OMRON

NX-Server
for DeviceNet™

OPERATION MANUAL

DDE Edition

Notice:

OMRON products are manufactured for use according to proper procedures by a qualified operator and only for the purposes described in this manual.

The following conventions are used to indicate and classify precautions in this manual. Always heed the information provided with them. Failure to heed precautions can result in injury to people or damage to the product.

⚠	**DANGER**	Indicate information that, if not heeded, is likely to result in loss of life or serious injury.
⚠	**WARNING**	Indicates information that, if not heeded, could possibly result in loss of life or serious injury.
⚠	**Caution**	Indicates information that, if not heeded, could result in relatively serious or minor injury, damage to the product, or faulty operation.

Trademarks and Copyrights

DeviceNet is a registered trademark of the Open DeviceNet Vendor Association, Inc.

Windows, Windows 95, Windows 98, and Windows NT are registered trademarks of the Microsoft Corporation.

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About this Manual:

This manual describes the installation of the NX-Server for DeviceNet and includes the sections described below.

Please read this manual carefully and sure you understand the information provided before attempting to install the NX-Server for DeviceNet. **Be sure to read the precautions provided in the following section.**

Section 1 describes the features and capabilities of the NX-Server for DeviceNet.

Section 2 explains how to make the necessary settings with the NX-Server for DeviceNet to DeviceNet I/O monitor.

The Appendices provide a list of error messages.

⚠	**WARNING**	Failure to read and understand the information provided in this manual may result in personal injury or death, damage to the product, or product failure. Please read each section in its entirety and be sure you understand the information provided in the section and related sections before attempting any of the procedures or operation gives.

PRECAUTIONS

This section provides general precautions for using the NX-Server for DeviceNet and related devices.

The information contained in this section is important for the safe and reliable application of the NX-Server for DeviceNet and personal computer. You must read this section and understand the information contained before attempting to set up a NX-Server for DeviceNet and personal computer.

1   Intended Audience

This manual is intended for the following personnel, who must also have knowledge of electrical systems (an electrical engineer or the equivalent).
• Personnel in charge of installing FA systems.
• Personnel in charge of designing FA systems.
• Personnel in charge of managing FA systems and facilities.

2   General Precautions

The user must operate the product according to the performance specifications described in the operation manuals.

Before using the product under conditions which are not described in the manual or applying the product to nuclear control systems, railroad systems, aviation systems, vehicles, combustion systems, medical equipment, amusement machines, safety equipment, and other systems, machines, and equipment that may have a serious influence on lives and property if used improperly, consult your OMRON representative.

Make sure that the ratings and performance characteristics of the product are sufficient for the systems, machines, and equipment, and be sure to provide the systems, machines, and equipment with double safety mechanisms.

This manual provides information for installing OMRON NX-Server for DeviceNet. Be sure to read this manual before operation and keep this manual close at hand for reference during operation.

⚠ **WARNING** It is extremely important that a PLC and all PLC Unit be used for the specified purpose and under the specified conditions, especially in applications that can directly or indirectly affect human life. You must consult with your OMRON representative before applying a PLC System to the abovementioned applications.

3   Safety Precautions

⚠ **WARNING** Never attempt to disassemble the Board or touch the inside while power is being supplied. Doing so may result in serious electrical shock or electrocution.

4 Operating Environment Precautions

Do not install the Unit in any following locations.

- Locations subject to direct sunlight.
- Locations subject to temperatures or humidities outside the range specified in the specifications.
- Locations subject to condensation as the result of severe changes in temperature.
- Locations subject to corrosive or flammable gases.
- Locations subject to dust (especially iron dust) or salt.
- Locations subject to exposure to water, oil, or chemicals.
- Locations subject to shock or vibration.

⚠ **Caution** The operating environment of the PLC System can have a large effect on the longevity and reliability of the system. Improper operating environments can lead to malfunction, failure, and other unforeseeable problems with the PLC System. Be sure that the operating environment is within the specified conditions at installation and remains within the specified conditions during the life of the system.

5 Application Precautions

Observe the following precautions when using the NX-Server for DeviceNet.

⚠ **WARNING** Failure to abide by the following precautions could lead to serious or possibly fatal injury. Always heed these precautions.

- Always connect to a class-3 ground (100 ohm or less) when installing the Units.
- Always turn off the power supply to the personal computer before attempting any of the following.
  - Assembling the Units.
  - Setting DIP switches or rotary switches.
  - Connecting or wiring the cables.

⚠ **Caution** Failure to abide by the following precautions could lead to faulty operation or the PLC or the system or could damage the PLC or PLC Units. Always heed these precautions.

- Fail-safe measures must be taken by the customer to ensure safety in the event of incorrect, missing, or abnormal signals caused by broken signal lines, momentary power interruptions, or other causes.
- Interlock circuits, limit circuits, and similar safety measures must be provided by the customer as external circuits, i.e., not in the Programmable Controller.
- Always use the power supply voltage specified in this manual.
- Take appropriate measures to ensure that the specified power with the rated voltage and frequency is supplied. Be particularly careful in places where the power supply is unstable.
- Install external breakers and take other safety measures against short-circuiting in external wiring.
- Do not attempt to disassemble, repair, or modify any Units.
- Be sure that all cable connector screws are tightened to the torque specified in this manual.
- Use crimp terminals for wiring. Do not connect bare Stranded wires directly to terminals.

- Double-check all the wiring before turning on the power supply.
- Wire correctly.
- Be sure that the communications cables and other items with locking devices are properly locked into place.
- Check the user program for proper execution before actually running it in the Unit.
- Observe the following precautions when wiring the communications cable.
    - Separate the communications cables from the power lines or high-tension lines.
    - Do not bend the communications cables.
    - Do not pull on the communication cables.
    - Do not place heavy objects on top of the communications cables.
    - Be sure to wire communications cable inside ducts.
    - Use appropriate communications cables.
    - Do not use inappropriate cables or crimp terminals.
- Provide proper shielding when installing in the following locations:
    - Locations subject to static electricity or other sources of noise.
    - Locations subject to strong electromagnetic fields.
    - Locations subject to possible exposure to radiation.
    - Locations near to power supply lines.

Section1 Overview

In this section, features and the functions of the NX-Server are described.

1.1   What is NX-Server?

NX-Server will collect IO information conversed between the master and slaves devices on the same network. NX-Server only drinks DeviceNet frames from the network so, it never increases the traffic on the network.

NX-Server also has DDE (Dynamic Data Exchange) interface to other DDE client application to give the IO data, which NX-Server collected from the network.

By using DDE client application such as, Microsoft Excel, you can monitor IO data running on the network.

The NX-Server can be used with either of the following DeviceNet board.

DeviceNet board from Omron Co. (Product #3G8F5-DRM21, #3G8E2-DRM21) bundled with Configurator software product.

DeviceNet board from National Instruments.

Functions of the NX-Server

NX-Server has following functions.

DDE Server   :   IO data collected from DeviceNet network can be exchanged with other application via DDE communication.

IO data logging   :   Create log file in CSV format, containing IO data collected from DeviceNet networks

Functions in shadowed box only be able be used when DDE server function is not working.
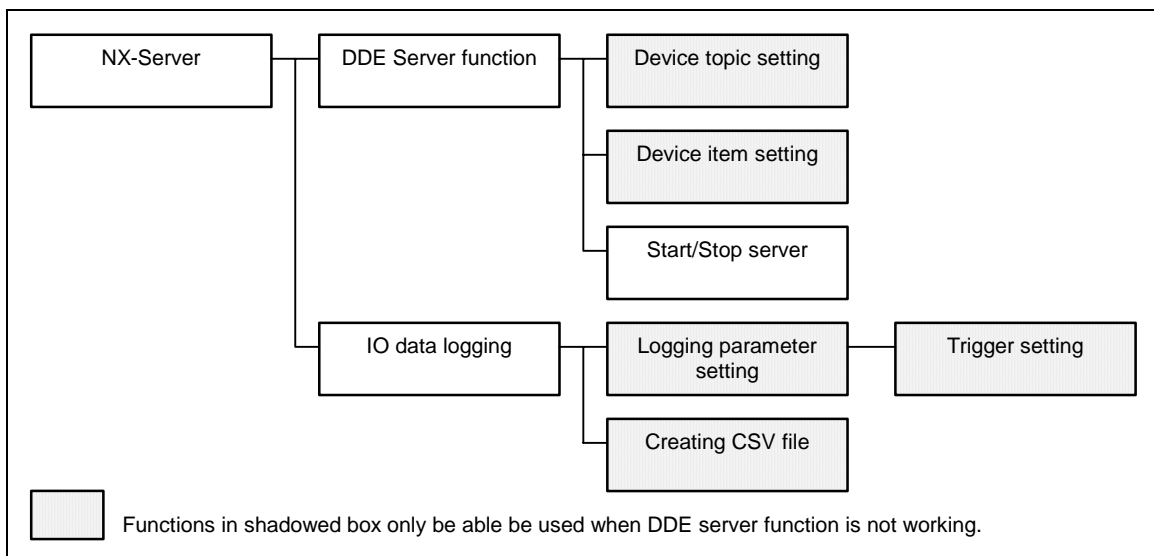
DDE Server function

Device topic setting

Set device topic name used in DDE communication on each DeviceNet devices on the network. IO size and connection type can also be set.

Device item setting

Set device topic name used in DDE communication on each DeviceNet devices on the network. IO size and connection type can also be set.

DDE server start/stop

Start and stop the DDE server and logging function.

IO data logging

Logging parameter setting

Set logging parameters including logging buffer size and logging trigger.

Trigger conditions

Set logging trigger conditions. You can set two triggers to be used in combinations.

Creating CSV log file

Exporting logging data into CSV format file.

Features on the NX-Server

DeviceNet protocol engine

NX-Server has specialized DeviceNet protocol engine, which derives IO data from captured CAN frame. NX-Server only drinks CAN frame and never sends any frame to the network. As a benefit of this mechanism, it need not be assigned MAC ID, which is limited resource in the network. Thus, you can add NX-Server to the existing DeviceNet network without caring about these resource conflict problems. Since NX-Server never increases the network traffic, you do not have to worry about changing the network performance.

Data logging function

You can log the IO data from the slave devices you specify. You are also be able to set the logging trigger, when to start and stop the log.

Note: Depending on the network system and/or the power of the PC you use, it may happen that all the data cannot be logged.

Flexible setting with device item

You can set device item to each device IO data with much flexibility, most suitable to the purpose of each data. You are also be able to set more than one item on same IO data.

DDE communication

You can exchange IO data with other application via DDE communication path. Any DDE client capable application, you can exchange IO data with ease.

1.2   Hardware/software requirements

NX-Server can be used under following hardware/software environment.

Hardware	DeviceNet Board from Omron Co. 3G8F5-DRM21 3G8E2-DRM21 DeviceNet Board from National Instruments. NI-DNET software must be able to run.
PC Architecture	IBM PC/AT Compatible
OS	Windows95/98, Windows NT4.0 Workstation
CPU	Pentium 166MHz or higher
Hard disk	5M or more Byte space left.
Memory	32M Byte or more.
Floppy Disk	Must be able to read/write 1.44M Byte 3.5 Inch 2HD Floppy Disk.
Display	VGA or higher resolution

1.3   NX-Server Menu

NX-Server has the following menu trees.
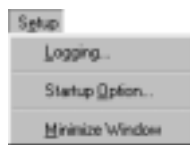
Section2 Operation

After reading this section, you will know how to do setting on the NX-Server and how to use DDE server functions and IO data logging.

2.1   Flow of the setting

Following is the flow of setting the NX-Server.

```
                         ┌─────────────────────┐
                         │  Execute NX-Server  │
                         └─────────────────────┘
   Create new Server setting    │    Edit existing server setting
        ┌───────────────────────┴───────────────────────┐
        ▼                                                ▼
┌─────────────────┐                          ┌─────────────────────┐
│ Set device topic│                          │ Open the setting file│
└─────────────────┘                          │ ("file"-"Open")     │
        │                                     └─────────────────────┘
        ▼                                                ▼
┌─────────────────┐                          ┌─────────────────────┐
│  Set device item│                          │ Edit device topic,  │
└─────────────────┘                          │ device item.        │
  (If necessary)  │                          │ (If necessary)      │
        ▼                                     └─────────────────────┘
┌─────────────────┐                                     ▼
│ Set logging     │                          ┌─────────────────────┐
│ parameter       │                          │ Set logging parameter│
└─────────────────┘                          │ and trigger conditions.│
 (If use trigger to control) │               │ (If necessary)      │
        ▼                                     └─────────────────────┘
┌─────────────────┐                                     │
│ Set trigger     │                                     │
│ conditions      │                                     │
└─────────────────┘                                     │
        └───────────────────────┬───────────────────────┘
                                 ▼
                      ┌─────────────────────┐
                      │ Save server setting │
                      │ as file             │
                      └─────────────────────┘
                                 ▼
                      ┌─────────────────────┐
                      │   Start DDE server  │
                      └─────────────────────┘
                                 ▼
                      ┌─────────────────────┐
                      │   Stop DDE server   │
                      └─────────────────────┘
       If logging data exists   ▼
                      ┌─────────────────────┐
                      │ Save logging data in│
                      │ CSV format file.    │
                      └─────────────────────┘
```
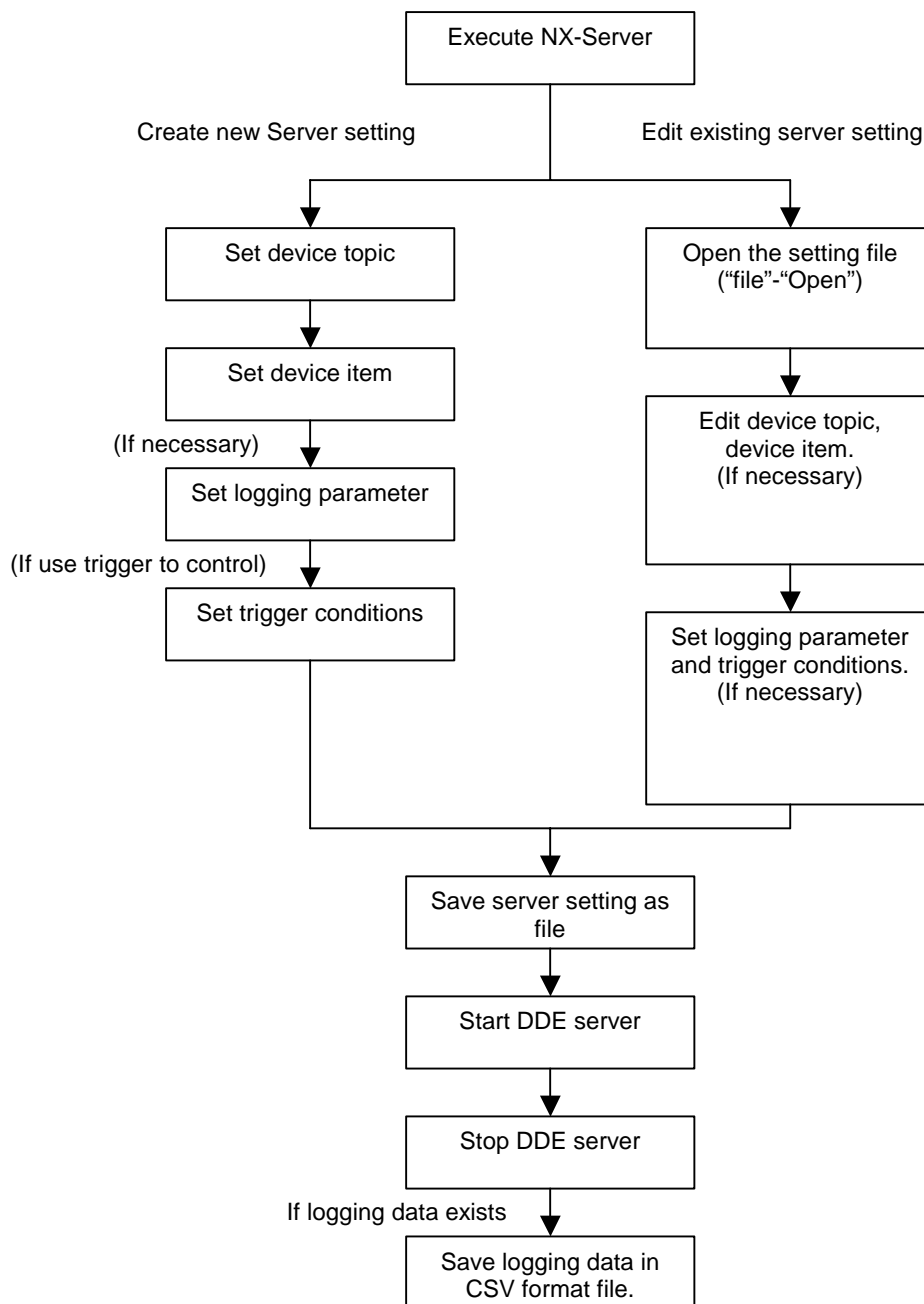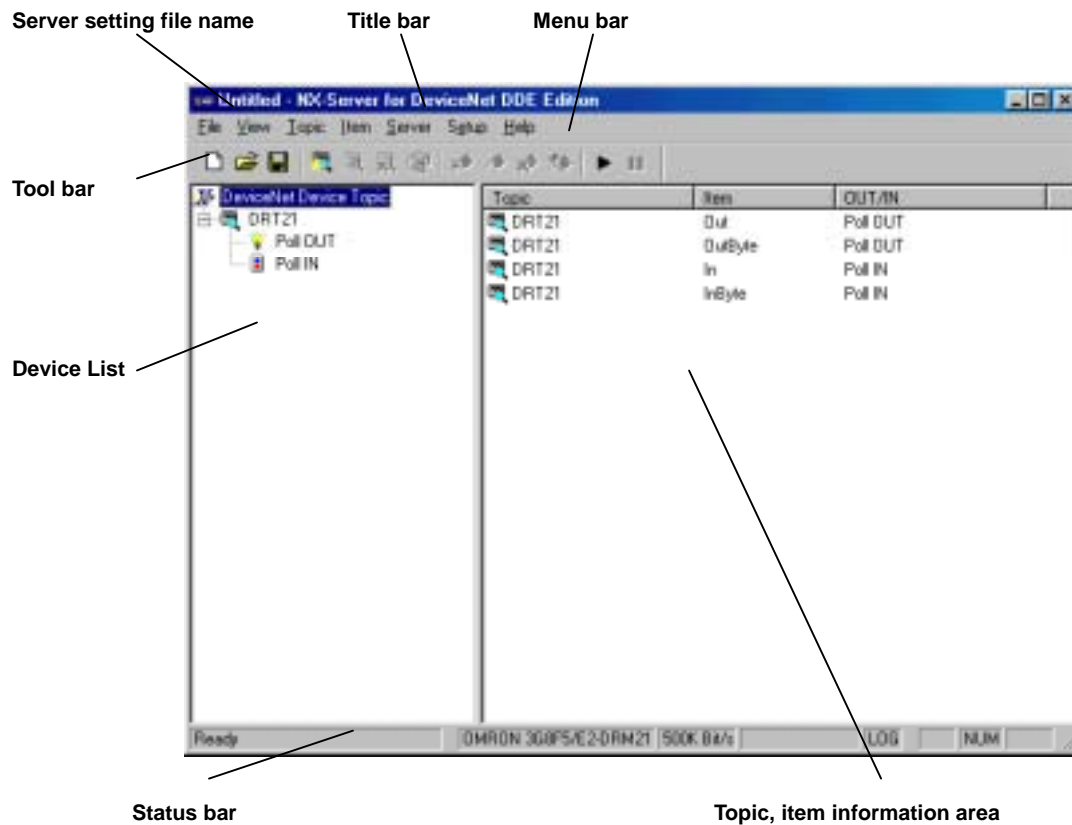
2.2　Main windows

Main windows on NX-Server will be described here.

Server setting file name　　　　**Title bar**　　　　**Menu bar**

Tool bar

Device List

Status bar　　　　　　　　　　　　　**Topic, item information area**

[Title bar]

Name of the NX-Server plus name of the server setting file are shown. If the file is not yet named, shows "Untitled".
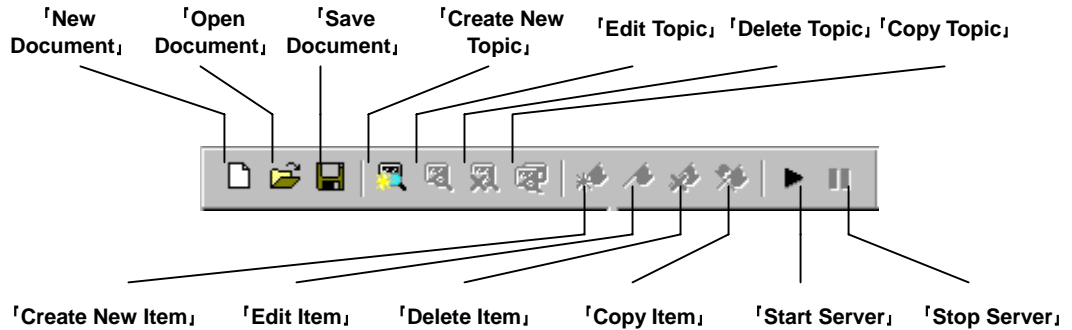
[Menu bar]

The operation on the NX-Server can be done from menu bar.

[Tool bar]

Functions often used can be selected from tool bar.

Each button on the tool bar relates to the following menu command.

New Document   Open Document   Save Document   Create New Topic   Edit Topic   Delete Topic   Copy Topic

Create New Item   Edit Item   Delete Item   Copy Item   Start Server   Stop Server

[Device list]

The devices specified to collect IO data are show. The connection types are also shown.

[Topic, item information area]

Topic and items information are shown.

The information shown here differs depending on the selection of the device list.

You are selecting following item in the list.	What is show?
DeviceNet Device Topic	Topic and item list use as DDE server.
Device Topic	Connection type information set on each device. Also, the number of items set on each connection type.
Connection Type	Item information set on each connection type.

[Status bar]

Following information are shown.

Interface name   Baudrate   Logging status

OMRON 3G8F5/E2-DRM21 500K Bit/s LOG CAP NUM SCRL

Server running indicator   Caps Lock status   Num Lock status   Scroll Lock status
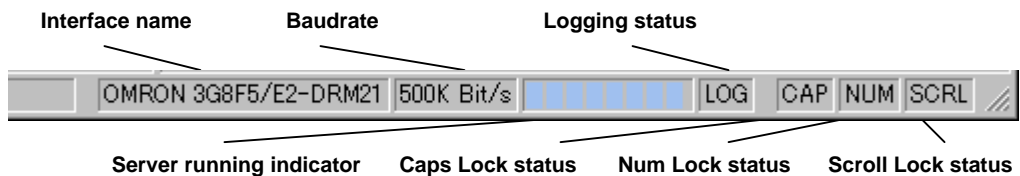
Operation on Device list window

You can do following operation on device list window

[Menu by right button click]

By clicking right button on each window, you can see the menu list, which shows the functions you, can execute from that windows.

Operation of topic, item information windows

You can execute following operations from topic, item information window.

[Open "Item edit" window]

By double clicking when item information is displayed, the windows where you can edit the item will open.

[Menu list by right button click]

By clicking right button on the selected window, you can see menu list which shows the functions you can choose from.

2.3　Editing the device topic

Define devices with which you want to collect IO data and create device topic used on DDE server communication.

This operation cannot be done while server is functioning.

Create new device topic

Create new device topic.

Select "Topic" from menu bar.

Select "New".
You will see the following window.

MAC ID	:	Select MAC ID of the device of which you like to collect IO data.
Topic name	:	Set topic name which can be used on DDE communication to specify each device.
Data logging	:	Check if you want to log IO data of specified device.
		Note: Depending on the network system and/or the power of the PC you use, it may happen that all the data cannot be logged.
Use Poll connection	:	Check if specified device (slave) used poll IO connection with the Master device and set input and output data size.
Use Bit-Strobe connection	:	Check if specified device (slave) used bit-strobe IO connection with the Master device and set input data size.

Use COS/Cyclic connection   :   Check if specified device (slave) used COS/Cyclic IO connection with the Master device and set input data size.

Click "OK"

New device topic will be added to the device list.

If the master device is the product from Omron Co.

If the master device is the product from Omron Co, the connection type you should select is as followings.

IO Type	Connection Type
OUT only	Poll Connection
IN only	Under 8 bytes:Bit-Strobe Connection
	Above 9 bytes:Poll Connection
OUT and IN	Poll Connection

Edit device topic

If you like to edit existing device topic, here is what you do.

Select device topic on which you like to edit from device list.

Select "Topic" from menu bar.

Select "Edit".

Device topic edit window will open. Edit the topic.

Click "OK".

Important   **If you set IO size smaller the existing size, the item in the specified connection type will be automatically deleted.**

Delete device topic

If you like to delete existing device topic, here is what you do.

Select device topic, which you want to delete from the device list.

Select "Topic" from menu bar.

Select "Delete"
You will be prompted to confirm before deleting the topic.

If you really want to delete, click "Yes".
The specified device topic and the items in that topic will be deleted from the device list.

Copy device topic

If you want to copy the existing device topic, here is what you do.

Select device topic which you want to copy from the device list.

Select "Topic" from menu bar.

Select "Copy".
You will see following window.

MAC ID	:	Specify MAC ID for which you like to copy the device topic.
Device Topic Name	:	Specify device topic for which you like to copy the device topic.

Click "OK".
Device topic will be added to the device list.

2.4　　Edit device item

Edit device item used in DDE communication on the device topic already created.

This operation cannot be done while server is functioning.

Create new device item

Create new device item.

Select connection type for which you like to create device item from the device list.

Select "Item" from menu bar.

Select "New".
You will see the following window.

Item Name	:	Specify item name on IO data, which can be used in DDE communication.
Offset	:	Specify offset in IO data, which you like to access by item name. The range can be between 0 to the maximum size of the IO data.
Bit offset	:	Specify bit offset in the data. This can be set only when you choose BIT for access type. The range can be between 0 to 7.

Access Type	:	Select access type for IO data, which you like to access by item name.
		You can set either of the following access type.

BIT	Access as 1 bit data.
BYTE	Access as 1 byte data.
WORD	Access as 2 byte data.
DWORD	Access as 4 byte data.
BYTE	Access as array of 1 byte data.
WORD	Access as array of 2 byte data.
DWORD	Access as array of 4 byte data.

Number of the array	:	Number of the array.
Format	:	Data format of the data transmitted over DDE communication.

DEC	Decimal format for IO data.
HEX	Hex format for IO data.

Click "OK"

New device item will be added to the item list.

Example of IO data

IO data size: 8Byte, Offset: 0, Bit offset: 0, Number of the array: 2

IO data

+0	0x01
+1	0x23
+2	0x45
+3	0x67
+4	0x89
+5	0xAB
+6	0xCD
+7	0xEF

Access Type	IO Data	
	HEX	DEC
BIT	"1"	N/A
BYTE	"01"	"1"
WORD	"2301"	"8961"
DWORD	"67452301	"1732584193"
BYTE	"0123"	N/A
WORD	"23016745"	N/A

DWORD	"67452301EFCDAB89"	N/A

Edit device item

If you like to edit existing device item, here is what you do.

Select connection type, which you like to edit the device item from the device list.

Select device item, which you like to edit from the item list.

Select "Item" from menu bar.

Select "Edit".
Device item edit window will open. Edit the item.

Click "OK".

Delete device item

If you like to delete existing device item, here is what you do.

Select connection type, which you like to delete the device item from the device list.

Select device item, which you like to delete from the item list.

Select "Item" from menu bar.

Select "Delete"
You will be prompted to confirm before deleting the item.

If you really want to delete, click "Yes".
The specified device item will be deleted from the item list.

Copy device item

If you like to copy existing device item, here is what you do.

Select connection type, which you like to copy the device item from the device list.

Select device item, which you like to delete from the item list.

Select "Item" from menu bar.

Select "Copy".
You will see following window.

Item Name   :   Specify device item for which you like to copy the device item.

Click "OK".
Device item will be added to the item list.

2.5 Setting the logging parameters and trigger conditions

You can set the logging parameters for IO data logging which you specify by device topic and item.

By configuring trigger conditions, you can control the timing of logging start and stop.

This operation cannot be done while server is functioning.

Set logging parameters

Select "Setup" from menu bar.

Select "Logging".

You will see following window.

Use logging	:	Check if you want to use logging function.
Buffer Size	:	Specify logging buffer size.

The range can be between 1 to 2048Kbyte.

Note:

If you have 256 bytes of IO data for logging, the maximum number of the record will be 7543.

If you have 2byte of the IO data for logging, the maximum number of the record will be 95325.

Trigger : Specify the type of logging trigger.

You can select one of the followings.

Start The frame, which meets trigger condition, will be the first data in the log.

Middle The frame, which meets trigger condition, will be the middle frame among the log.

Stop The frame, which meets trigger condition will be the last frame in the log.

Log data : Specify the data which you want to log.

All data All the IO data run on the network.

Changed data Only log IO data when it has changed.

If use trigger, set trigger conditions.

For configuration, refer to " Setting trigger conditions See P.26 ".

Click "OK".

Note **Logging parameters are store as a part of server setting file with device topic and item information.**

Important **Depending on the network system and/or the power of the PC you use, it may happen that all the data cannot be logged**.

Setting trigger conditions

By using trigger conditions, you can control the timing to start, stop the logging.

To set trigger, you have to select one of "Start", "Middle", "Stop" for trigger type. You also have to create device item which you want to use in the trigger condition before setting the trigger conditions.

Click "Trigger conditions" from logging parameter window.

You will see following window.
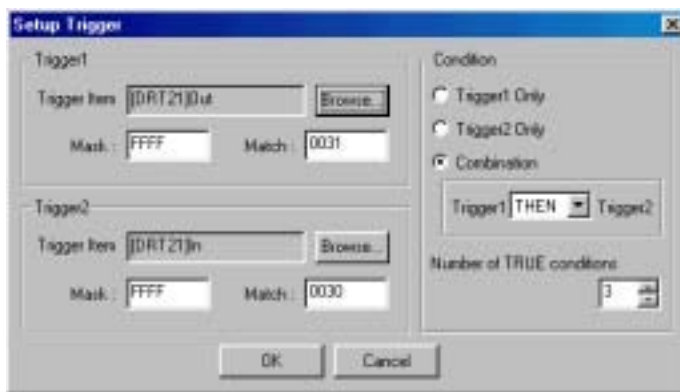
You can use two triggers in combination on NX-Server.

(Trigger 1 and Trigger 2)

Select trigger condition.
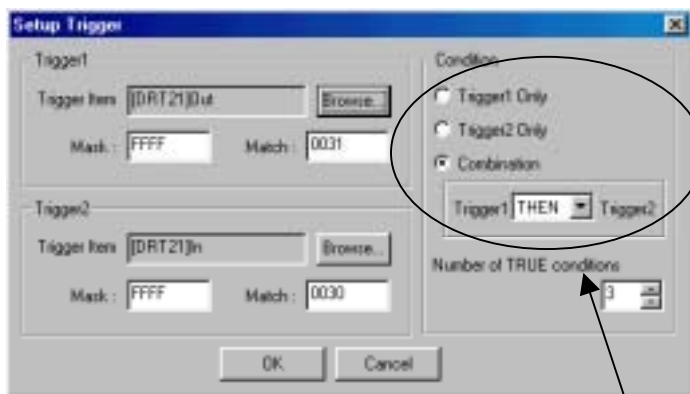
Setting Trigger conditions

You can choose one of the followings.

Trigger 1 only	:	If masked IO data for Trigger 1 is the same value as match data, the trigger becomes TRUE.
Trigger 2 only	:	If masked IO data for Trigger 2 is the same value as match data, the trigger becomes TRUE.
Combination Trigger 1 and 2	:	Both Trigger 1 and 2 are TRUE.
Combination Trigger 1 or 2	:	Either of Trigger 1 and 2 are TRUE.
Combination Trigger 1 then 2	:	If trigger 2 becomes TRUE after 1 becomes TRUE, then the combination of the two triggers becomes TRUE.
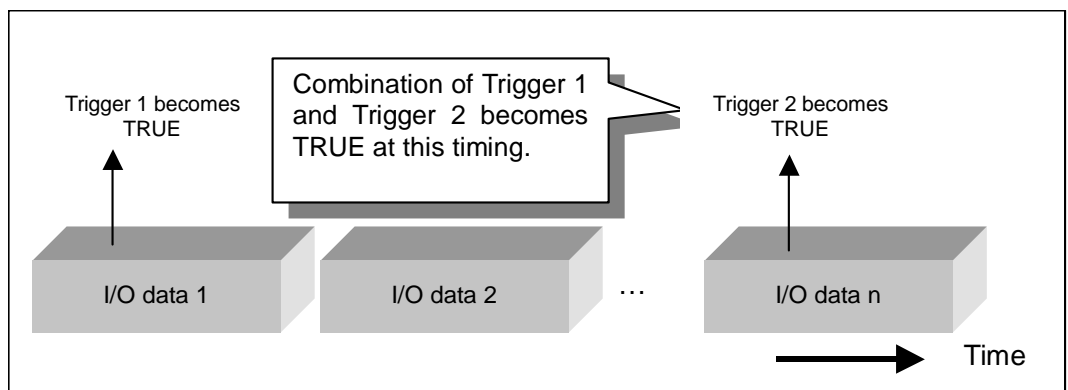
Set "Number of TRUE conditions".

If the Trigger becomes TRUE as many times as specified here, final result becomes TRUE.

Set Trigger 1 and 2.

Set Trigger item and mask/match bit pattern.

Click "Browse" button to select trigger item.

You will see following window.

Trigger item only be able to select from those items which access type are set as "BYTE", "WORD" or "DWORD".

Select trigger item and click "OK".

Selected trigger items will be showed.

Set mask/match bit pattern.

Specify in hex format.

Click "OK".

After starting server function, the logging will be started automatically using trigger conditions.

2.6 Saving and loading the server setting file

You can save and load the device topic/item information and also logging parameters in the server setting file.

The procedure for saving and loading the server setting file will be described in this section.

Saving server setting file

Select "File"- "Save as " from menu list.

Select the directory in which you save the file. The file will have .nxd for its "Extension".

Loading server setting file

You can load the file with ".nxd" "Extension".

Select "File"- "Open " from menu list.

Select directory from where you can load the file. Specify file name and load the file.

Hint!

You can open the server setting file by double clicking the file (*.nxd).

Note: if the NX-Server is already running on the system, you cannot open the setting file by double clicking.

2.7　Start/Stop of the server function

Start the DDE server function. If you have set to use the data logging, the logging will start at the same time. If you stop the server function, then the logging will stop.

When server function is working, you can see the indicator in the status bar.

Start server function

Select "Server" from menu bar.

Select "Start".
You will see following window.

The dialogue will differ depending on which interface you select. Set the baud rate and characteristics specific to each board.

Baud rate	:	Set the same baud rate as used with DeviceNet network. If you set wrong rate, you may encounter network error.
Characteristics specific	:	Interface board specific characteristics. Refer to the manual provided with the board.

Click "OK".
The interface will become online and the server function will start.
If you have set "Minimize window", the window will close and become icon.

Important　**Set the baud rate used on the network. If you set wrong rate, server function will not run.**

Stop server function

Open the window if the program is showing icon.

Select "Server" from menu bar.

Select "Stop".
The server function will stop.

2.8   Exporting logging data to CSV file

The logged IO data can be exported as CSV format file.   You can use CSV file on Excel and some other applications.

The export to CSV file format will be done automatically.

If there are valid logged IO data when you stop the server function, the NX-Server will show the window to prompt the name of the file to which it exports the data.
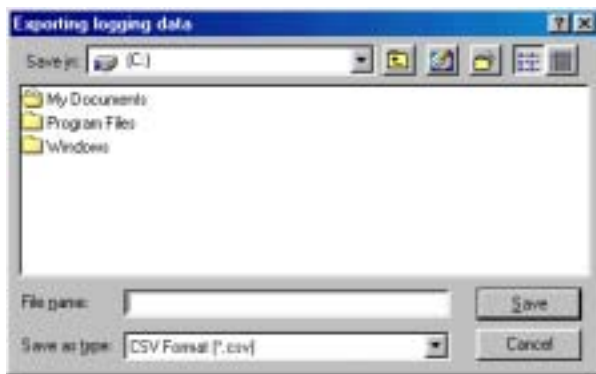
Specify the file name and save it.

CSV file will contain the following information.

Date	Logging date
Time	Logging time
Trigger Frame	If the frame is trigger, it is marked "*".
MAC ID	MAC ID
IO Type	Connection type
IO Size	IO data size
IO Data	IO data

Important   **You can save logging data when the server function is not running.**
Be sure to save the logging data when prompted.

2.9   Startup option

You can assign the server setting file when starting the NX-Server.

Select "Setup"- "Startup option" from menu list.
You will see following window.

Start server function as default   :   When executing the NX-Server, it automatically uses the interface it used at the last time and starts DDE server function.
                                                If you have assigned to load the server-setting file, it automatically read the file and starts the server.

Use specified setting file as default   :   NX-Server loads and uses the specified setting file when it is executed.
                                                If you have opened the setting file by double click, NX-Server only uses the clicked file.

Click "OK".
The setting will be used after you once close the program.

2.10 Monitoring on Microsoft Excel

You can monitor IO data collected by the NX-Server on Microsoft Excel.

In this section, the way to monitor IO data on Excel from the NX-Server will be described.

Specify the data to monitor in the Excel cell, in the following format.

=DDE Server Name **Topic Name** **Item Name**

    NetXDNET   Device   Device
                   Topic   Item

Example)

Device Topic Name: DRT21

Device Item Name: InData

=NetXDNET|DRT21!InData

Appendix

Appendix-1 Error Message

In this section, error message, which may be displayed during the NX-Server operation and also hints to solve the problem, are described.

Error Message	Hints
Wrong trigger item setting	Trigger item is not properly set. Check if the item used for trigger item does exists and retry.
Trigger item not selected	Trigger item is not selected. Select the item and retry.
Data is not set.	Data is not properly set. Set the data properly and retry.
Set in HEX format string.	The data is not proper hex format. Use strings in hex format.
Topic name not specified	Device topic name is not specified.
Cannot make topic with both OUTPUT and INPUT size are 0.	Either of OUTPUT or INPUT data size must be not zero. Set proper size.
Specified MAC ID already exists	Specified MAC ID is already in the list. Change MAC ID.
Not enough memory	NX-Server cannot obtain enough memory to run. Terminate other applications and retry.
Topic name already exist.	Specified topic name is already in the list. Specify another name and retry.
Invalid offset (over size)	Specified offset exceeds the maximum data size. Set the proper value.
Invalid access size	Combination of the specified access type and the offset exceeds the maximum data size. Specify proper offset and/or access type.

Error Message	Hints
Item name already exist.	Specified item name is already in the list. Specify another name and retry.
Item not selected	Item is not selected. Select item and retry.
Server is running	Server is currently running. Stop the server and retry.
Interface not specified.	Interface is not specified. Select proper interface and retry.
Cannot use interface	Failed to access interface. Terminate other application using the interface and retry.
Failed to go online.	Failed to go online with the interface. Check the baud rate and/or cables, then retry.
Failed to set monitor IO data.	Failed to read device information. Check the setting for device topic and item then retry.
Failed to start monitoring	Failed to start server function. Check the setting for device topic and item then retry.
Item name not specified	Device item name is not specified. Specify proper item name and retry.
Failed to start logging.	Failed to start data logging. Set the logging buffer size to the smaller number and retry.

Revision History

Revision Code	Date	Revision content
	February 2000	Original production

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