.
- (2) Run the APC. If APC automatic startup is disabled, run the APC from the resource configurator.

TIP

In the control side and standby side CPU module, use the same model and same revision of basic software.

Appendix 1 FCN/FCJ and development tools

This appendix describes combination of the FCN/FCJ and the development tools.

- **Combination of the FCN/FCJ and the development tools**

Logic designer R4 and Resource Configurator R4 can develop FCN/FCJ autonomous controller with basic software R3 and R4.

FCN/FCJ Autonomous controller		R4 Logic Designer R4 Resource Configurator
FCN/FCJ Basic software	R1	-
	R2	-
	R3	X
	R4	X

- When opened in logic designer R4, a project that was created in a previous edition Logic Designer (R1/R2/R3), are automatically converted to R4 format.
- A project that was saved in the Logic Designer R4, can't be opened in previous edition Logic Designer.
- Match the release and the revision of Logic Designer, Resource Configurator and FCN/FCJ basic software.

Appendix 2 Sample Libraries

This appendix describes procedure that uses a POU of the following application portfolio on autonomous controller FCN-500.

FCN-500 is not bundled with License of these APPF. To use these, you must replace the APPF library to the sample library. There is no need to replace the POU.

- SAMA PF
- General PF
- Power Monitor Communication PF
- Temperature Controller
- Communication PF
- Boiler Control PF
- Boiler Auxiliary Control PF

● Step 1: Obtaining Sample Libraries

Download the sample libraries from the Web site to the library folder.

URL: <https://partner.yokogawa.com/global/member/rtu/engsample/index.htm>

E.g.(library folder): "C:\YOKOGAWA\FCN-FCJ\LogicDesigner\Libraries"

● Step 2: Adding Sample Libraries

(1) Open the library compressed project file in the Logic Designer and compile it.

(2) Register the sample libraries to library of product tree in the Logic designer.

If the above application portfolio library is registered, please remove it.

Application PF	Application PF Library name	Sample Library Name
SAMA PF	SD_SAMA_PF	SA_SAMA_PF
General PF	SD_GENERAL_PF	SA_GENERAL_PF
Power Monitor Communication PF	SD_CPMPOU_PF	SA_CPMPOU_PF
Temperature Controller Communication PF	SD_DICPOM_PF	SA_DICPOM_PF
Boiler Control PF	SD_ABOILER_PF	SA_ABOILER_PF
Boiler Auxiliary Control PF	SD_ABOILERU_PF	SA_ABOILERU_PF

● Step 3: Compiling and Downloading

(1) Re-compile the project in the Logic designer.

(2) Perform offline download the control application.

Appendix 3 Field bus Definition

This chapter describes the work in the case of an autonomous controller NFCP100 were using the field bus (NFLF111, NFLP121, NFLC121 communication module).

The field bus definition information must be transferred from the engineering PC for NFCP100 to the engineering PC for NFCP500.

TIP

If you have used the R2.20 previous FF engineering tool, conversion is required from the FF engine tool to FF configurator. It offers a tool to support this conversion. After the conversion, you must check the operation of the field bus.

For details, refer to "STARDOM FOUNDATION fieldbus System Migration Guide", TI 34P02Q55-01E.

The field bus definition information CF/DD files for FOUNDATION fieldbus, GSD files for PROFIBUS or EDS files for CANopen, must be copied and imported from the engineering PC for NFCP100 to the engineering PC for NFCP500.

SEE ALSO

- For how to copy CF/DD files for FOUNDATION fieldbus, refer to "5.8 Copying Fieldbus Associated Files", IM 34P02Q51-02E.
For CF/DD files, refer to "Items obtained from the device vendor" of "B1.2 Preparation for Engineering", TI 34P02Q51-02E.
- For how to register GSD files for PROFIBUS, refer to "3.3.3 Registering GSD Files", IM 34P02Q57-01E.
- For how to register EDS files for CANopen, refer to "3.3.1 Registering Slave Devices", IM 34P02Q58-01E.

If you want to engineering in a new PC for the NFCP500, export the definition information by resources configurator on the original PC, and then import this definition information by resources configurator on the new PC.

If you upgrade the PC for NFCP100 to for NFCP500, export and import it does not need, because the definition information of the field bus is in the PC.

● Step 1: Export of definition information

Originally a PC that had done the engineering of NFCP100, and export the resource configurator connected to the NFCP100.

● Step 2: Import of definition information

In a new PC to perform the engineering of NFCP500, connect the resource configurator to the NFCP100, and import the file of Step1.

● Step 3: Download of definition information

In a new PC to perform the engineering of NFCP500, connect the resource configurator connected to the NFCP100, and download the file of Step1.

Appendix 4 Duolet Application

This chapter describes the procedure for migrating the Java application of the autonomous controller FCN-100/FCJ to the Duolet application of FCN-500.

■ Edit system configuration file DUONUS.PRP

After converting by FcxConvert, # is added before JavaStart and AdditionalClassPath in the system setting file DUONUS.PRP. After restoring to NF501/NF502, remove the # before the JavaStart and AdditionalClassPath in the system configuration file DUONUS.PRP so that the application to be used is activated.

For details on editing the system configuration file, refer to "B 2.4.2 Editing System Setting Files " in FCN/FCJ Guide, IM 34P02Q01-01E.

■ Migration of Duolet (Java) Application Project

To use the project created before R4.02 with FCN-500, project migration work is required. Migrate the project according to the following procedure.

- (1) Change the CallJavac.bat file in the project folder of the Duolet application to a different name such as CallJavac.bat.old.
- (2) Change the Ftp2Fcx.bat file in the project folder of the Duolet application to a different name such as Ftp2Fcx.bat.old.
- (3) Copy CallJavac.bat, CallJavac_Fcn500.bat, Ftp2Fcx.bat from the "Project\Template" folder under the installation folder to the project folder of the Duolet application.
- (4) Set the controller's IP address, the package to be included in the JAR, and the JAR file name in Ftp 2 Fcx.bat.
- (5) Execute CallJavac.bat or CallJavac_Fcn500.bat and confirm that the Duolet application is created.

SEE ALSO

-
- Deprecated methods of IEC control data access class can not be used with FCN - 500. For details, refer to the online help of FCN/FCJ Duolet application development kit.
 - For transfer of Duolet application, refer to the online help of FCN/FCJ Duolet application development kit.
-

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- Addition of FcxBackup command arguments.

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- Added FcXBackup obtaining method.
- Added migration of Duolet Application.

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Revised

- Added processor type FCX_C.
- Changed obtain procedure of tool.

*: Denotes the release version of the software corresponding to the contents of the technical information in question. The revised contents are valid until the next edition is issued.

■ For Questions and More Information

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