

Introduction

What is Pro-Server EX ?

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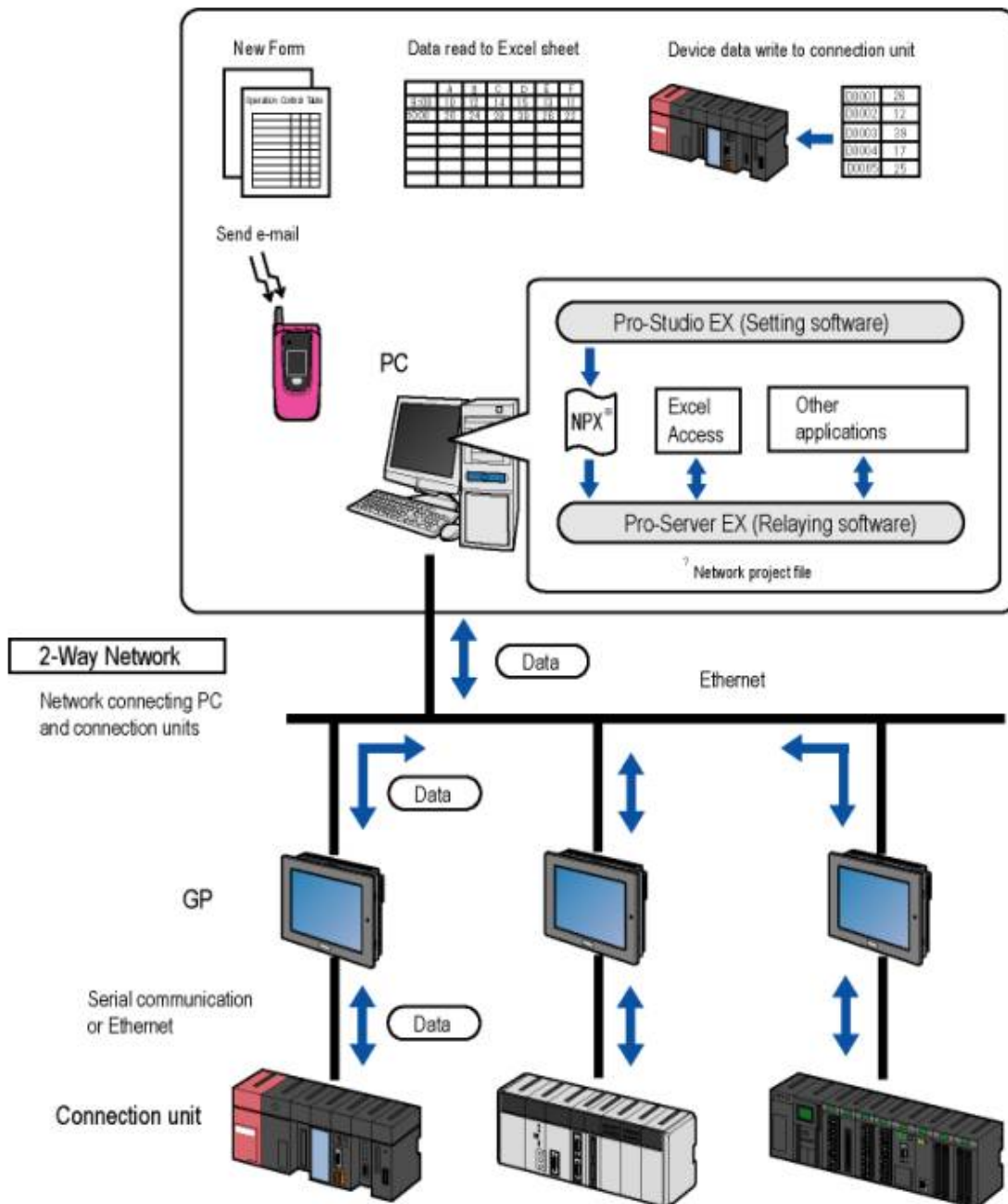
An Ethernet information setup of GP3000 series

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What is Pro-Server EX ?

Pro-Server EX is the data management software which can do a network of the factory floor and office easily and in low cost. Only by program-less easy setup, field/site data can be observed, collected by high rank PC and data can be exchanged by using the device.

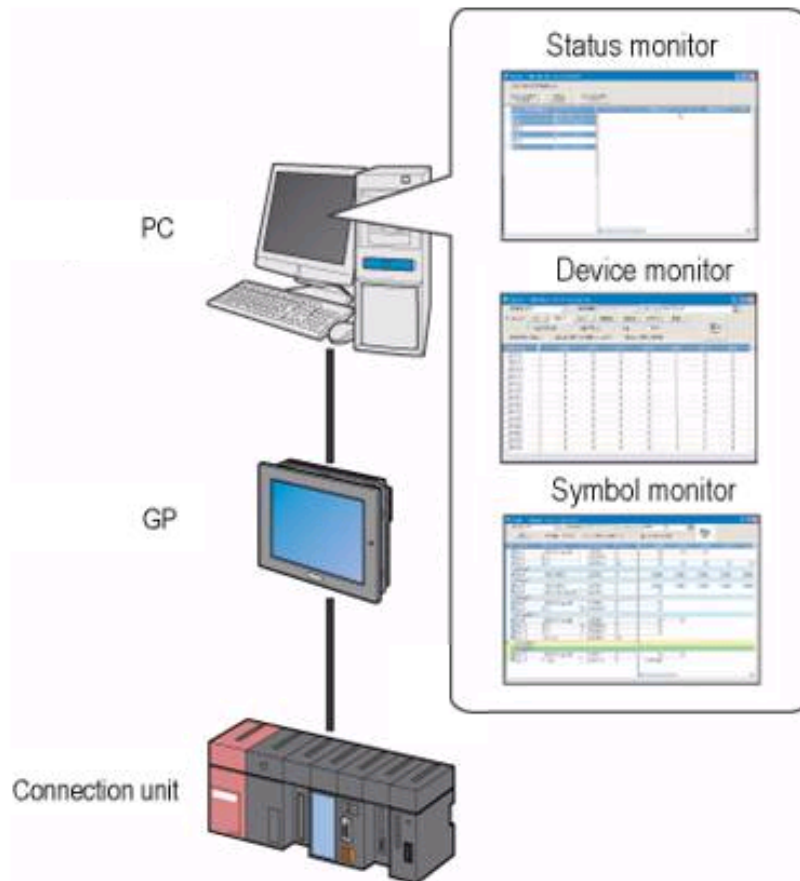




Things that can be done by using Pro-Server EX

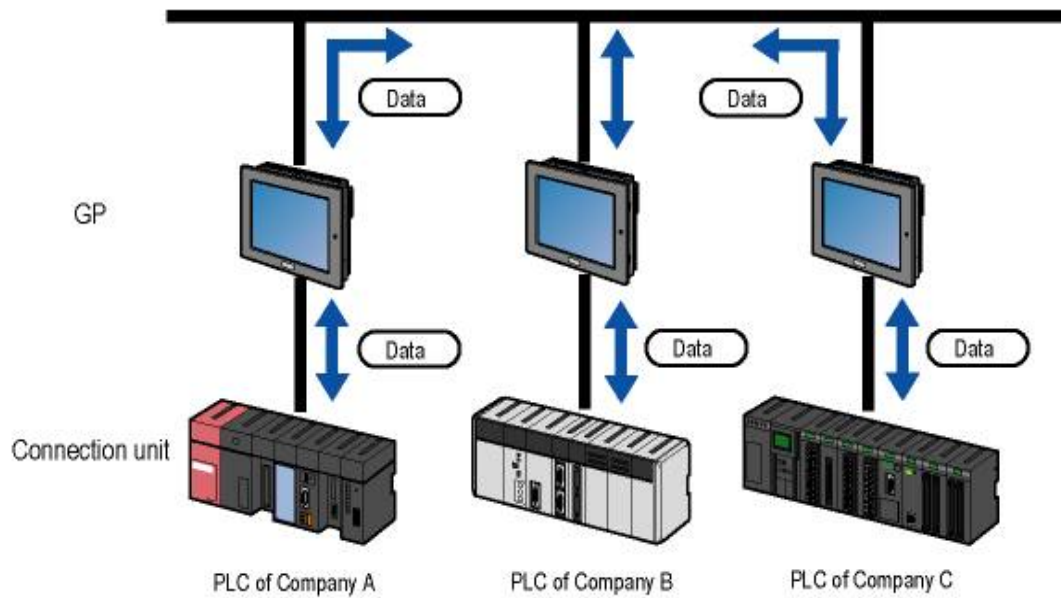
Status observation (Chapter 2)

The status of a participating node and the data of PLC can be read and written from a personal computer.



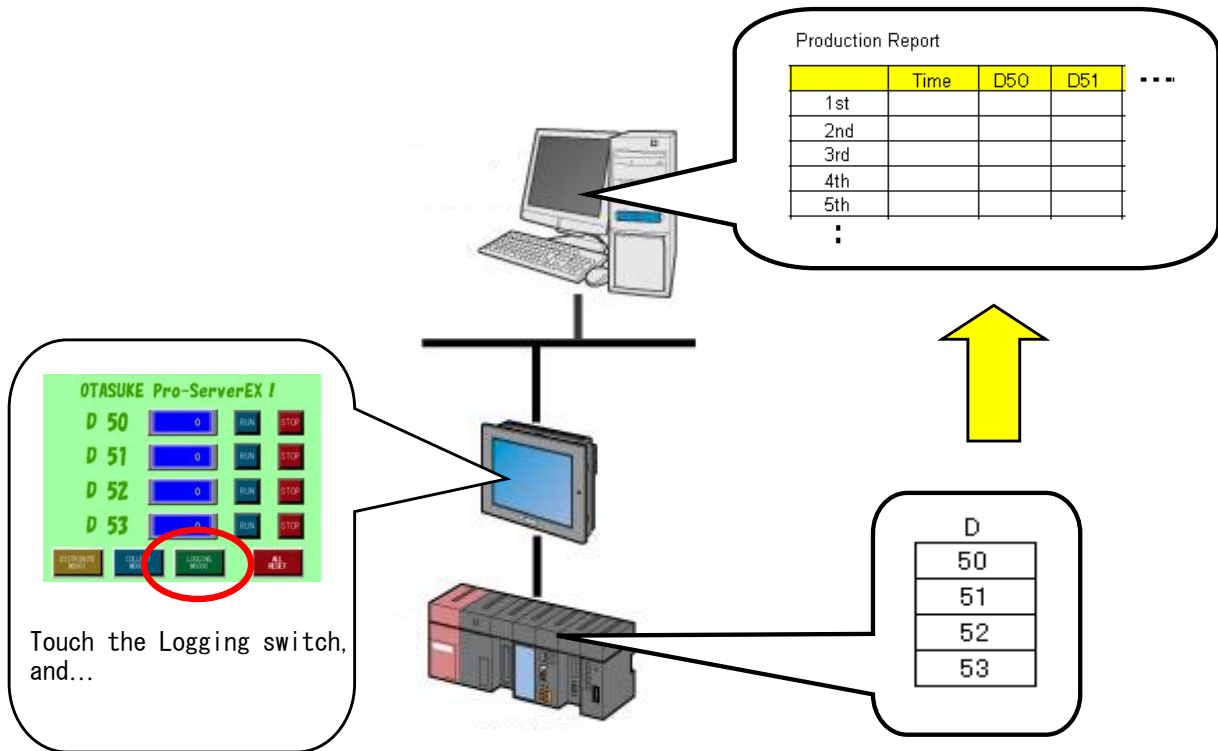
Communication between devices (Chapter 3)

Data can be exchanged by using participating node.



Excel form (Chapter 4)

The data of PLC device can be recorded by reading it to Excel on PC at any time.

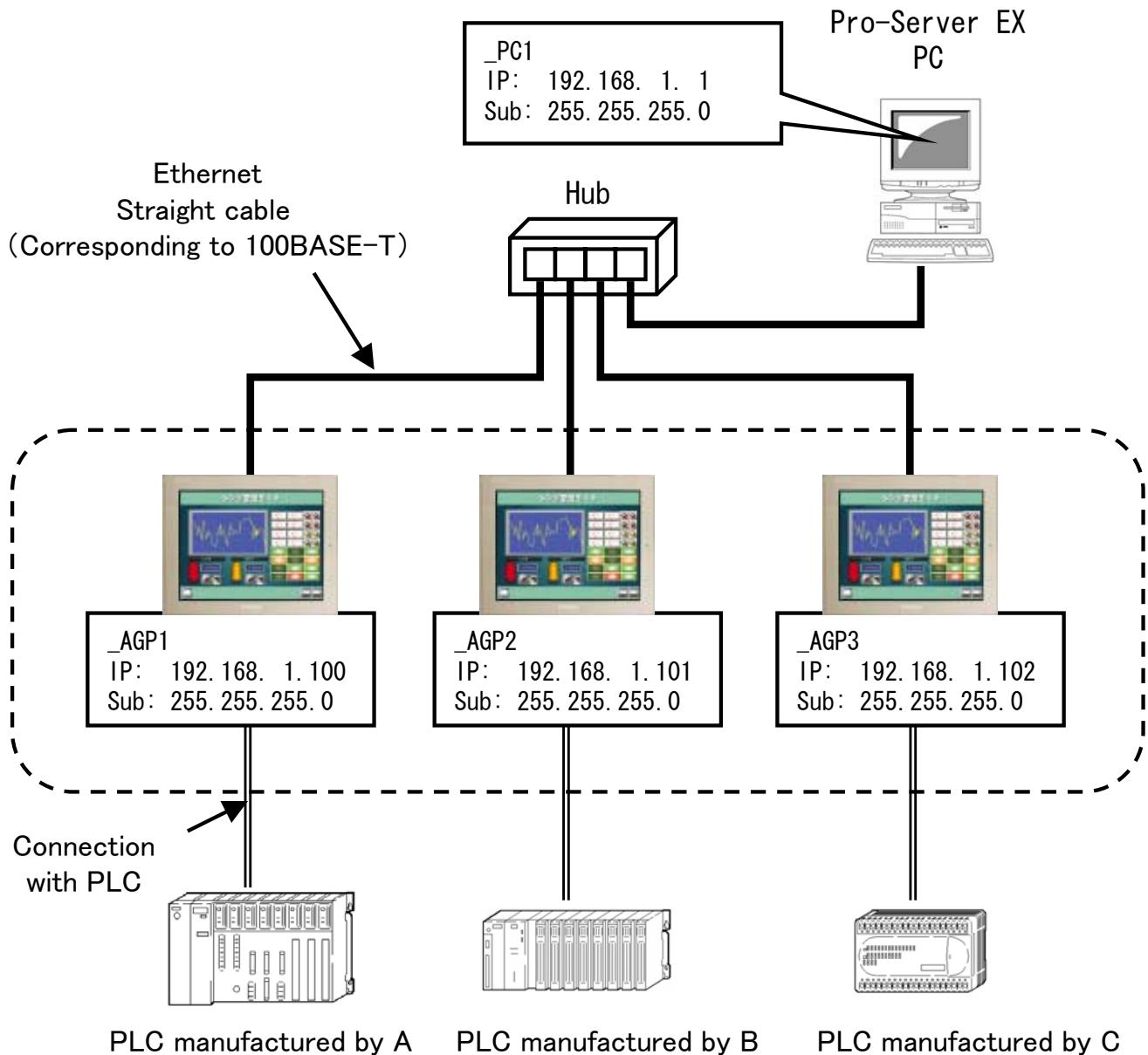




Preliminary knowledge of Pro-Server EX

IP address and subnet mask

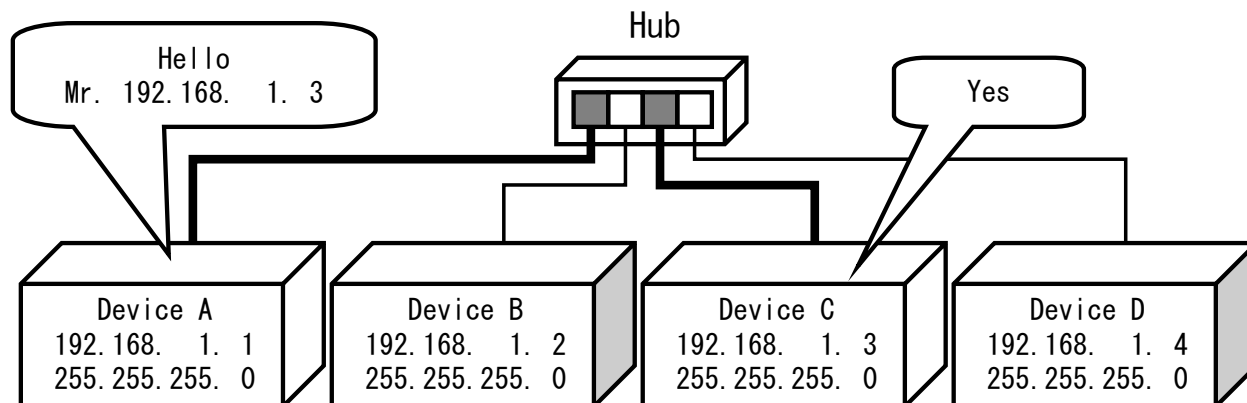
To use Pro-Server EX, the basic knowledge related to Ethernet which is required, is explained considering the example of the following LAN (Local Area Network).



What is IP address ?

It is the peculiar number which is possessed by each device in Ethernet communication.
The structure of Ethernet resembles the telephone. even if you make a call on the same number as itself, call is not possible, similarly in Ethernet communication, each device surely has an individual number and by calling the respective number mutually, data is exchanged .

Example)

Structure of IP address

Example) IP: 192 . 168 . 1 . 1

An IP address divides a numerical value into four parts by dot as mentioned above, respectively, and is displayed.

It is written in Decimal number so that anyone can see and understand easily, actually it is treated as follows with the binary in the device.

IP: 11000000 . 10101000 . 00000001 . 00000001

The size of IP address is 8 bit x4=32 bit.

It is displayed with numeric value from 0~255 with decimal number for 8 bits divided by the dot. Therefore, all addresses taking values from 0.0.0.0-255.255.255.255. are considered up to 3,200 million

However, the IP address actually used on the site uses the address domain of the following generally called "Private IP address."

<Private IP address>

10. 0. 0. 1 ~ 10.255.255.255 (Subnet:255. 0. 0. 0) class A

172. 16. 0. 1 ~ 172. 31.255.255 (Subnet :255. 255. 0. 0) class B

192.168. 0. 1 ~ 192.168.255.255 (Subnet :255. 255. 255. 0) class C

※ 0 cannot be used for the last digit of an IP address.

What is subnet mask ?

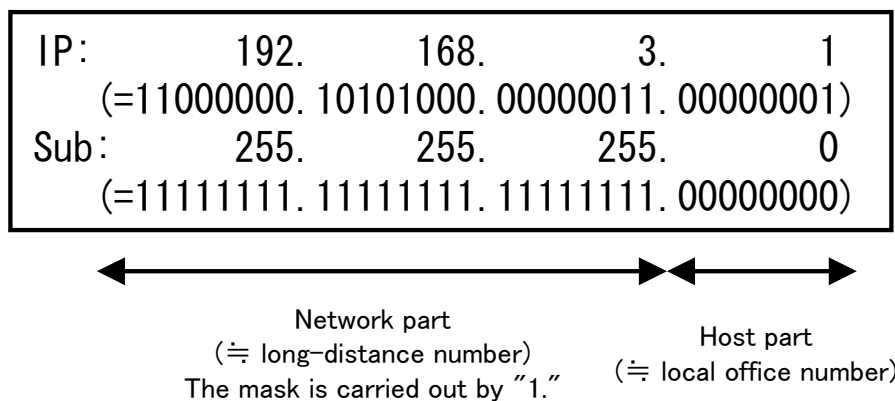
In order to divide and manage some devices to a small network in a big network, it is the numerical value attached to an IP address.

Structure of a subnet mask

If an IP address is compared with a telephone number, a subnet mask will divide a "Long-distance number" and a "Local office number" for the whole number.

IP address and subnet mask is written with binary respectively, as shown in the following figure, digital part of IP address which overlaps with 1 digit of subnet mask is treated as long distance number.

Example)



Long distance number is called as "Network part" and Local office number is called as "Host part" and the network will be divided by dividing the subnet in 2 parts of one IP address. If it is the IP addresses belonging to the same long distance number, it can communicate directly.

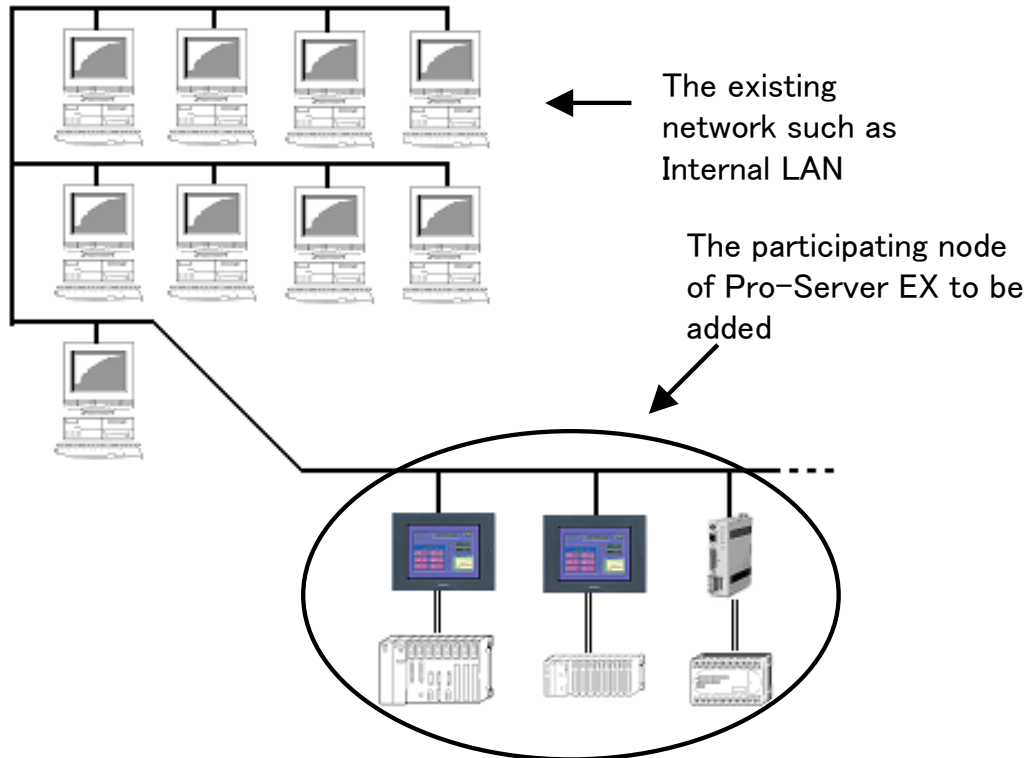
Note

When IP address of PC is setup, set the fixed IP address surely instead of "Auto acquisition".

Note

When network is constructed, check the following status surely.

Image figure



Enter the participating node of Pro-Server EX to existing LAN, or when there will be the possibility in the future, set up after surely checking the IP address and subnet mask which should be used to network administrators. Bad effect such as communication becomes impossible in entire network etc. may be reflected.

Moreover, when the device of the same IP address exists in a network, communication of not only the device of same address but the entire network may be affected.

Set individual IP address surely in each device.

Communication setup and the check method of a personal computer

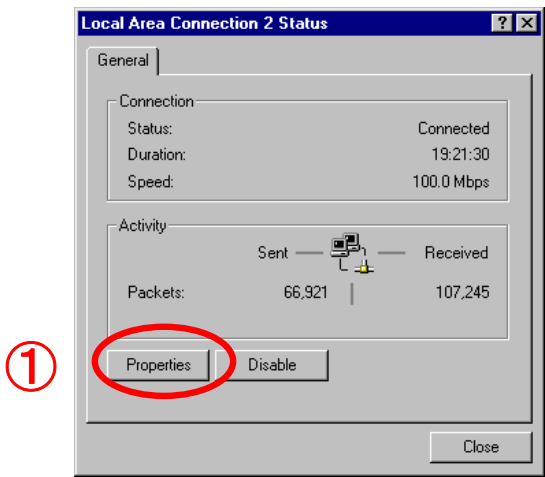
Here, setup of the IP address of a personal computer, and the method of an easy setting check are introduced.

(1) Set the IP address of a personal computer, and a subnet mask.

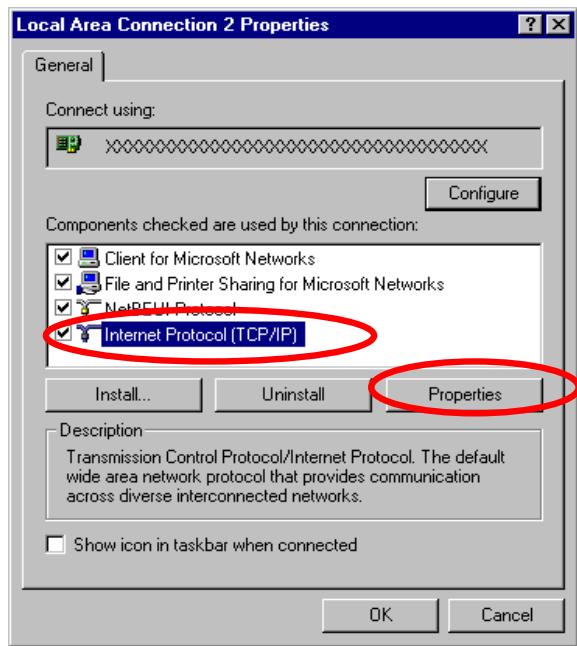


Click in sequence of
 My computer
 → Control panel
 → Network and dial-up connection
 → Local area connection

① If a right window is opened, click [Properties].

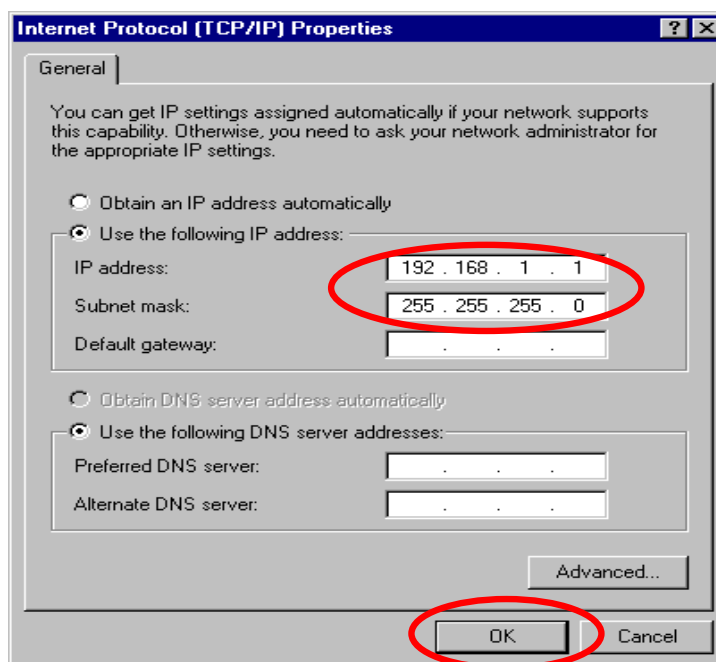


② Select the “Internet Protocol (TCP/IP)”.



③ Click the [Properties].

④ Enter the fixed IP address and subnet mask.



④

If "Obtain an IP address automatically" is selected, re-select "Use the following IP address", and input the fixed IP address and subnet mask . A default gateway is the address of a router. Input it only when communication is done exceeding the router. If input is completed, click [OK] and save contents which are set.

Note

When PC is connected with Internal LAN and it is considered as "Obtain IP address automatically", the problem may occur in communication of Pro-Server EX. Check the fixed IP address which can be used for network administrators.

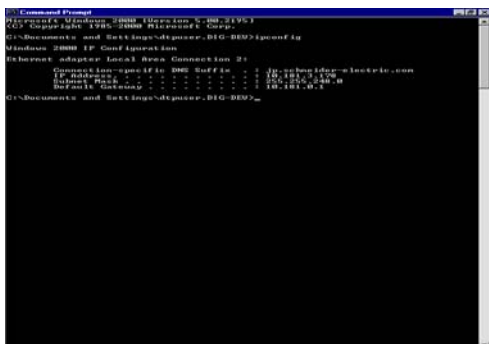
(2) Check the IP address of PC



Click start icon of Windows in lower left of the screen in the following sequence.

- All programs
- Accessories
- Command prompt

Command prompt



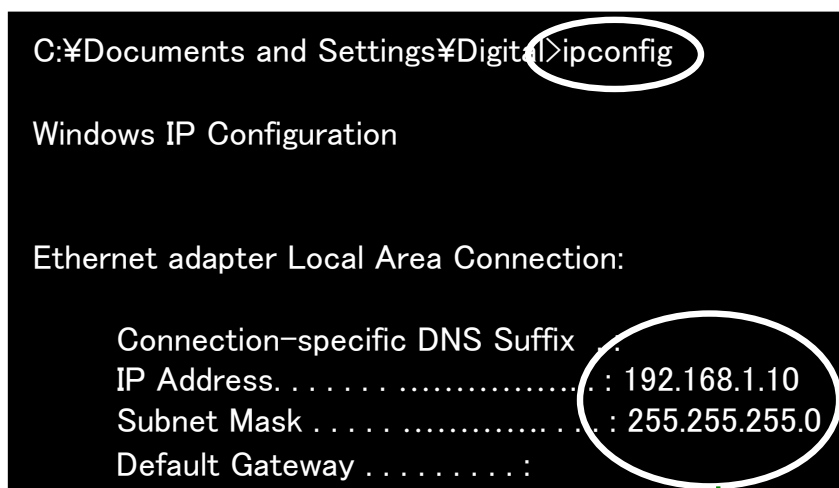
If left window is opened, enter the command as

ipconfig

in single byte from cursor's blinking position of white character and press [Enter].



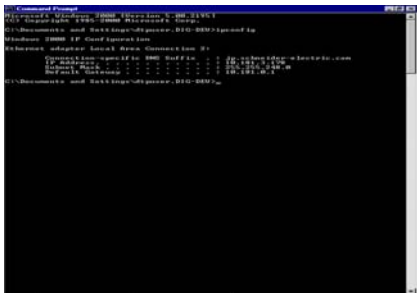
Example of display (Normal)



Here, the IP address and subnet mask which are set as the personal computer can be checked.

(3) Check the communication condition of a personal computer and a connection partner

Command prompt



Enter

ping ***.***.***.***

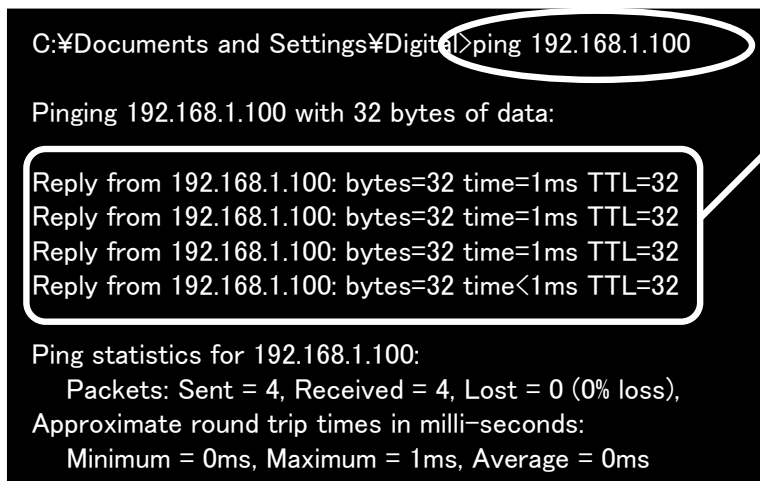
Space

IP address of partner's destination

In single byte from blinking position of cursor and press [ENTER] key.

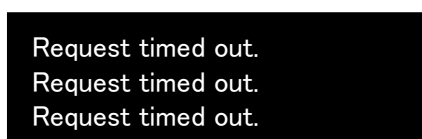


Example of a display (Normal)



Partner's IP address is recognized and communication is possible.

Example of a display (Abnormal)



Displayed when there is no reply received from the partner in given time span.
Check whether there is no power supply OFF in partner's side, cable is not pulled out, no wrong setting of address.

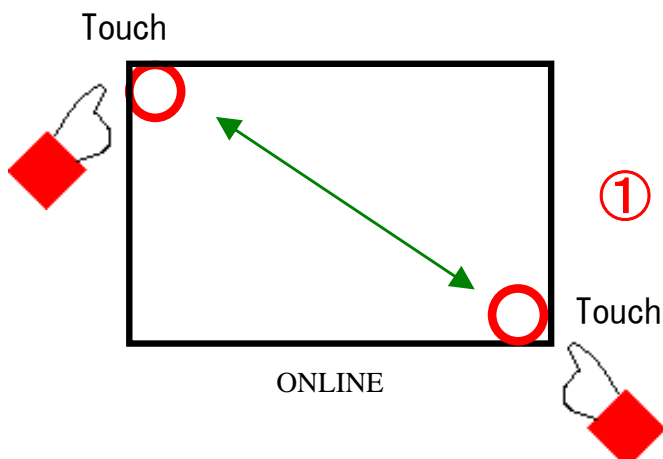
Other abnormal messages may come out according to the connection form of a network. Consult with network administrators.

Ethernet information setup of GP3000 series

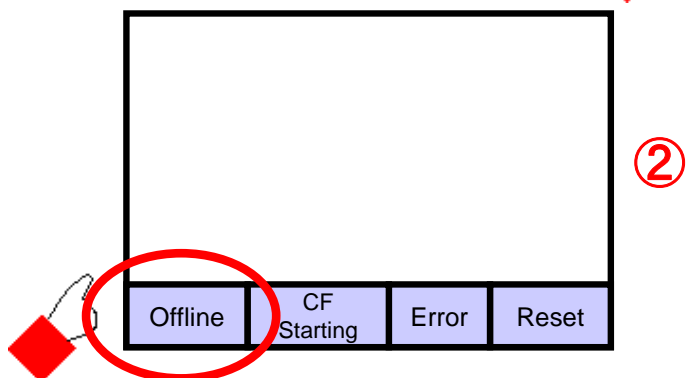
A setup of the Ethernet information for GP3000 series is performed from an off-line screen.

«Way of entry to offline screen»

① Two angles of the diagonal line of a screen (the upper left and the lower right or the upper right and the lower left) will touch alternately.

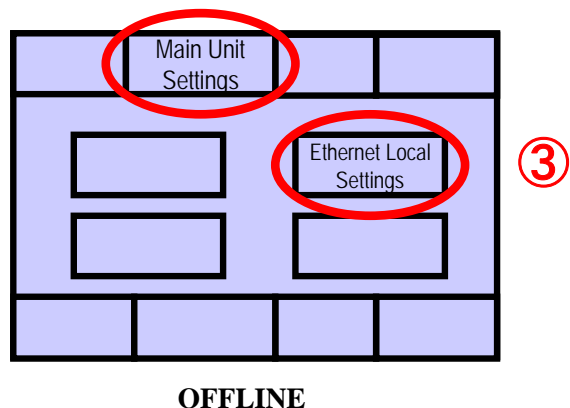


② If the gray belt is displayed, "Off-line" will be touched.

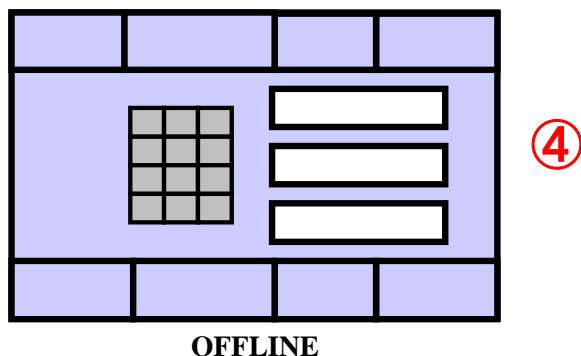


③ If it goes into an off-line screen, it will be touched as follows.

Main unit settings
↓
Ethernet settings



④ An IP address, a sub network, etc. will be set up from a touch keyboard on a right screen if needed.



 **One point**

What is port number ?

It is the identification number of the communication which is possessed by server software.

In Ethernet communication, if a communication partner is first specified by the IP address, it will be decided that with which server software in a partner's device exchanges it. In that case, a port number is used . In Pro-Server EX, 8000~8009 are used with initial value.

What is Gateway ?

The device which relays a signal at the point of contact of the network divided by the sub network is pointed out. It is also called a router.

If communication is done by exceeding participating node and router of other network, the IP address of router will be setup here.