

2.6 Network Configuration Patterns

2.6.1 Examples of user LAN setup patterns (typical examples)

There are the following patterns in setting up a user LAN to be connected to NACCS when User Internal Network is already provided with a user's unique IP address

(1) Pattern 1

Physically separate LAN for NACCS and User Internal Network

(2) Pattern 2

Switch all IP addresses on LAN for NACCS to the IP address system designated by NACCS Center

(3) Pattern 3

Separate LAN for NACCS and User Internal Network by setting up user router

(4) Pattern 4

Use 2 LAN cards (NIC) for computers connecting to NACCS

(5) Pattern 5

Create 2 logical subnets on 1 LAN by setting up user router corresponding to secondary IP

(1) Pattern 1

(A) User's current LAN setup

Simple LAN setup using a hub

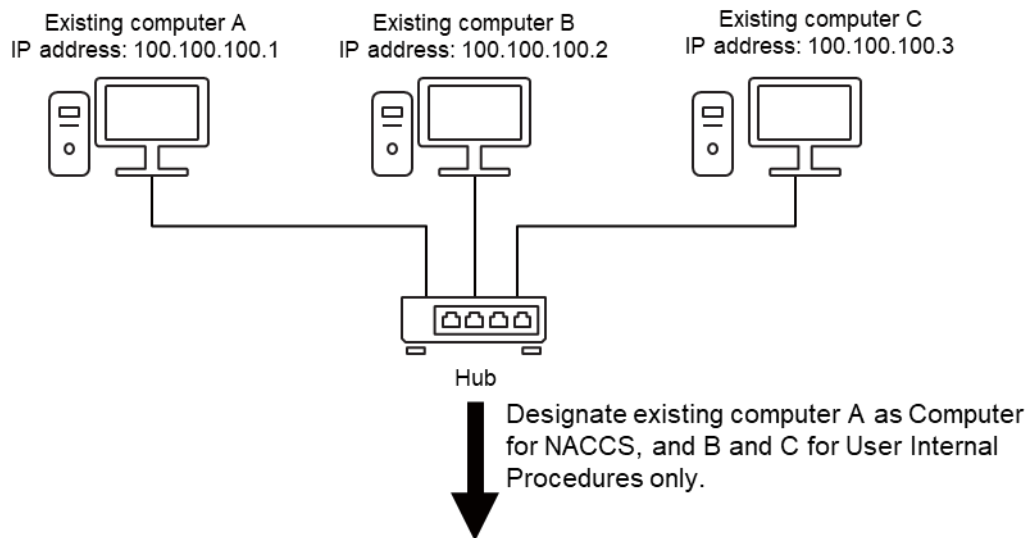


Figure 2.6.1 User's current LAN configuration (Pattern 1)

(B) New user LAN configuration

- 1) Set up a NACCS Connection Router designated by NACCS Center. NACCS Center assigns an IP address for setting up the router.
- 2) The user changes the IP address of existing computer A to a private IP address designated by NACCS Center.
- 3) As for existing computers B and C, the user changes the IP address in fields A to C to a private IP address designated by NACCS Center and sets an arbitrary value in Field D.

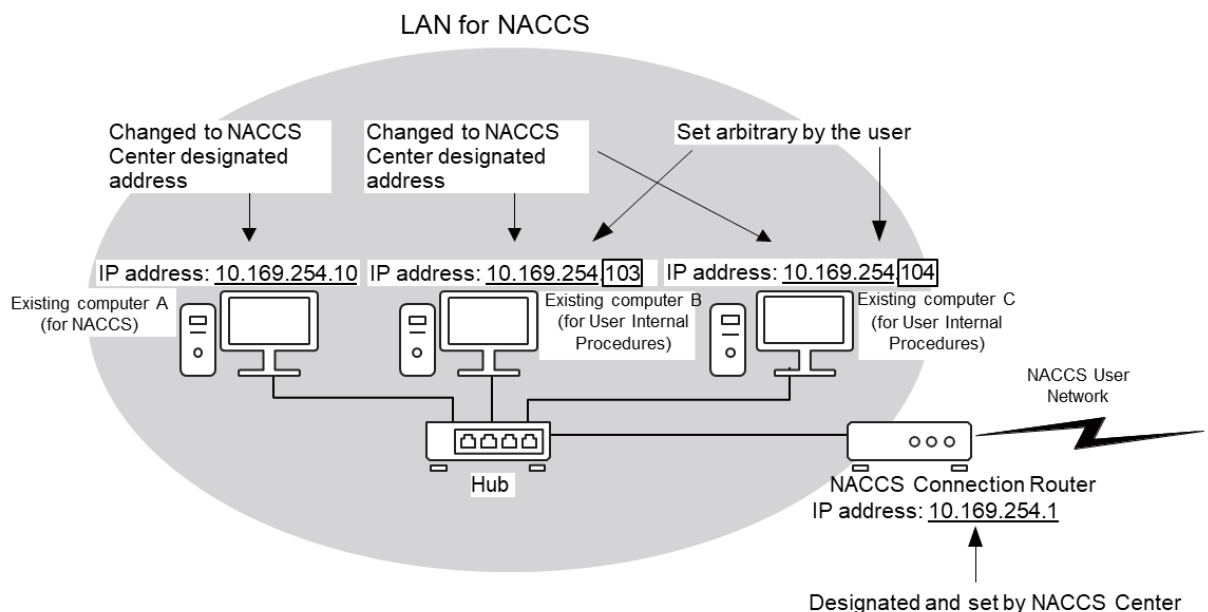


Figure 2.6.2 User's New LAN Configuration (Pattern1)

(2) Pattern 2

(A) User's current LAN configuration

Communication with an external network (LAN, WAN) using a user router that has a secondary IP feature

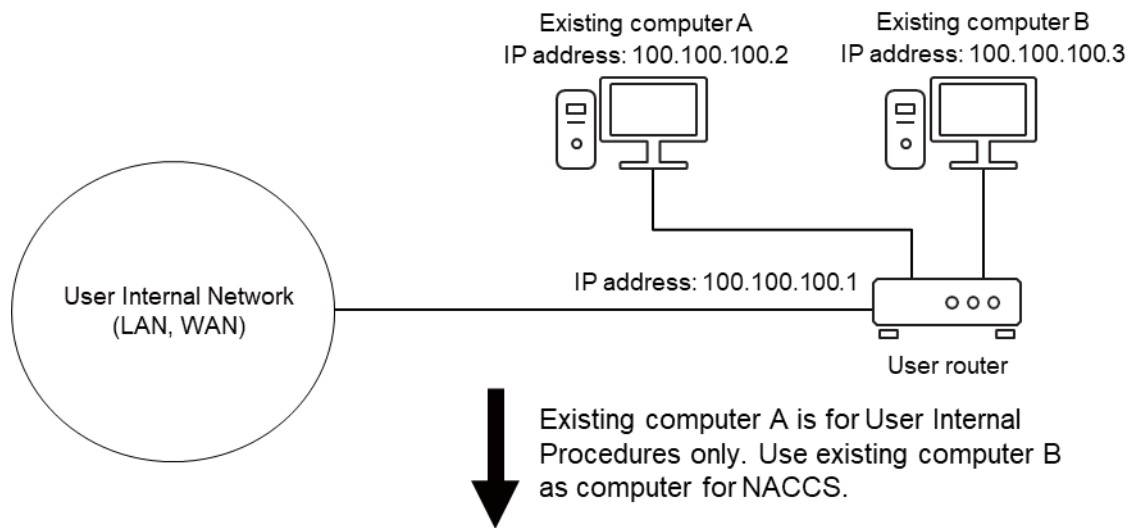


Figure 2.6.3 User's current LAN configuration (Pattern 2)

(B) User's new LAN configuration

- 1) Set up a NACCS Connection Router designated by NACCS Center. The Center assigns an IP address for setting up the router.
- 2) The user changes the IP address of the LAN connected to the computer for NACCS (existing computer B) to the NACCS IP address architecture.
- 3) The user changes the IP address of the NACCS user computer (existing computer B) to a private IP address designated by NACCS Center.
- 4) As for existing computer A and the user's router, the user changes the IP address in Fields A to C to a private IP address designated by NACCS Center and sets an arbitrary value in Field D.

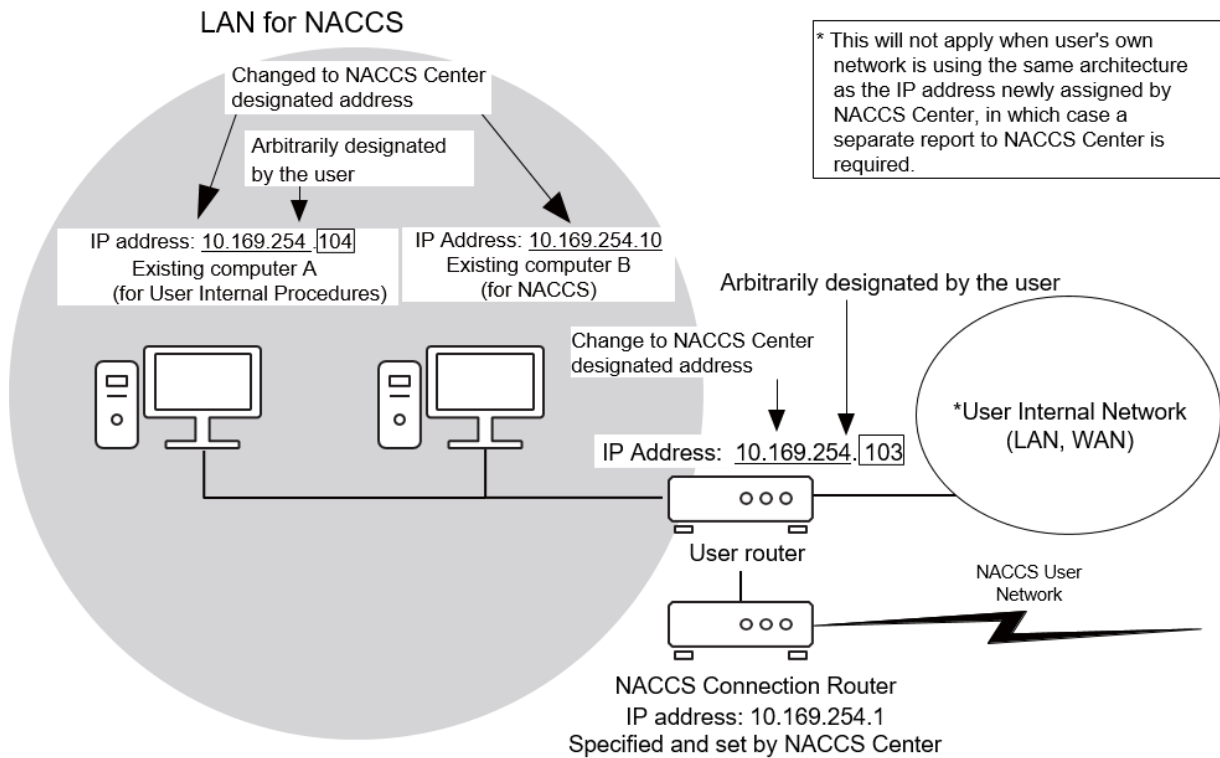


Figure 2.6.4 User's new LAN configuration (Pattern 2)

(3) Pattern 3

(A) User's current LAN configuration

Communication with an external network (LAN, WAN) using a user router that has a secondary IP feature

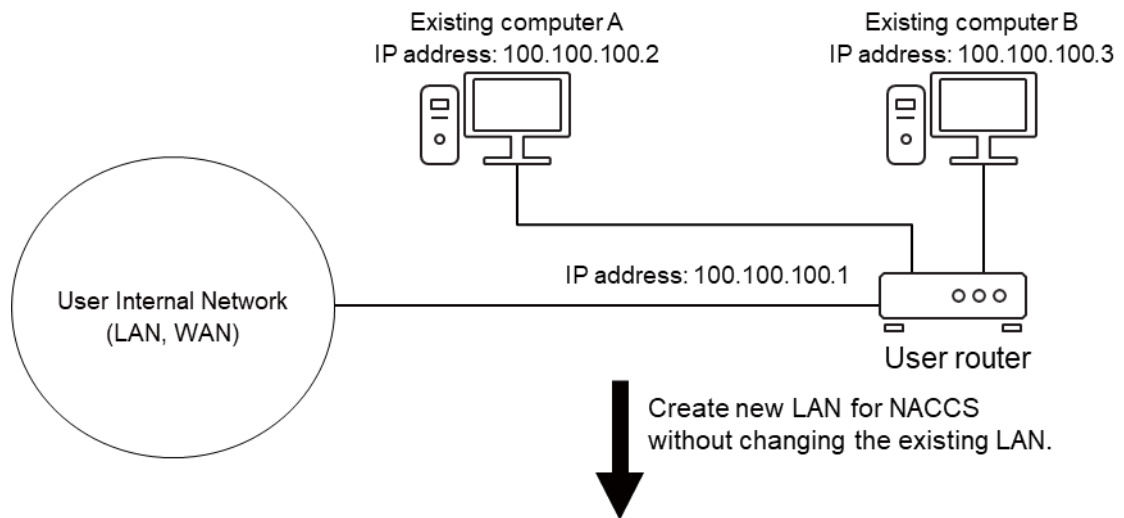


Figure 2.6.5 User's current LAN configuration (Pattern 3)

(B) The user's new LAN configuration

- 1) Set up the NACCS Connection Router designated by NACCS Center. NACCS Center assigns an IP address for setting up the router.
- 2) The user arranges a computer for NACCS, new hub, and new user router to connect to LAN for NACCS and sets a private IP address designated by NACCS Center for the new user router and a computer for NACCS.
- 3) Connect the user's new LAN and existing LAN with new user router. This requires no change in the IP address architecture of the user's existing LAN.

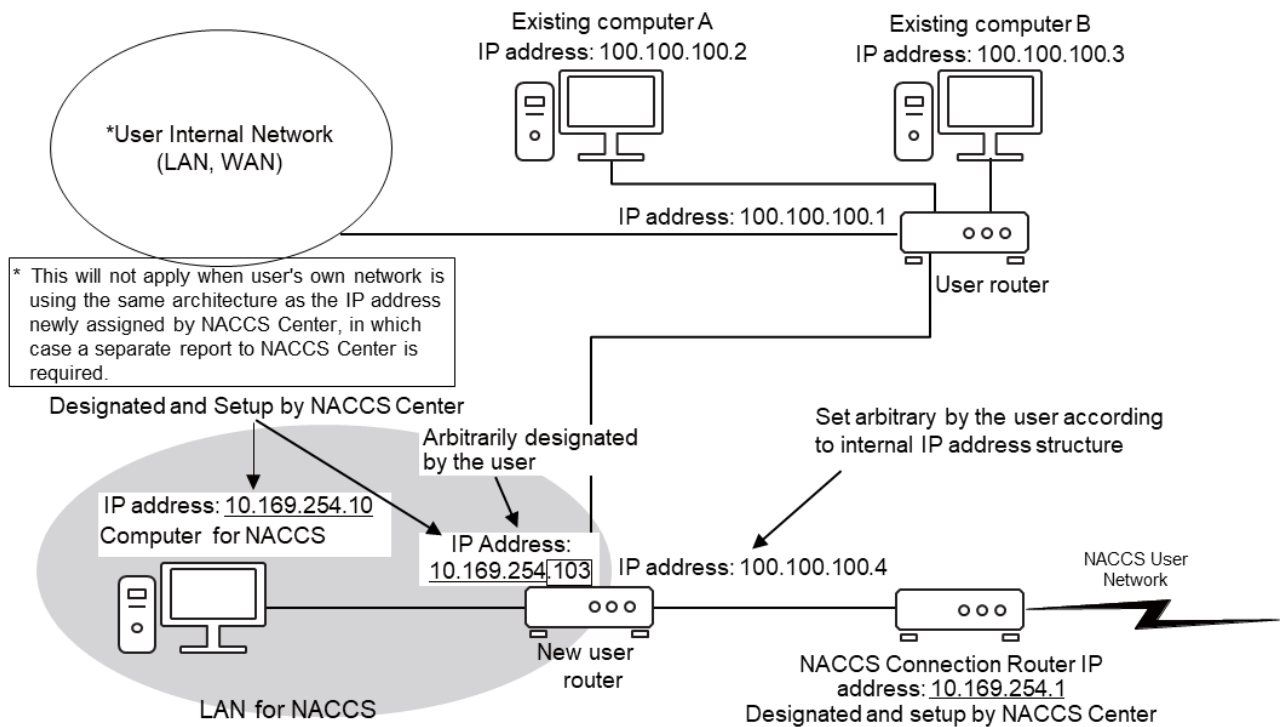


Figure 2.6.6 User's new LAN configuration (Pattern 3)

(4) Pattern 4

(A) The user's current LAN configuration

Communication with an external network (LAN, WAN) using a user router that has a secondary IP feature

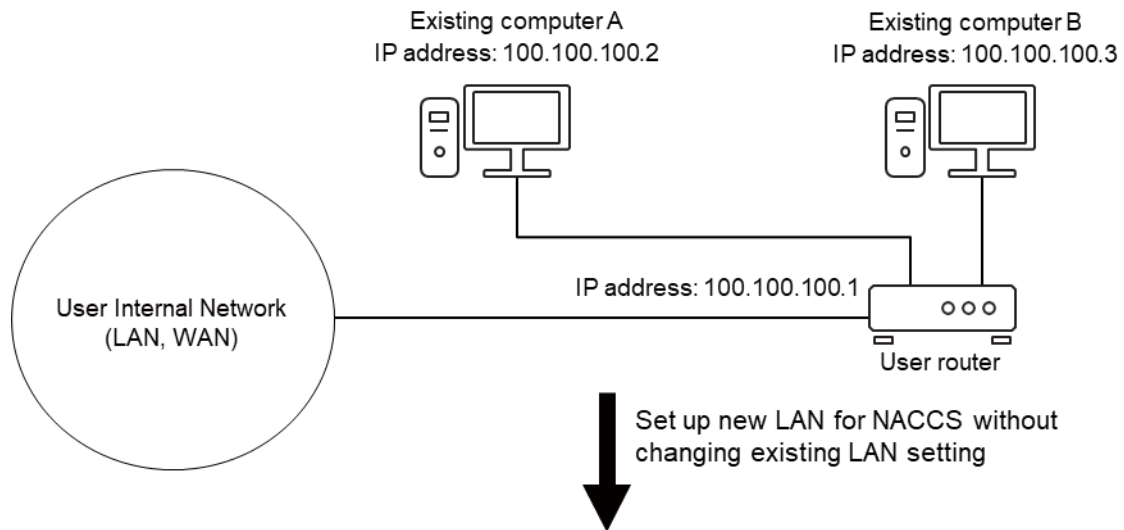


Figure 2.6.7 User's current LAN configuration (Pattern 4)

(B) The user's new LAN configuration

- 1) Set up the NACCS Connection Router designated by NACCS Center. NACCS Center assigns an IP address for setting up the router.
- 2) Set up a new hub to build LAN for NACCS, and insert the LAN card (NIC) for using NACCS into the existing computer. The user sets up a private IP address designated by NACCS Center for the newly inserted LAN card.
- 3) Connect the newly inserted LAN card and NACCS Connection Router via the new hub.
- 4) It is not necessary to change the IP address structure of the user's existing LAN.

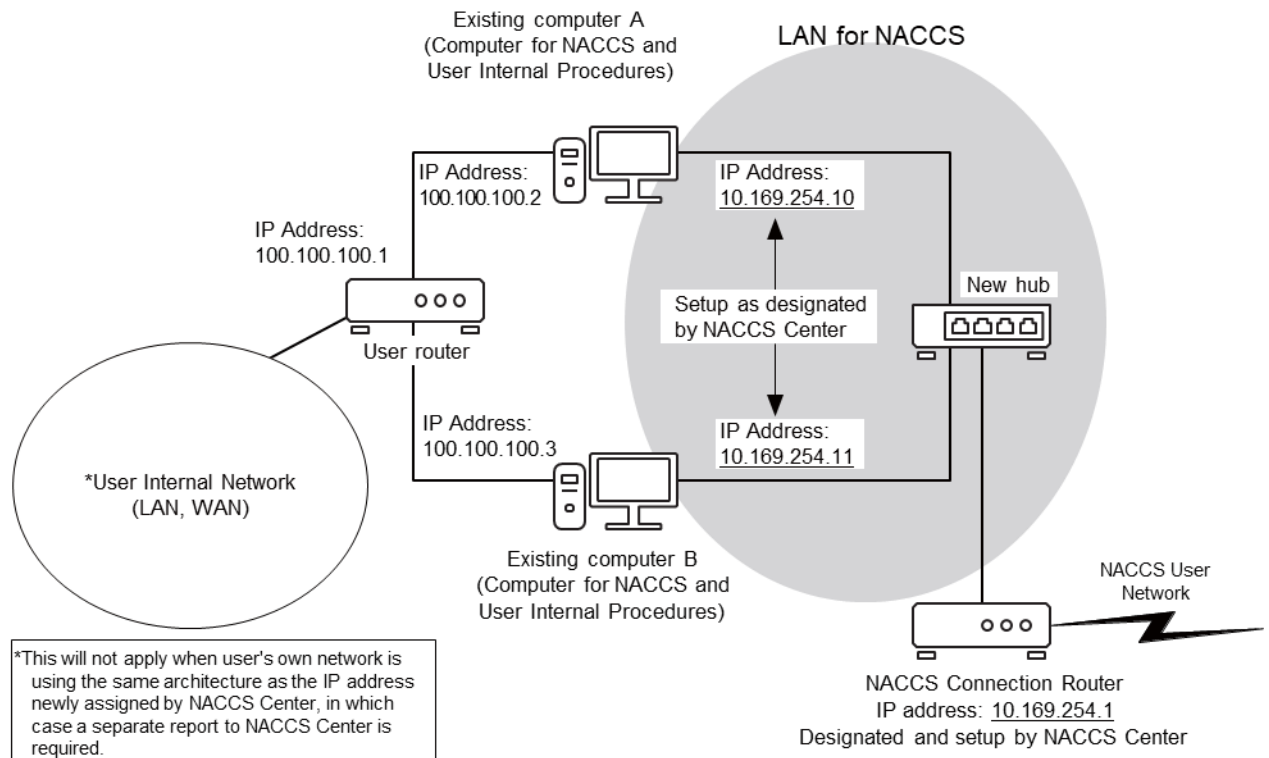


Figure 2.6.8 User's new LAN configuration (Pattern 4)

(5) Pattern 5

(A) The user's current LAN configuration

Communication with network external LAN for NACCS (LAN, WAN) using user router supporting secondary IP function

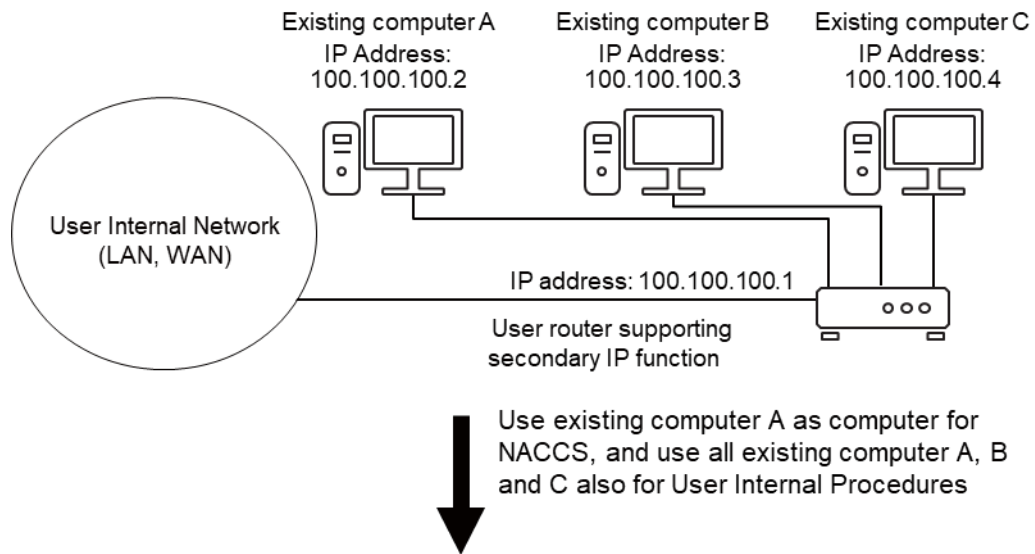


Figure 2.6.9 User's current LAN configuration (Pattern 5)

(B) The user's new LAN configuration

- 1) Set up a NACCS Connection Router designated by NACCS Center. NACCS Center assigns an IP address for setting up the router.
- 2) Set up a network address designated by NACCS Center as the secondary address for the user router supporting the secondary IP functionality (capable of setting up multiple logical subnets on a single physical port).
- 3) Use the user router as a default gateway and set routing information for NACCS to static.
- 4) Set a private IP address designated by NACCS Center for the computer for NACCS.

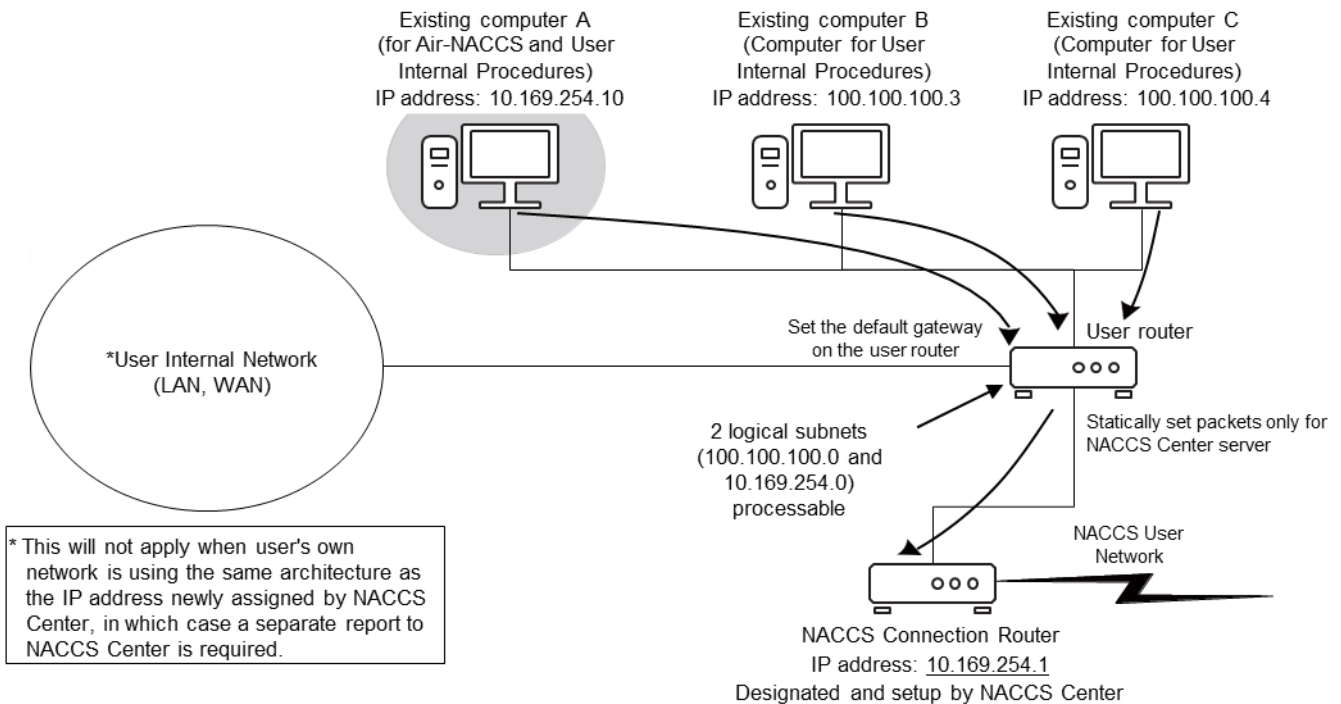


Figure 2.6.10 User's new LAN configuration (Pattern 5)

<Supplementary>

<Precautions>

NACCS Connection Routers do not exchange routing information with other routers. Users connecting LAN for NACCS and their User Internal Network must set to static routing information for the user router which is a gateway for their User Internal Network and set the user router to a default gateway setting for computers within LAN for NACCS.

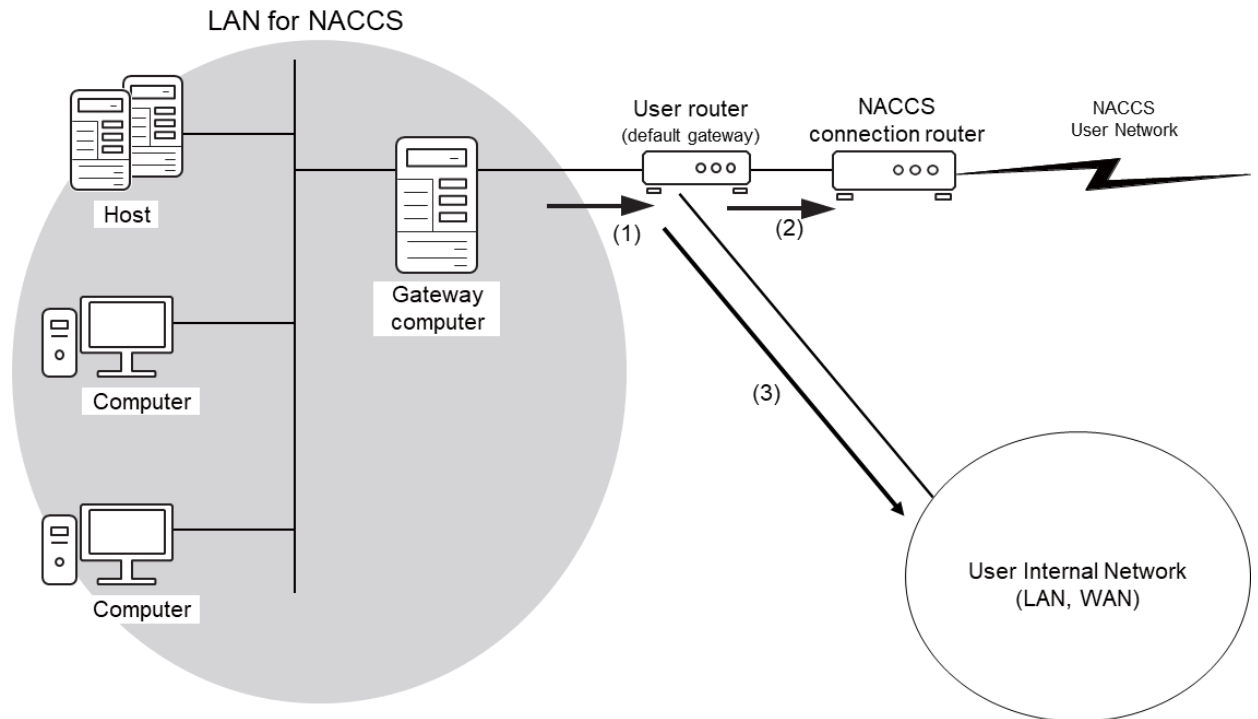


Figure 2.6.11 Setting the user router's routing information

- (1) A message (data) sent by the user is transmitted from LAN for NACCS to the user router set as the default gateway.
- (2) When a message (data) addressed to NACCS is transmitted by the user, it will be directed to the NACCS Connection Router in the user router based on the routing information set to static and then transmitted from the NACCS Connection Router to the NACCS User Network.
- (3) When a message (data) addressed to User Internal Network is transmitted by the user, it will be transmitted from the user router to User Internal Network.

2.6.2 Example of connecting with Interactive Processing Mode (netNACCS)

(1) When connecting to the Internet via an internal firewall

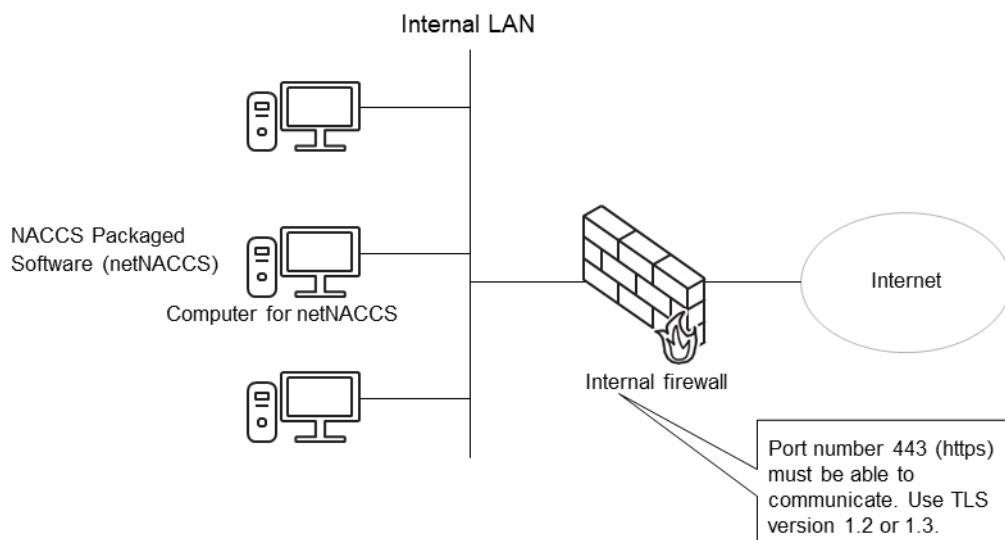


Figure 2.6.12 Example of connecting to the Internet through an internal firewall

(2) When NACCS Packaged Software (netNACCS) and NACCS Packaged Software (Interactive Processing Mode) are used together

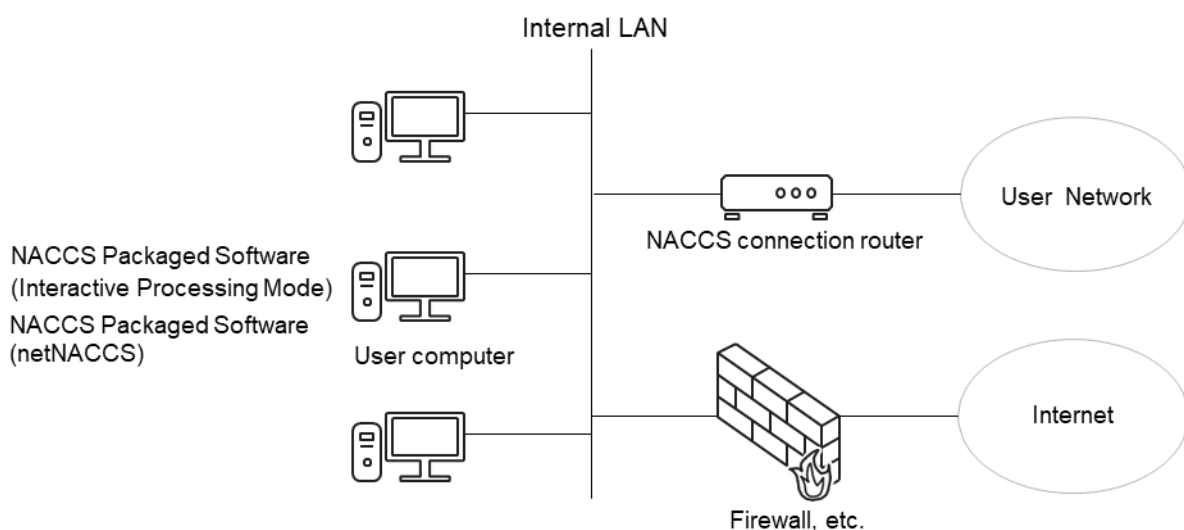


Figure 2.6.13 Example of when NACCS Packaged Software (netNACCS) and NACCS Packaged Software (Interactive Processing Mode) are used together

(Note 1) It is possible to install NACCS Packaged Software (netNACCS) and NACCS Packaged Software (Interactive Processing Mode) on one computer, but it is not possible to start and use both software at the same time.

(Note 2) When using NACCS Packaged Software (Interactive Processing Mode) with the NACCS Packaged Software (netNACCS) together, refer to “7.3.4 Security standards for connections to external networks”.

2.6.3 Example of connecting with WebNACCS Processing Mode

(1) When WebNACCS Processing Mode and NACCS Packaged Software (netNACCS) are used together

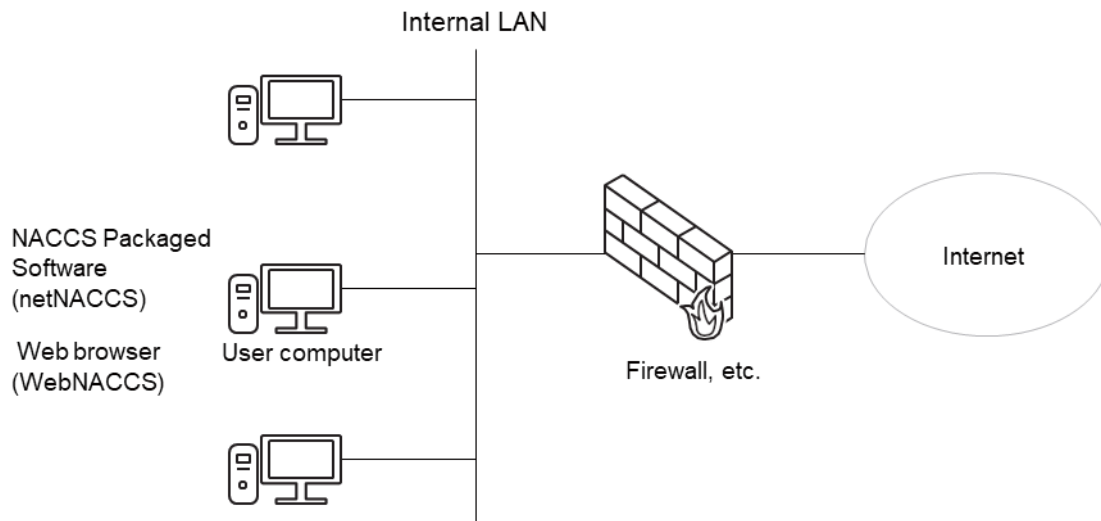


Figure 2.6.14 Example of when WebNACCS Processing Mode and NACCS Packaged Software (netNACCS) are used together

(2) When connecting to the Internet via an internal firewall

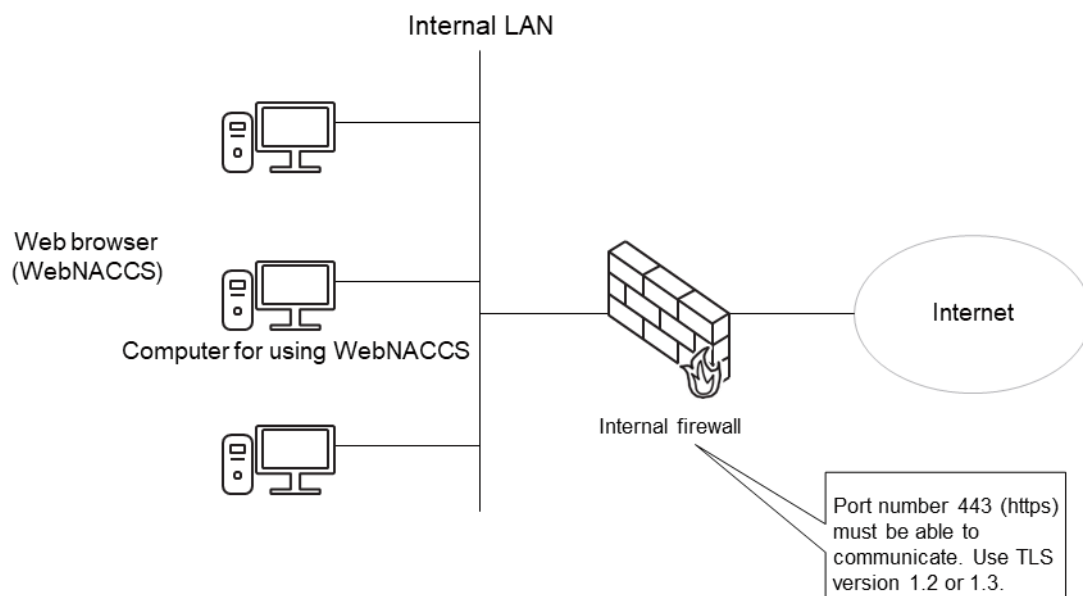


Figure 2.6.15 Example of connecting to the Internet via an internal firewall

2.6.4 Concrete examples of system configurations

(1) Case1: Concrete example of case where multiple computers are used (router connection)

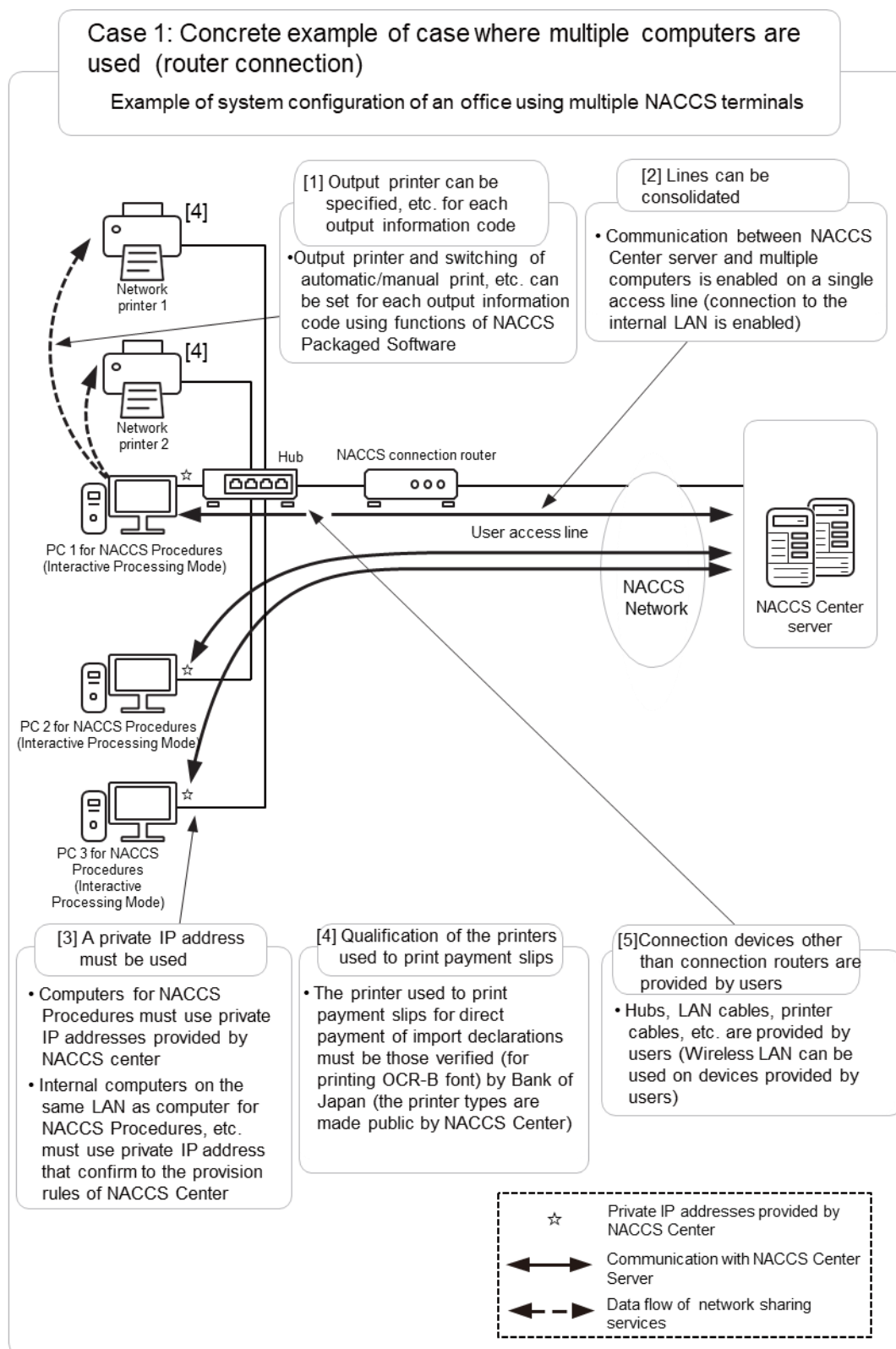


Figure 2.6.16 Concrete example of case where multiple computers are used (router connection)

(2) Case2: Concrete example of case where Server for User Internal Procedures is used (router connection)

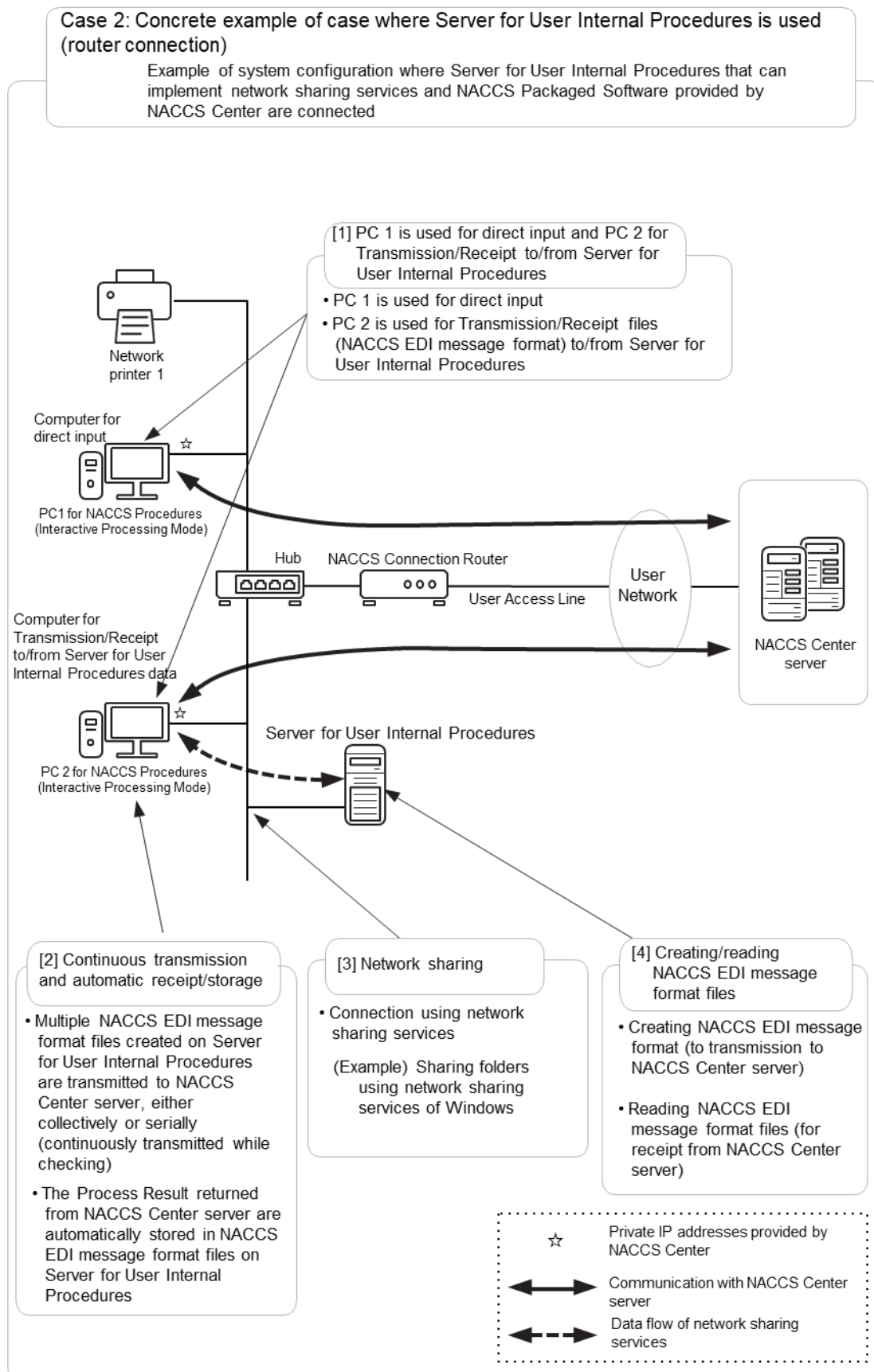


Figure 2.6.17 Concrete example of case where Server for User Internal Procedures is used (router connection)

(3) Case 3: Concrete example of case where User Internal Network is used from computers for NACCS Procedures (router connection)

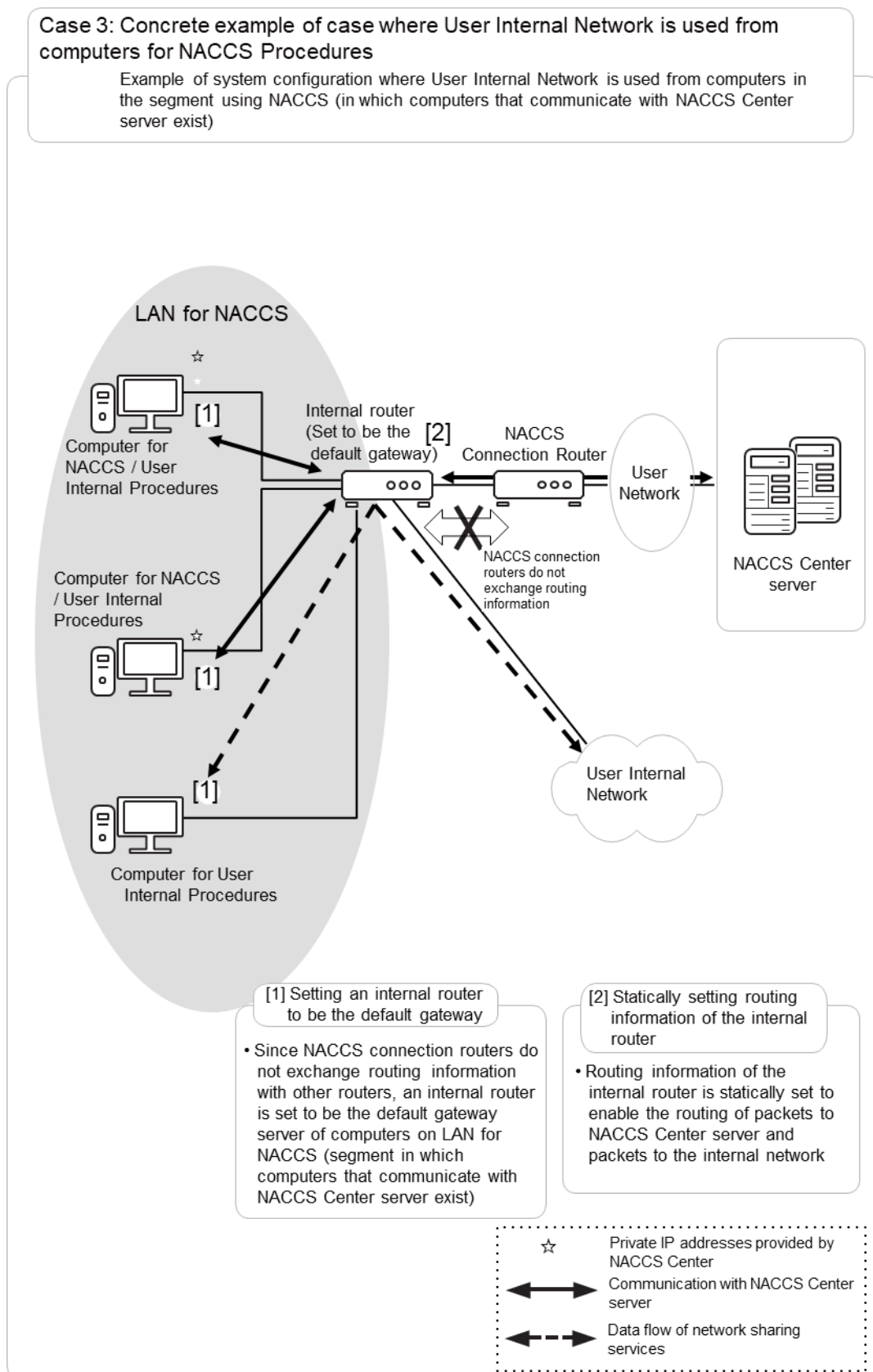


Figure 2.6.18 Concrete example of a case where User Internal Network is used from computers for NACCS Procedures (router connection)

(4) Case4: Using different Connection Modes on the same communication line

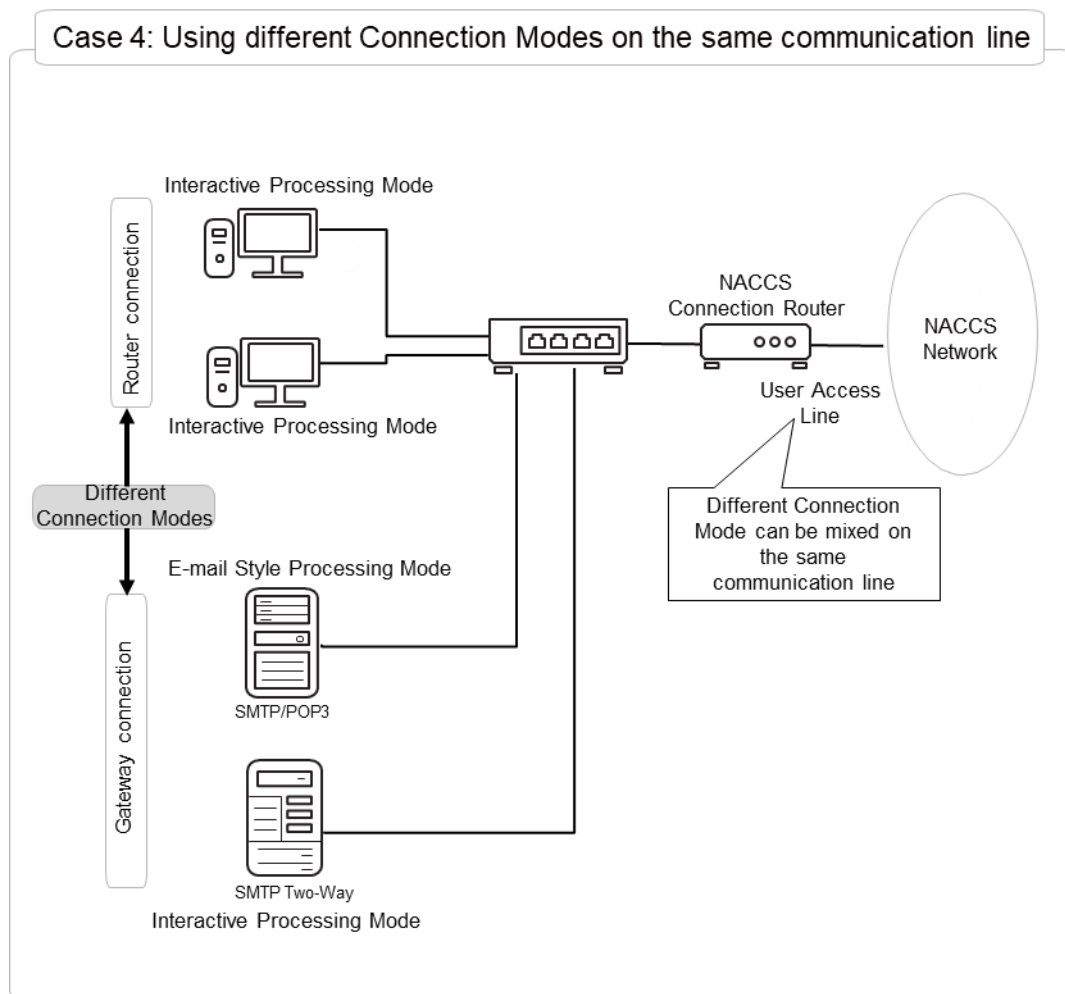


Figure 2.6.19 Using two different Data Transmission/Receipt Processing Modes and different Connection Modes on the same communication line

(5) Case 5: Configuration example when user system uses the cloud

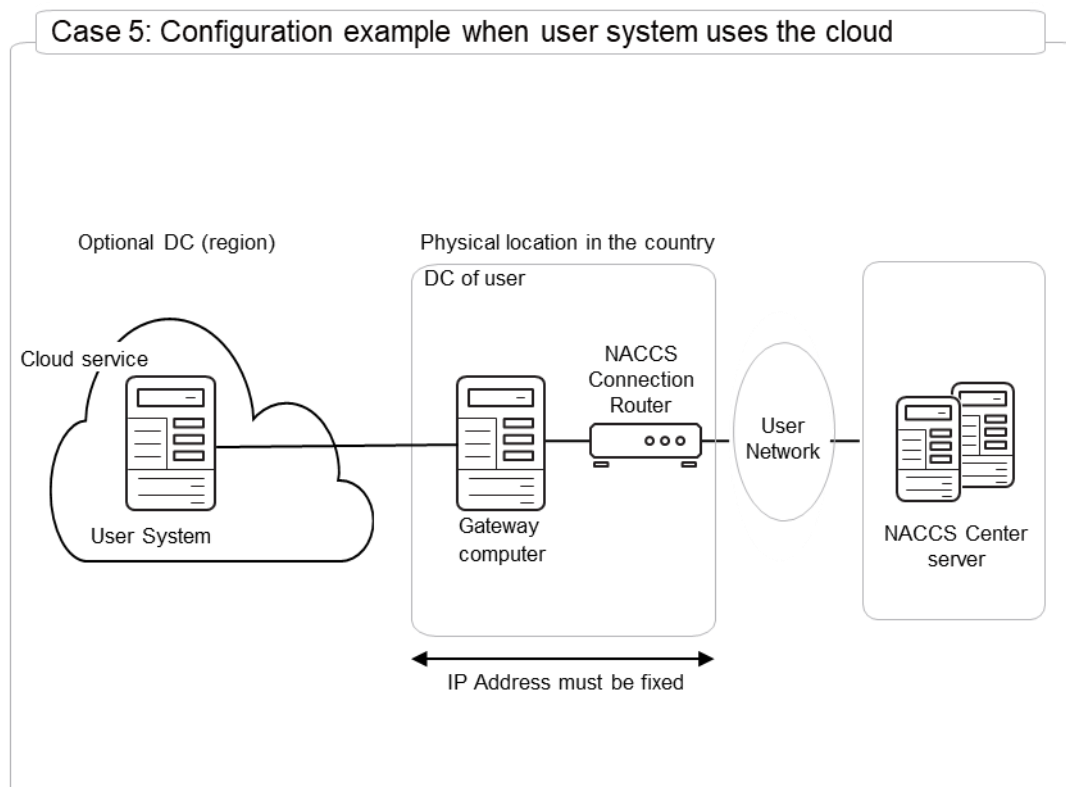


Figure 2.6.20 Configuration example when user system uses the cloud

(6) Supplementary: Precautions on connection with external networks (internet, etc.)

Supplementary: Precautions on connection with external networks (internet, etc.)

In NACCS, a mechanism to disable access to computers on the Lan for NACCS from external networks when connecting to external networks (internet, etc.) needs to be implemented by deploying firewalls, etc. in user systems. See “7. Security Measures” for the details.

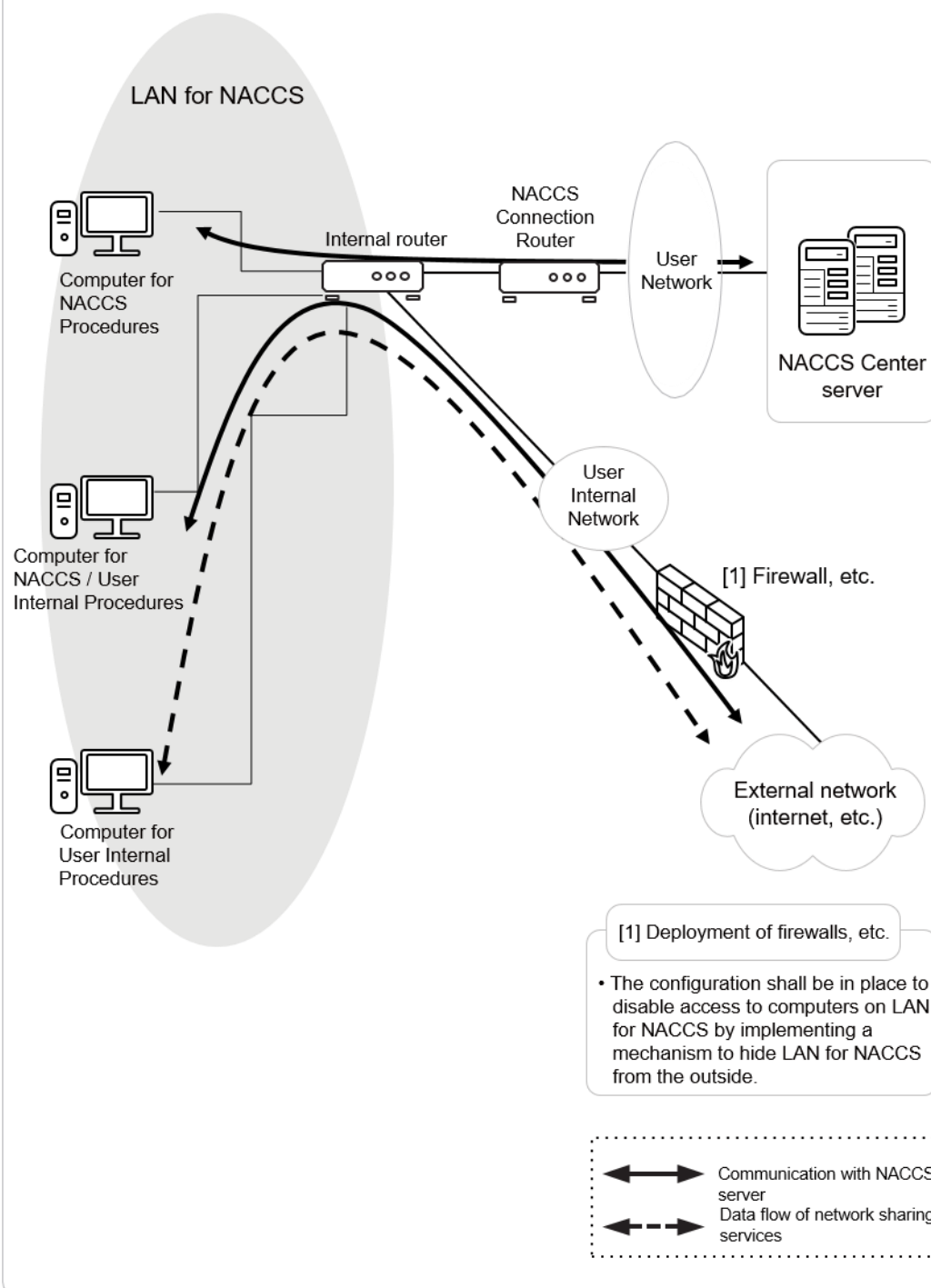


Figure 2.6.21 Precautions on connection with external networks (internet, etc.)