# 1 PREFACE

# Supported Models

## ■ GP4000 Series

| Series Name | Product Name | Model No |
|---|---|---|
| GP-4200 Series | GP-4201T | PFXGP4201TAD |
| | GP-4201TM(Modular Type) *1 | PFXGM4201TAD |
| | GP-4203T | PFXGP4203TAD |
| GP-4300 Series | GP-4301T | PFXGP4301TAD |
| | GP-4301TM(Modular Type) *1 | PFXGM4301TAD |
| | GP-4301TW | PFXGP4301TADW |
| | GP-4303T | PFXGP4303TAD |
| GP-4400 Series | GP-4401T | PFXGP4401TAD |
| | GP-4401WW | PFXGP4401WADW |
| GP-4500 Series | GP-4501T(Analog Touch Panel) | PFXGP4501TAA |
| | | PFXGP4501TAD |
| | GP-4501T(Matrix Touch Panel) | PFXGP4501TMD |
| | | PFXGP4501TMA |
| | GP-4501TW | PFXGP4501TADW |
| | GP-4503T | PFXGP4503TAD |
| GP-4600 Series | GP-4601T(Analog Touch Panel) | PFXGP4601TAA |
| | | PFXGP4601TAD |
| | GP-4601T(Matrix Touch Panel) | PFXGP4601TMA |
| | | PFXGP4601TMD |
| | GP-4603T | PFXGP4603TAD |

*1 You need to transfer a screen project file created in GP-Pro EX V3.10 or later.

## ■ GP3000 Series

| Series Name | Product Name | Model No. |
|---|---|---|
| GP3000H Series | AGP-3300HL | AGP3300H-L1-D24 |
| | AGP-3300HS | AGP3300H-S1-D24 |
| | AGP-3310HT | AGP3310H-T1-D24 |
| GP-3200 Series | AGP-3200A | AGP3200-A1-D24 |
| | AGP-3200T | AGP3200-T1-D24 |
| GP-3300 Series | AGP-3300L | AGP3300-L1-D24 |
| | AGP-3300L-D81 | AGP3300-L1-D24-D81K |
| | | AGP3300-L1-D24-D81C |
| | AGP-3300L-FN1M | AGP3300-L1-D24-FN1M |
| | AGP-3300L-CA1M | AGP3300-L1-D24-CA1M |
| | AGP-3300S | AGP3300-S1-D24 |
| | AGP-3300S-D81 | AGP3300-S1-D24-D81K |
| | | AGP3300-S1-D24-D81C |
| | AGP-3300S-CA1M | AGP3300-S1-D24-CA1M |
| | AGP-3300T | AGP3300-T1-D24 |
| | AGP-3300T-D81 | AGP3300-T1-D24-D81K |
| | | AGP3300-T1-D24-D81C |
| | AGP-3300T-FN1M | AGP3300-T1-D24-FN1M |
| | AGP-3300T-CA1M | AGP3300-T1-D24-CA1M |
| | AGP-3300U | AGP3300-U1-D24 |
| | AGP-3310T | AGP3310-T1-D24 |
| | AGP-3360T | AGP3360-T1-D24 |
| GP-3400 Series | AGP-3400S | AGP3400-S1-D24 |
| | AGP-3400S-D81 | AGP3400-S1-D24-D81K |
| | | AGP3400-S1-D24-D81C |
| | AGP-3400S-CA1M | AGP3400-S1-D24-CA1M |
| | AGP-3400T | AGP3400-T1-D24 |
| | AGP-3400T-D81 | AGP3400-T1-D24-D81K |
| | | AGP3400-T1-D24-D81C |
| | AGP-3400T-FN1M | AGP3400-T1-D24-FN1M |
| | AGP-3400T-CA1M | AGP3400-T1-D24-CA1M |
| | AGP-3450T | AGP3450-T1-D24 |

| Series Name | Product Name | Model No. |
|---|---|---|
| GP-3500 Series | AGP-3500L | AGP3500-L1-D24 |
| | AGP-3500L-D81 | AGP3500-L1-D24-D81C |
| | AGP-3500S | AGP3500-S1-AF |
| | | AGP3500-S1-D24 |
| | AGP-3500S-D81 | AGP3500-S1-AF-D81K |
| | | AGP3500-S1-AF-D81C |
| | | AGP3500-S1-D24-D81K |
| | | AGP3500-S1-D24-D81C |
| | AGP-3500S-CA1M | AGP3500-S1-AF-CA1M |
| | | AGP3500-S1-D24-CA1M |
| | AGP-3500T | AGP3500-T1-AF |
| | | AGP3500-T1-D24 |
| | AGP-3500T-D81 | AGP3500-T1-AF-D81K |
| | | AGP3500-T1-AF-D81C |
| | | AGP3500-T1-D24-D81K |
| | | AGP3500-T1-D24-D81C |
| | AGP-3500T-FN1M | AGP3500-T1-AF-FN1M |
| | | AGP3500-T1-D24-FN1M |
| | AGP-3500T-CA1M | AGP3500-T1-AF-CA1M |
| | | AGP3500-T1-D24-CA1M |
| | AGP-3510T | AGP3510-T1-AF |
| | AGP-3510T-CA1M | AGP3510-T1-AF-CA1M |
| | AGP-3550T | AGP3550-T1-AF |
| | AGP-3560T | AGP3560-T1-AF |
| GP-3600 Series | AGP-3600T | AGP3600-T1-AF |
| | | AGP3600-T1-D24 |
| | AGP-3600T-D81 | AGP3600-T1-AF-D81K |
| | | AGP3600-T1-AF-D81C |
| | | AGP3600-T1-D24-D81K |
| | | AGP3600-T1-D24-D81C |
| | AGP-3600T-FN1M | AGP3600-T1-AF-FN1M |
| | | AGP3600-T1-D24-FN1M |
| | AGP-3600T-CA1M | AGP3600-T1-AF-CA1M |
| | | AGP3600-T1-D24-CA1M |
| | AGP-3600U-CA1M | AGP3600-U1-D24-CA1M |
| | AGP-3650T | AGP3650-T1-AF |
| | AGP-3650U | AGP3650-U1-D24 |
| GP-3700 Series | AGP-3750T | AGP3750-T1-AF |
| | | AGP3750-T1-D24 |

## ■ WinGP

| Series Name | | Model No. |
|---|---|---|
| PS Series | PS-2000B Series | PS2000B-41 |
| | PS-3000B Series | PS3000-BA |
| | PS-3001B Series | PS3001-BD |
| | PS-3450A Series | PS3450A-T41 |
| | | PS3450A-T41-24V |
| | PS-3451A Series | PS3451A-T41-24V |
| | PS-3650A Series | PS3650A-T41 |
| | | PS3650A-T42 |
| | | PS3650A-T42-24V |
| | PS-3651A Series | PS3651A-T41 |
| | | PS3651A-T42 |
| | | PS3651A-T42-24V |
| | PS-3700A Series | PS3700A-T41-ASU-P41 |
| | PS-3710A Series | PS3710A-T41 |
| | | PS3710A-T42 |
| | | PS3710A-T41-PA1 |
| | | PS3710A-T42-24V |
| | PS-3711A Series | PS3711A-T41 |
| | | PS3711A-T42 |
| | | PS3711A-T41-24V |
| | | PS3711A-T42-24V |
| | PS-4*00 Series | PS4000 Series (Product Name) |
| PL Series | PL-3000B Series | APL3000-BA |
| | | APL3000-BD |
| | PL-3600T Series | APL3600-TA |
| | | APL3600-TD |
| | PL-3600K Series | APL3600-KA |
| | | APL3600-KD |
| | PL-3700T Series | APL3700-TA |
| | | APL3700-TD |
| | PL-3700K Series | APL3700-KA |
| | | APL3700-KD |
| | PL-3900T Series | APL3900-TA |
| | | APL3900-TD |
| PC/AT | PC/AT | - |

## ■ LT4000 Series

| Series Name | Product Name | Model No. |
|---|---|---|
| LT4000 Series | LT-4201TM (Modular Type Analog) | PFXLM4201TADAC |
| | | PFXLM4201TADAK |
| | LT-4201TM (Modular Type DIO) | PFXLM4201TADDC |
| | | PFXLM4201TADDK |
| | LT-4301TM (Modular Type Analog) | PFXLM4301TADAC |
| | | PFXLM4301TADAK |
| | LT-4301TM (Modular Type DIO) | PFXLM4301TADDC |
| | | PFXLM4301TADDK |

## ■ LT3000 Series

| Series Name | Product Name | Model No. |
|---|---|---|
| LT3000 Series | LT-3300L | LT3300-L1-D24-K |
| | | LT3300-L1-D24-C |
| | LT-3300S | LT3300-S1-D24-K |
| | | LT3300-S1-D24-C |
| | LT-3300T | LT3300-T1-D24-K |
| | | LT3300-T1-D24-C |

## ■ GP2000 Series/GP77R Series/GLC Series/Factory Gateway

| Series Name | Product Name | Model No. | Built-in Ethernet | External Ethernet | Remarks |
|---|---|---|---|---|---|
| GP2300 Series | GP-2300L | GP2300-LG41-24V | Available | Not Available | - |
| | GP-2300T | GP2300-TC41-24V | | | |
| GP2400 Series | GP-2400T | GP2400-TC41-24V | | | |
| GP2500 Series | GP-2500T | GP2500-TC11 | | Available | *1 |
| | | GP2500-TC41-24V | | | |
| GP2501 Series | GP-2501S | GP2501-SC11 | Not Available | | *2 |
| | GP-2501T | GP2501-TC11 | | | |
| GP2600 Series | GP-2600T | GP2600-TC11 | Available | | *1 |
| | | GP2600-TC41-24V | | | |
| GP2601 Series | GP-2601 | GP2601-TC11 | Not Available | | *2 |
| GLC2300 Series | GLC2300L | GLC2300-LG41-24V | Available | Not Available | - |
| | GLC2300T | GLC2300-TC41-24V | | | |
| GLC2400 Series | GLC2400T | GLC2400-TC41-24V | | | |
| GLC2500 Series | GLC2500T | GLC2500-TC41-24V | | Available | *1 |
| | | GLC2500-TC41-200V | | | |
| GLC2600 Series | GLC2600T | GLC2600-TC41-24V | | | |
| | | GLC2600-TC41-200V | | | |
| GP77R Series | GP-377RT | GP377R-TC11-24V | Not Available | Available | *2 |
| | | GP377R-TC41-24V | | | |
| | GP-477RE | GP477R-EG11 | | | |
| | | GP477R-EG41-24VP | | | |
| | GP-577RS | GP577R-SC11 | | | |
| | | GP577R-SC41-24VP | | | |
| | GP-577RT | GP577R-TC11 | | | |
| | | GP577R-TC41-24VP | | | |
| IT2400 Series | IT2400 TypeA | IT2400-TC41-GP | Available | Not Available | - |
| | | IT2400-TC41-GP200V | | | |
| | IT2400 TypeB | IT2400-TC41-GLC | | | |
| | | IT2400-TC41-GLC200V | | | |
| Factory Gateway | Factory Gateway | FGW-SE41-24V | Available | - | - |

*1 GP Ethernet I/F Unit or Multi Unit E is also applicable.

*2 GP Ethernet I/F Unit or Multi Unit E is necessary.

**NOTE**

- Using 'Pro-Server EX' with GP-2501 Series or GP-2601 Series requires an expansion Ethernet unit. Therefore, protocols that need expansion units cannot be used in this case.
- For GP-2501 Series and GP-2601 Series, 'Pro-Server EX' and Ethernet protocols cannot be used simultaneously.
- The IP addresses, port Nos., etc. are different when with only built-in Ethernet and when with an expansion Ethernet unit mounted.

# OPERATING ENVIRONMENT

Confirm that the PC in which you will install this software meets the following operating requirements.

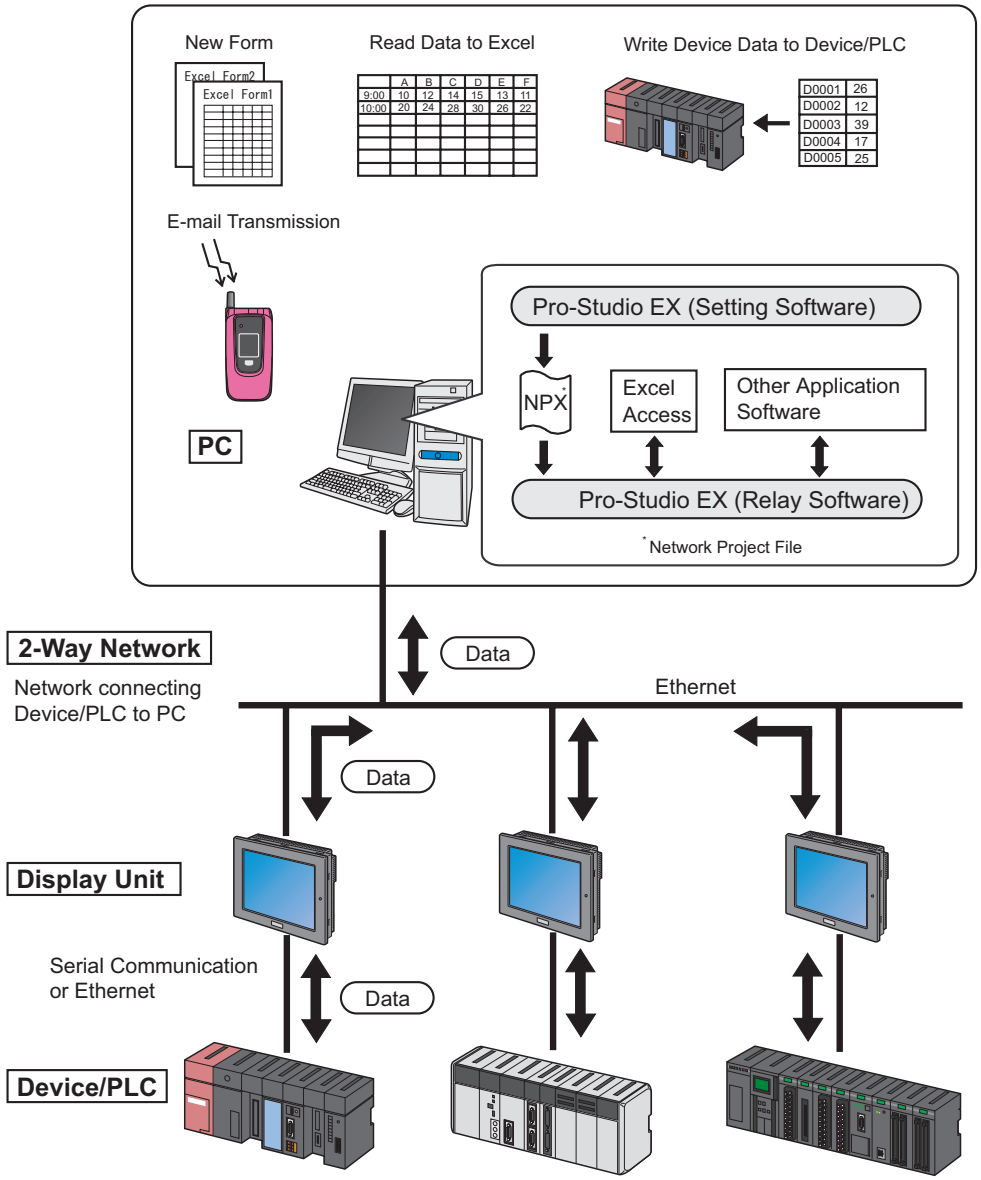
| Item | Requirements | Remarks |
|---|---|---|
| PC | Windows(R) must operate normally | Pentium(R) III 500MHz or faster processor<br>PC/AT compatible |
| Resolution | SVGA 800x600 or more is recommended<br>256 colors or more is required<br>Only 96dpi font is supported. | |
| Hard Disk Space Requirements | Pro-Server EX Developer Operating Environment<br>1.1G byte (2.2G bytes recommended)<br>Pro-Server EX Runtime Operating Environment<br>650M bytes (1.3G byte recommended) | |
| Memory Requirements | Pro-Server EX Developer Operating Environment<br>256 MB or more<br>Pro-Server EX Runtime Operating Environment<br>128 MB or more | 256 MB or more is recommended |
| OS | Windows(R) 2000/ XP(Home Edition/Professional Edition)/Vista (Ultinate Edition/Professional Edition/Home Premium Edition/Home Basic Edition/Business Edition/Enterprise Edition)/2003 Server (Standard Edition/Enterprise Edition) | 64-bit OS (x64 Edition) is not supported.<br>Supported by Windows 2000 and Windows XP Service Pack 3 or later. |
| | Windows(R) 7 (Ultimate Edition/Professional Edition/Home Premium Edition/Home Basic Edition/Business Edition/Enterprise Edition)/ Server 2008 (Standard Edition/Enterprise Edition/ DataCenter Edition)/ Server 2008 R2 (Standard Edition/Enterprise Edition/DataCenter Edition) | |
| Others | Microsoft(R) Excel 2000 to 2010<br>Microsoft(R) Access 2000 to 2010<br>Microsoft(R) Internet Explorer Ver. 5.0 or later*<br>Microsoft(R) Visual Basic Ver.6.0<br>Microsoft(R) Visual C++ Ver.6.0 or Ver.7.0<br>Microsoft(R) Visual Studio .NET 2003 or later<br>.NET Framework Ver.2.0<br>Acrobat(R) Reader(R) Ver.6.0.3 or later | Automatically installed in the PC without .NET Framework Ver.2.0<br><br>32-bit versions are the supported offices for 64-bit OS (x64 Edition).<br><br>The file format needed to be compatible with Office 2003 or earlier for actions (except for Excel Form Action). |
| Supported Language | Japanese, English | |
| LAN Port | Commercially available LAN cable<br>HUB | 10BASE-2<br>10BASE-5<br>10BASE-T<br>100BASE-T<br>1000BASE-T |

| Item | Requirements | Remarks |
|---|---|---|
| Disk Drive | DVD-ROM drive compatible with Windows(R) 2000 / XP (Home Edition/Professional Edition) / Vista (Ultinate Edition/Professional Edition/Home Premium Edition/Home Basic Edition/Business Edition/Enterprise Edition) / 7 (Ultimate Edition/ Professional Edition/Home Premium Edition/ Home Basic Edition/Business Edition/Enterprise Edition) / 2003 Server (Standard/Enterprise) / Server 2008 / Server 2008 R2 indispensable | Supported by Windows 2000 and Windows XP Service Pack 3 or later. |
| Mouse | Windows(R) 2000 / XP (Home Edition/ Professional Edition) / Vista (Ultinate Edition/ Professional Edition/Home Premium Edition/ Home Basic Edition/Business Edition/Enterprise Edition) / 7 (Ultimate Edition/Professional Edition/ Home Premium Edition/Home Basic Edition/ Business Edition/Enterprise Edition) / 2003 Server (Standard/Enterprise) / Server 2008 / Server 2008 R2 | Supported by Windows 2000 and Windows XP Service Pack 3 or later. |
| Printer | | |

# 1.1 What is 'Pro-Server EX'?

'Pro-Server EX' is PC software to collect displayed data from the Display Units and measured data from the devices connected to the PC via a network (Ethernet) in the PC and execute various processing of the collected data.

'Pro-Server EX' is linked with various application software such as 'Microsoft Excel' (referred to as 'Excel'), and 'Microsoft Access' (referred to as 'Access'). This allows you to use the data as you desire utilizing various features of application software such as form creation and write of device data to the Device/PLC.

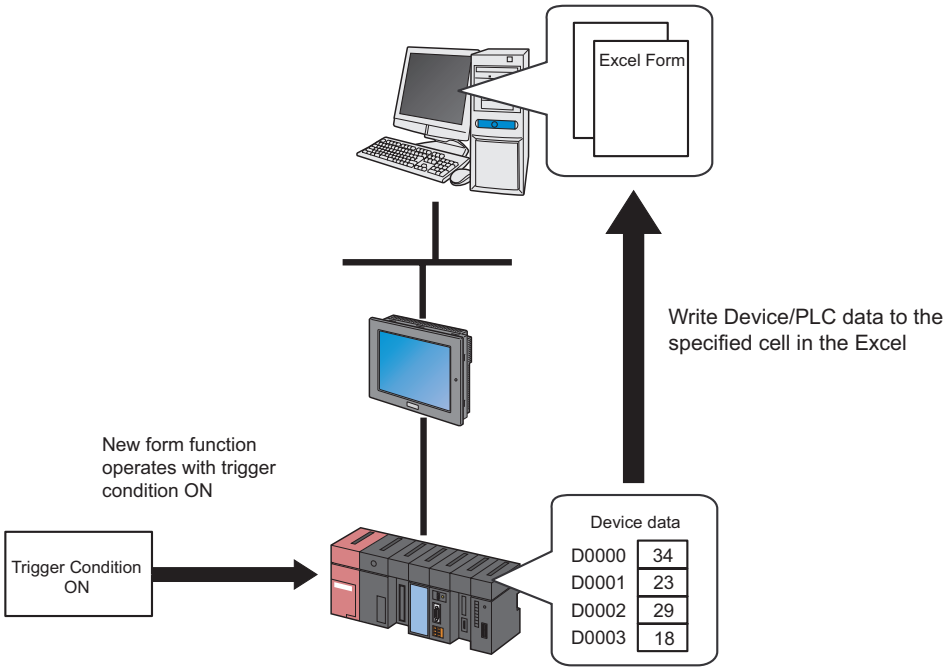


# 1.2 What You can Do with 'Pro-Server EX'

## ■ Form Creation

'Pro-Server EX' allows you to automatically create various forms such as control sheets and reports based on the data read from the display units or Device/PLCs. 'Pro-Server EX' prepares a wide variety of templates that are applicable to the formats frequently used in production sites.

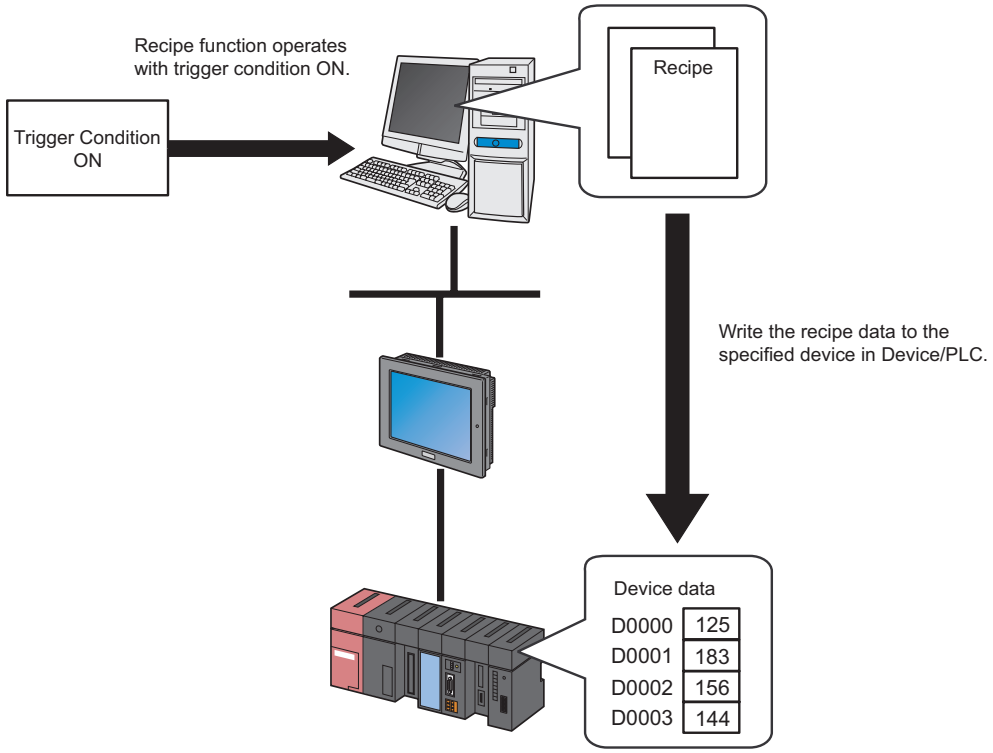
☞"5 Creating a Form Using Excel"



## ■ Data Input to Device/PLC

'Pro-Server EX' allows you to write plural data to the Device/PLCs at an arbitrary timing. This enables you to input working instructions, various parameters, etc. in the office without going out to the production site.

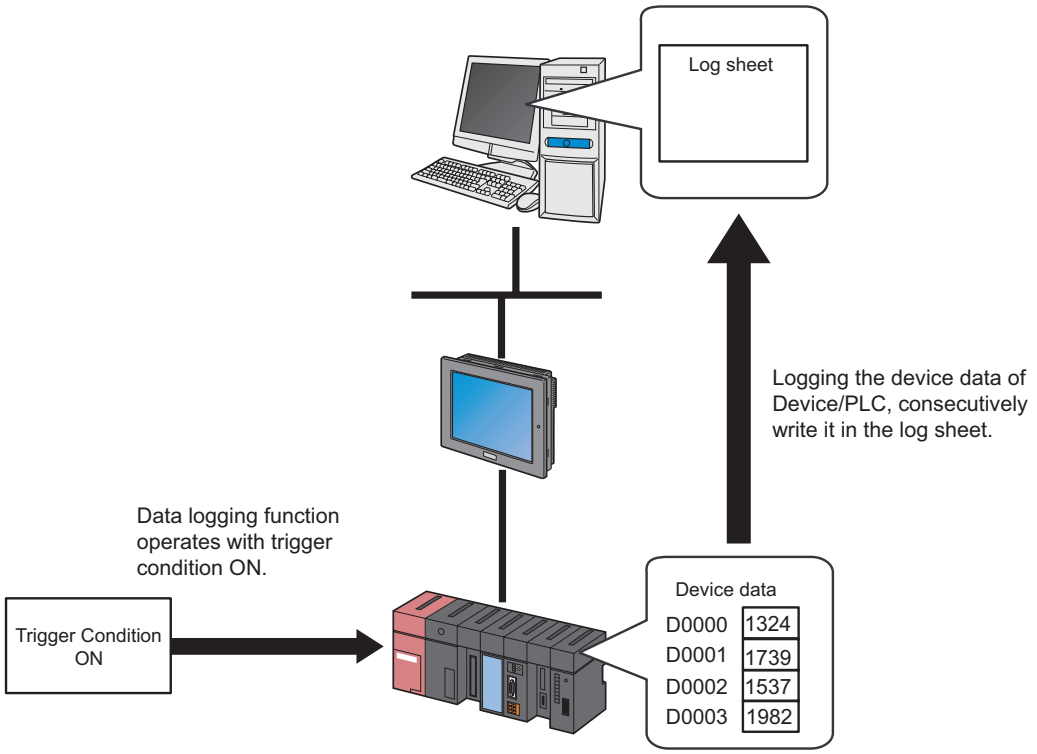
☞"12 Writing Excel Data in Device/PLC"
☞"13 Writing CSV File Data in Device/PLC"
☞"14 Reading Device/PLC from Database"



## ■ Logging of Device/PLC Data

'Pro-Server EX' allows periodic logging (continuous read) of plural data at an arbitrary interval. The logged data is written in application software such as 'Excel'. This feature enables you to easily edit or process the data.

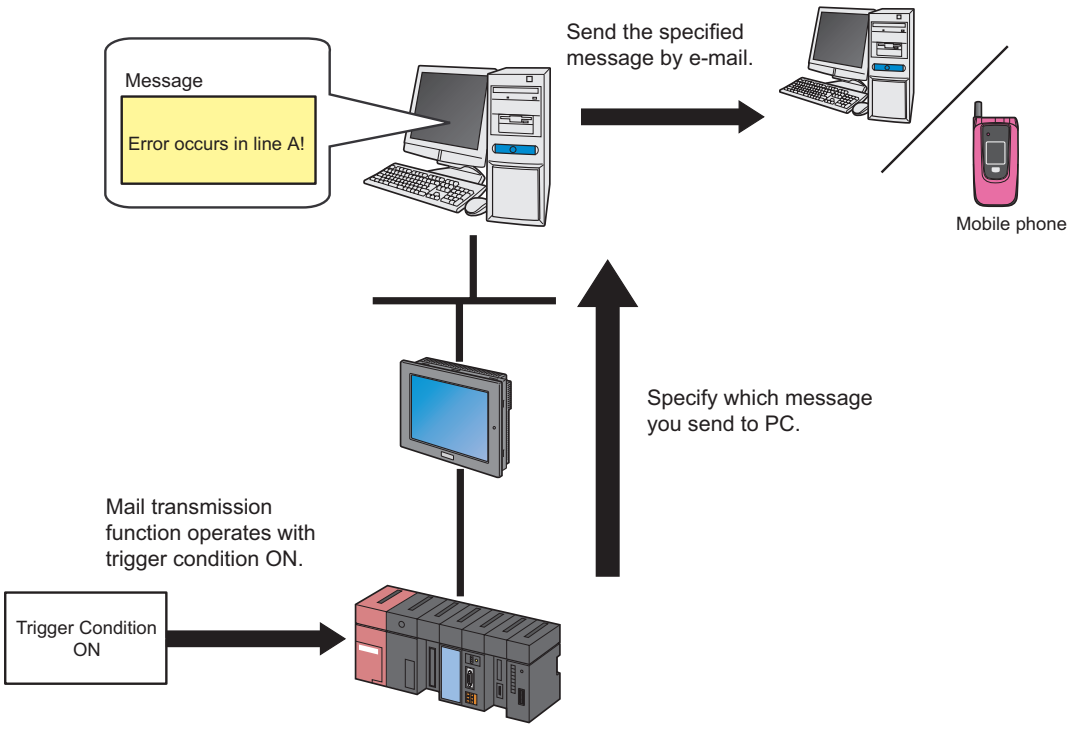
☞"6 Writing Device/PLC Data in Excel File"
☞"7 Writing Device/PLC Data in CSV File"



## ■ Sending Message via E-Mail

'Pro-Server EX' allows e-mailing preset messages when a preset event has occurred such as change in data or occurrence of trouble. This feature enables you to report to the manager immediately after a trouble occurred.

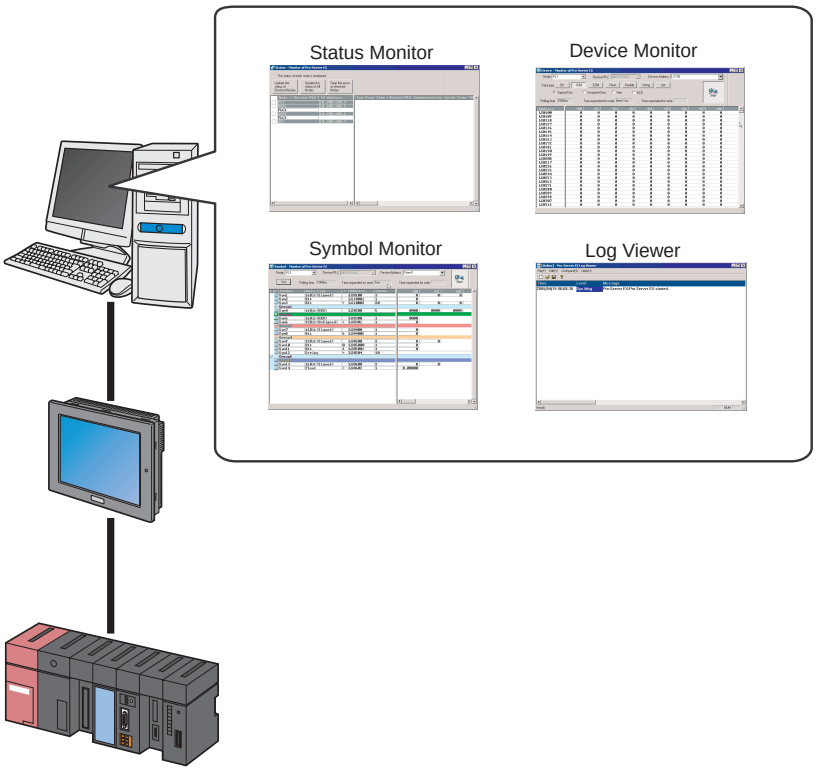
☞"15 Reporting Alarm by E-mail"



## ■ Monitoring of Device/PLC Data

'Pro-Server EX' allows you to monitor device data of the display units and Device/PLCs with simple operation. It also allows you to write the data to an arbitrary device address from the PC.

☞"28 Simply Confirming On-site Status"

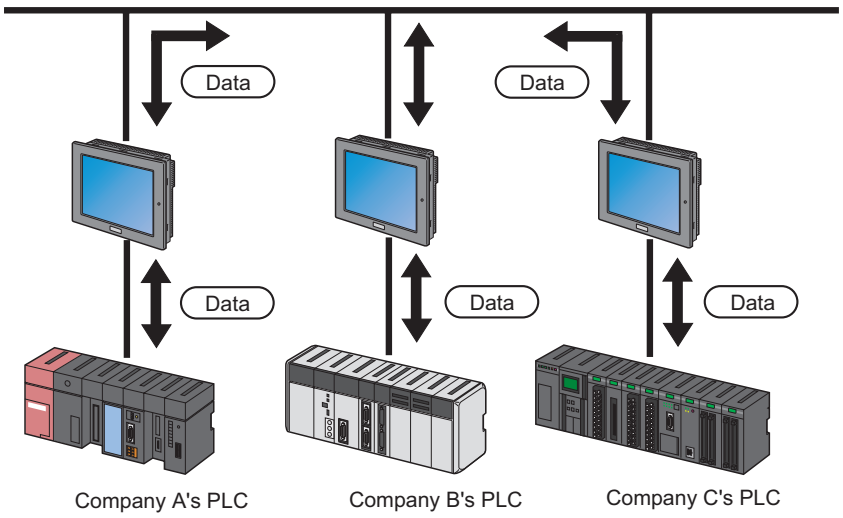



The 'Pro-Server EX' has other features as follows.

## ■ Data Transfer between Device/PLCs

'Pro-Server EX' allows data transfer among the display units and Device/PLCs without a PC. This feature enables data sharing even when the Device/PLCs are of different manufacturer.

☞"19 Sending Data between Devices"




## ■ Data Processing using a User Application Program

'Pro-Server EX' allows access to the data of Device/PLCs using a user application program created in VB ('Visual Basic'), VC ('Visual C++'), VB .NET, or C# .NET format. This feature enables a variety of data processing depending on the contents of the program.

☞"27 Designing Your Own Program"

The above features are only a part of the various features of 'Pro-Server EX'. Refer to each chapter of this manual for the other features of 'Pro-Server EX'.

# 1.3 How the Data Management System Operates

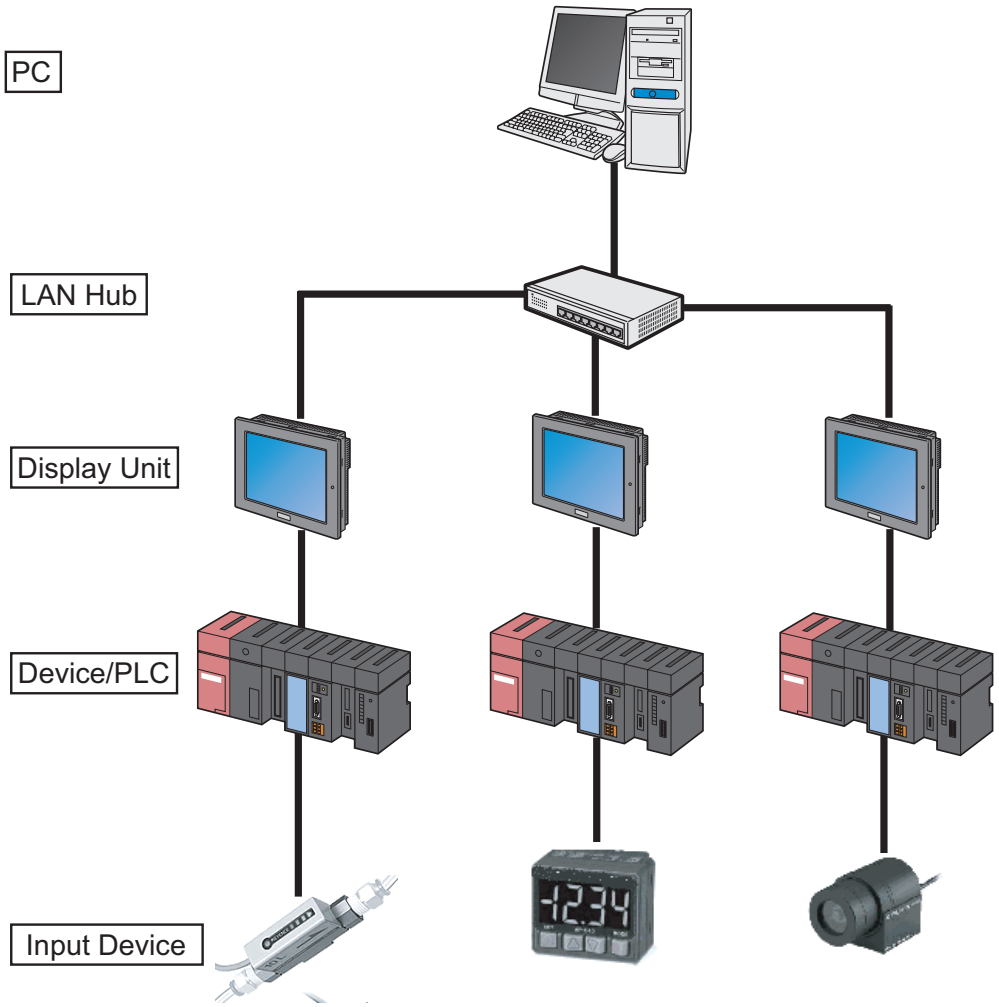
This section describes how the data management system using 'Pro-Server EX' operates.

## 1.3.1 Devices to be Used

The data management system using Pro-Server EX needs the following devices.
You must prepare an appropriate system configuration as follows before actual use.

☞"2 Preparation"

*The following shows an example of the system. You can use other devices depending on the working environments.



## ■ PC

Used to read/write the data of display units and Device/PLCs via a network (Ethernet) after 'Pro-Server EX' and 'Pro-Studio EX' are installed therein.

## ■ LAN Hub

Used to connect all the devices together via Ethernet.

## ■ Display Unit

A combination of operation panels and display units that have been provided separately for machines and equipment.

The display unit has features of displaying characters information, graphics information, etc. and entering data from touch keys.

## ■ Device/PLC

Used to capture data and perform control. The Device/PLC includes a PLC, thermostat, inverter, etc. The Device/PLC performs control based on the data from the input devices and outputs the result to the display units.

## ■ Input Device

An externally connected device such as a sensor and a switch that performs measurement, counting, etc. The data is captured via the Device/PLC.

## 1.3.2 Software to be Used

The data management system using 'Pro-Server EX' includes following software. This section describes the overview and features of the software.

### ■ 'Pro-Studio EX'

System designing software to be used when developing a data management system.
'Pro-Studio EX' allows various settings such as those of information about the devices being connected to the network and conditions for receiving/sending data and then creating a network project file containing those settings.
After the created network project file is transferred to the display units, the data management system can operate effectively according to the settings in the network project file.

### ■ 'Pro-Server EX'

A data relay driver for operating data management system.
'Pro-Server EX' allows data communication between the PC and the display units in accordance with the content of the network project file created using Pro-Studio EX, and to read/write of the collected data to the application software of the PC and the devices.

> Network Project File
>
> The data management system using 'Pro-Server EX' creates a file in the display unit's screen data (project file), which contains information about the devices being connected and features to be used. This file is called "Network project file", and is affixed with an extension of ".npx". The same network project file is basically used for all the devices being connected via a network, and the data is processed based on the settings.

### ■ '2-Way Driver'

Built-in software in a display unit, which serves as an interactive communication driver to translate communication protocols of various Device/PLCs and to perform communication between the PC and the Device/PLCs via the display units.
The 2-way driver acts according to the content of the network project file transferred from the PC.

IMPORTAN • The GP77R Series, GP2501 Series, and GP2601 Series have no built-in '2-way driver'. Be sure to download a '2-way driver' from 'GP-Pro PB III'. For help with downloading, refer to the 'GP-Pro PB III Operation Manual'.

### 1.3.3 How to Transfer the Data

The data management system using 'Pro-Server EX' uses the following features to read/write data from/to application software such as 'Excel'.
Depending on the ACTION to be executed, an appropriate feature is used.

#### ■ DDE(Dynamic Data Exchange)

A system to support exchange of data between two applications running simultaneously on Windows.
For example, in the case when reading the data of the Device/PLCs using 'Excel', 'Excel' requests data and 'Pro-Server EX' sends the data. That is how the data is automatically exchanged.
Application software such as 'Pro-Server EX', 'Excel' and 'Access' has this DDE function preinstalled, making it possible to read/write data without any special settings.

#### ■ API(Application Programming Interface)

A series of functions used for relaying 'Pro-Server EX' and application programs. Using API can exchange data via user application programs created in VB ('Visual Basic'), VC ('Visual C++'), VB .NET, or C# .NET format.
Access of an application program to the 'Pro-Server EX' API used for exchanging data enables read/write of the data of the Device/PLCs.

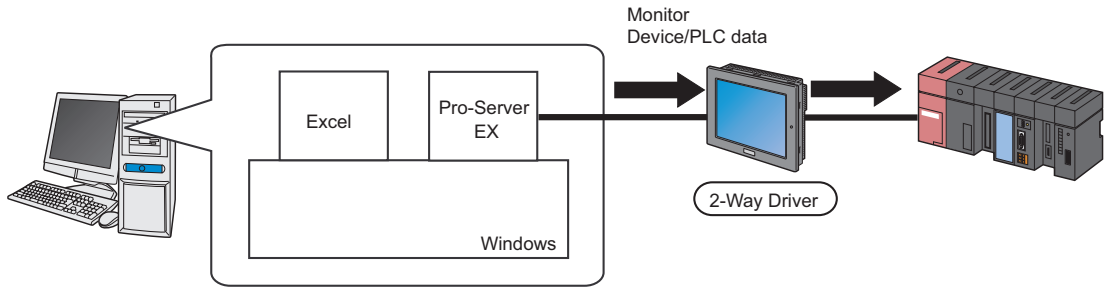
#### ■ ACTION

A system preinstalled in 'Pro-Server EX' to exchange data.
The ACTION includes data exchange with an application program, access to a transmission server when sending e-mails.

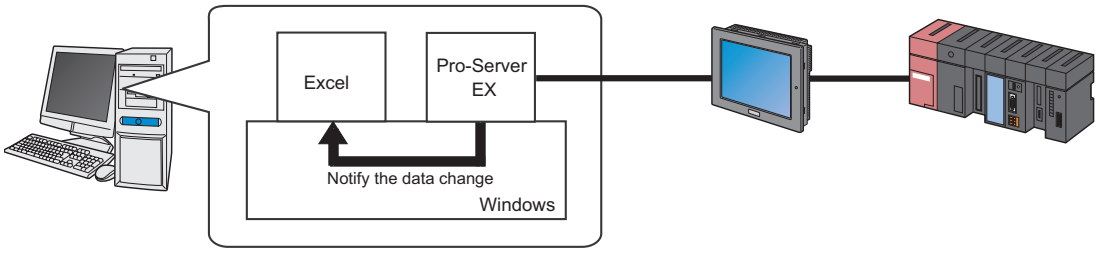
The following shows how the DDE function runs.

[Data Exchange by DDE]

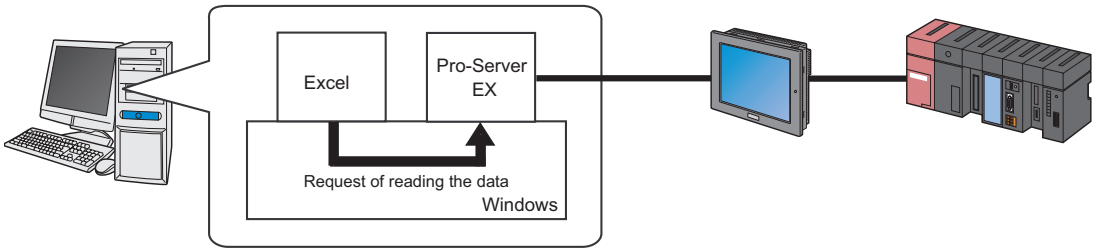
(1) 'Pro-Server EX' on Windows always monitors the measurement data in the Device/PLC via the 2-way driver.



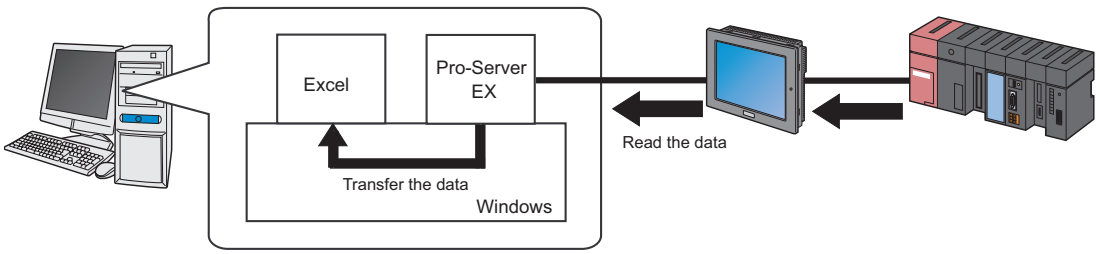

(2) The 'Pro-Server EX' notifies 'Excel' of a change in the data in the Device/PLC, if any.



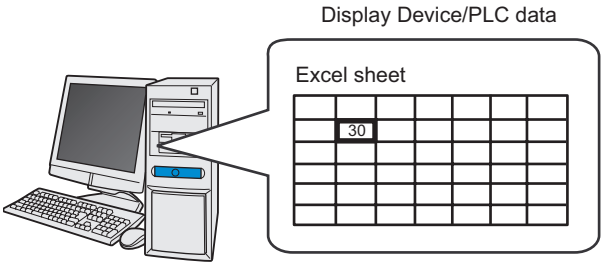

(3) 'Excel' requests read of the data to 'Pro-Server EX'.




(4) 'Pro-Server EX' reads the Device/PLC data and transfers the read data to 'Excel'.



(5) 'Excel' displays the transferred data on the specified cell.



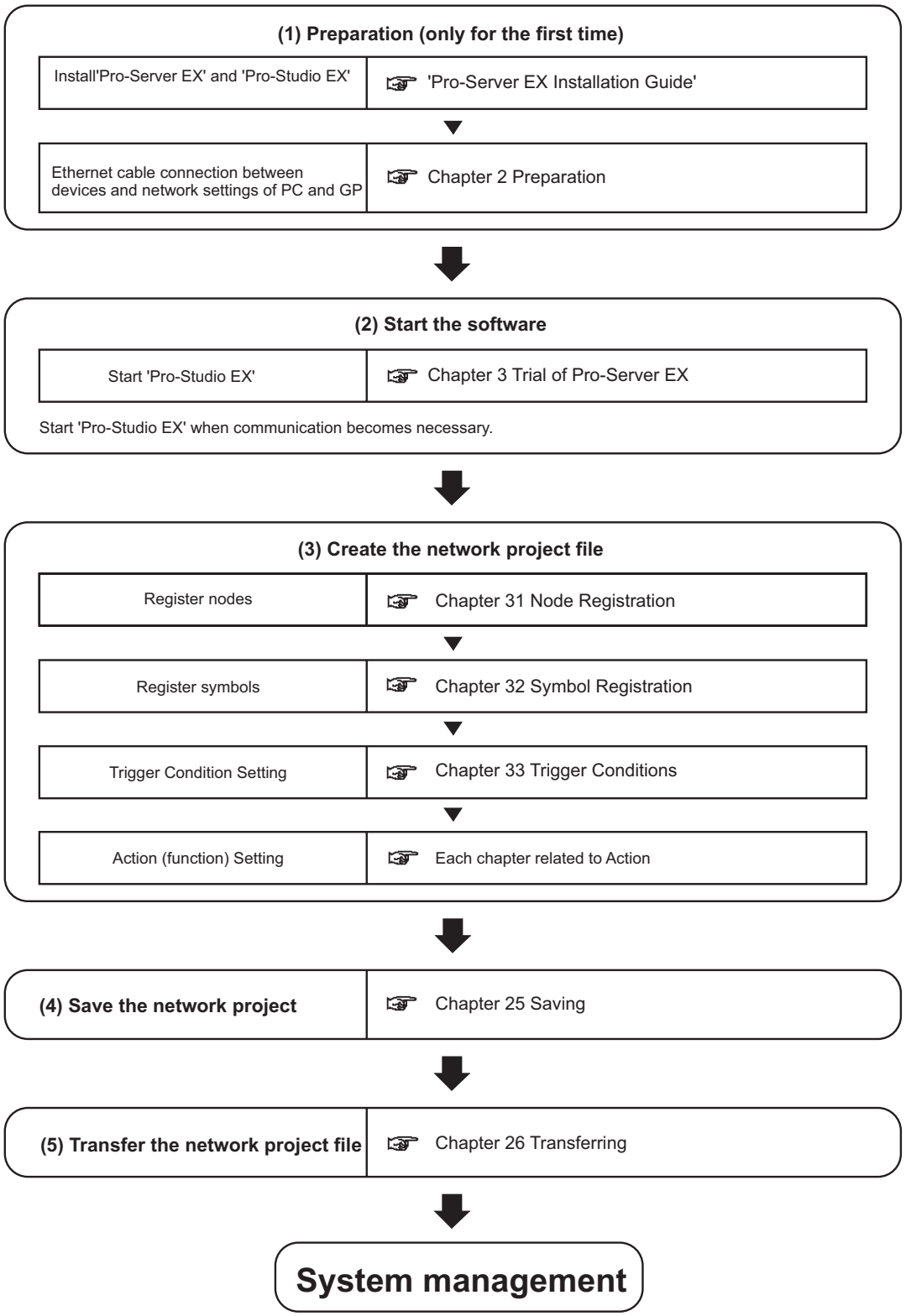
# 1.4 Necessary Operation

This chapter describes necessary operation for executing data management using 'Pro-Server EX' and the flow of the procedures.

Refer to each chapter in this manual for more details.

IMPORTANT

- The following flow of the procedures assumes that the connection between the display unit and Device/PLC and the setting of the display unit are completed. Incomplete connection and setting may result in failure to read/write of data using the PC. Be sure to complete correct connection and setting referring to the related operation manual of the display unit and the 'GP-Pro EX' (or 'GP-PRO/PB III for Windows').


(1) Preparation (only for the first time)
Install'Pro-Server EX' and 'Pro-Studio EX'
'Pro-Server EX Installation Guide'
Ethernet cable connection between devices and network settings of PC and GP
Chapter 2 Preparation
(2) Start the software
Start 'Pro-Studio EX'
Chapter 3 Trial of Pro-Server EX
Start 'Pro-Studio EX' when communication becomes necessary.
(3) Create the network project file
Register nodes
Chapter 31 Node Registration
Register symbols
Chapter 32 Symbol Registration
Trigger Condition Setting
Chapter 33 Trigger Conditions
Action (function) Setting
Each chapter related to Action
(4) Save the network project
Chapter 25 Saving
(5) Transfer the network project file
Chapter 26 Transferring
System management