UNIVERGE SV9500

FP95-115 V5

System Description

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ISSUE 8.0

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TABLE OF CONTENTS

Page

TABLE OF CONTENTS (CONTINUED)

CHAPTER 1
INTRODUCTION

1. Overview and Usage of Manuals

1.1. Overview

This section provides an overview of the SV9500 documentation set.

Note: In the following manuals, the contents regarding Prepackaged Server Model also includes Software Model:

- Data Programming Manual
- PCPro Setup Manual
- Command Manual
- Operations and Maintenance Manual
- UMGi Configuration and Maintenance Guide
- Geographic Redundancy Configuration Manual

Category	Manual Name	Manual Description
Installation (Setup)		
	Safety Precautions and Regulatory Notices	Safety Precautions provides information on Product Liability and Legal Restraints of SV9500 system installation and operation. Use this product after reading and understanding this manual.
	System Description	System Description provides information on devices that can be used in the SV9500 system and information on how to use manuals in the SV9500 documentation set.
	Appliance Model Installation Manual	Appliance Model Installation Manual explains the procedures to install and start the system (SV9500 Appliance Model). This manual also describes program version upgrade procedures.
	Software Model Installation Manual **Note 3**	Software Model Installation Manual explains the procedures to install and start the virtual system (SV9500 Software Model).
	Prepackaged Server Model Installation and Operation Manual	Prepackaged Server Model Installation and Operation Manual explains the procedures to install and start the system (SV9500 Prepackaged Server Model). This manual also describes limitations and operating and management procedures.
	Circuit Card Description	Circuit Card Description provides information on the switch settings and the details of the circuit cards mounted in the PIR (7U/8U) and the Telephony Server.
	Peripheral Equipment Description (Digital/Analog Devices)	Peripheral Equipment Description (Digital/Analog Devices) explains how to configure and connect the devices that can be used when a PIR, EMA card, or IOC card is mounted.
	Peripheral Equipment Description (IP Devices)	Peripheral Equipment Description (IP Devices) explains how to configure and connect a gateway and other devices.
	Peripheral Equipment Description (Multi-Line Telephone)	Peripheral Equipment Description (Multi-Line Telephone) explains how to configure and connect Multi-Line Telephones.
	Peripheral Equipment Description (UG50)	Peripheral Equipment Description (UG50) explains how to install a UG50 and how to setup and connect the system using a UG50.

Category	Manual Name	Manual Description
	Software Model Peripheral Equipment Description **Note 3**	Software Model Peripheral Equipment Description explains how to configure and connect virtual peripheral equipment.
	Migration Guide	Migration Guide provides information on the migration procedures from previous systems to SV9500 system.
	UMGi Configuration and Maintenance Guide **Note 2**	UMGi Configuration and Maintenance Guide explains the installation procedures to install and start UMGi. This manual also describes limitations and operating and management procedures.
	Configuration and Maintenance Guide for Remote Node over IP **Note 1**	Configuration and Maintenance Guide for Remote Node over IP explains the installation procedures to install and start Remote Node over IP. This manual also describes limitations and operating and management procedures.
	Geographic Redundancy Configuration Manual **Note 2**	Geographic Redundancy Configuration Manual explains how to use the geographic redundancy feature.
Data Programming		
	Data Programming Manual - Business	Data Programming Manual - Business provides general description, service conditions, and data assignment of Business features.
	Data Programming Manual - CCIS	Data Programming Manual - CCIS provides general description, service conditions, and data assignment of CCIS features.
	Data Programming Manual - ISDN	Data Programming Manual - ISDN provides general descriptions, service conditions, and data assignment of ISDN features.
	Data Programming Manual - Hotel	Data Programming Manual - Hotel provides general description, service conditions, and data assignment of Hotel features.
	Data Programming Manual - Wireless-PHS	Data Programming Manual - Wireless-PHS provides general description, service conditions, and data assignment of Wireless-PHS features.
	Data Programming Manual - Wireless-PCS	Data Programming Manual - Wireless-PCS provides general description, service conditions, and data assignment of Wireless-PCS features.
	Data Programming Manual - ACD	Data Programming Manual - ACD provides general description, service conditions, and data assignment of ACD features.
	Data Programming Manual - OAI	Data Programming Manual - OAI provides general description, service conditions, and data assignment of OAI features.
	Data Programming Manual - FCCS	Data Programming Manual - FCCS provides general description, service conditions, and data assignment of FCCS features.
	Data Programming Manual - MFC	Data Programming Manual - MFC provides general description, service conditions, and data assignment of services features concerning MFC Signaling.
Operations & Maintenance		
	PCPro Setup Manual	PCPro Setup Manual provides an overview and the setup procedures of application tools which are required for data assignment.
	Command Manual	Command Manual provides the information on various commands which are used to assign office data.

Category	Manual Name	Manual Description
	Operations and Maintenance Manual	Operations and Maintenance Manual describes routine system maintenance procedures and fault repair procedures. This manual also includes the system configuration and precautions pertaining to the maintenance jobs.

Note 1: UMGi has taken over Remote Node over IP since FP95-112 V2. If you have Telephony Server with FP95-112 V2 or later and need information on Remote Node over IP, see UMGi Configuration and Maintenance Guide.

Note 2: This manual is available since FP95-112 V2.

Note 3: This manual is available since FP95-114 V4.

1.2. How to Use System Description

(a) Common usage

(1) When there are several items for the same equipment type, peripheral equipment is indicated using generic terms in this manual. Refer to 2. Terms in Manuals in Chapter 2 for generic terms of peripheral equipment.

(2) The figures of the system configuration for each item in this manual are generally based on the SV9500 Appliance Model.

Terminology in this manual

Major Item	Intermediate Item	Minor Item	Remarks
SV9500/Telephony Server	SV9500 Appliance Model	Appliance Model	This model is a hardware version of SV9500. The entire system includes SV9500(CPU) main body, PIR, etc.
	SV9500 Software Model	Software Model	This model is an SV9500 operating in a virtual machine.
	SV9500 Prepackaged Server Model	Prepackaged Server Model	This model is an SV9500 operating in a virtual machine that is pre-installed in a designated server. HDD, CPU, memory and other components are in single (non-redundant) configuration.
		Prepackaged FT Server Model	This model is an SV9500 operating in a virtual machine that is pre-installed in a designated server. HDD, CPU, memory and other components are in dual (redundant) configuration.

(3) Be sure to use the latest firmware version for any peripheral equipment that is being used for services described in the Data Programming Manual.

(4) The following manuals cover SV9500 Appliance Model, SV9500 Software Model and SV9500 Prepackaged Server Model. Refer to the relevant manual for each model. The manuals covering all the models provide general information about the SV9500 system and specific information related to each model. Note that the model-specific details are described separately.

X: Applicable, N: Not applicable

Related Manual Name	SV9500 Appliance Model	SV9500 Software Model	SV9500 Prepackaged Server Model
Safety Precautions and Regulatory Notices	X	X	X
System Description	X	X	X
Appliance Model Installation Manual	X	N	N
Software Model Installation Manual	N	X	N

Related Manual Name	SV9500 Appliance Model	SV9500 Software Model	SV9500 Prepackaged Server Model
Prepackaged Server Model Installation and Operation Manual	N	N	X
Circuit Card Description	X	N	N
Peripheral Equipment Description (Digital/Analog Devices)	X	N	N
Peripheral Equipment Description (IP Devices)	X	X	X
Peripheral Equipment Description (Multi-Line Telephone)	X	X	X
Peripheral Equipment Description (UG50)	X	X	X
Software Model Peripheral Equipment Description	X	X	X
Migration Guide	X	N	N
UMGi Configuration and Maintenance Guide	X	N	X
Configuration and Maintenance Guide for Remote Node over IP	X	N	X
Geographic Redundancy Configuration Manual	X	N	X
Data Programming Manual	X	X	X
PCPro Setup Manual	X	X	X
Command Manual	X	X	X
Operations and Maintenance Manual	X	X	X

(b) SV9500 Appliance Model

(1) Information on whether the devices and the terminals can be used after migrating to SV9500 Appliance Model is listed in this manual on 3. New/Migration List for Peripheral Equipment in Chapter 2.

(2) Detailed information on the circuit cards accommodated in SV9500 Appliance Model is described in the Circuit Card Description.

(3) When circuit cards with an equivalent function are provided for both PIR (7U) and PIR (8U), generic terms are used to identify these cards (for example, ELC card).

(4) All the office data assignment stated in the Data Programming Manuals must be performed using PCPro unless otherwise specified. Refer to “Connection Between PCPro and Telephony Server” in PCPro Setup Manual for the procedure on how to log into PCPro.

Note: Initial data assignments listed below are required first before using PCPro to assign other data to SV9500 Appliance Model.
- Time setting with ANTPL or ATIM command
- ASYD/ASYDL/ASYDN command
- AUNT command

Note: The data assigned by the ADSLN command must be all deleted before assigning the ADSL command. Otherwise, an “Input error” might occur.

(5) If you use PCPro Tools that is bundled with SV9500 PCPro to manage data in the CF card of SV8500, refer to PCPro Setup Manual for SV8500. For operating conditions, refer to "2. Operating Environments and Conditions" in PCPro Setup Manual for SV9500.

(c) SV9500 Software Model and SV9500 Prepackaged Server Model

(1) The statements related to the system changeover (CPU, TSW, PLO) are not applicable to SV9500 Software Model and SV9500 Prepackaged Server Model because they do not support a dual configuration.

(2) The term "CF card" must be replaced with "HDD" since SV9500 Software Model and SV9500 Prepackaged Server Model do not support CF cards.

(3) The statements related to PIR (except for the virtual PIR) and circuit cards are not applicable to SV9500 Software Model and SV9500 Prepackaged Server Model because they support only a full IP configuration.

2. Reference Method for Manuals

This section explains the reference method for the manuals. It provides lists and charts showing which manual to refer to at each process stage from installing the components of SV9500 Appliance Model, SV9500 Software Model and SV9500 Prepackaged Server Model for the maintenance of the system.

2.1. SV9500 Appliance Model

2.1.1. Manual Reference

The manuals to refer to for instructions and procedures required at each process are listed below:

[1] Installation and Device Setup

- System Description
- Appliance Model Installation Manual
- Circuit Card Description
- Peripheral Equipment Description (Digital/Analog Devices)
- Peripheral Equipment Description (IP Devices)
- Peripheral Equipment Description (Multi-Line Telephone)
- Peripheral Equipment Description (UG50)
- Software Model Peripheral Equipment Description
- Migration Guide

[2] System Startup and Preparation

- Appliance Model Installation Manual
- PCPro Setup Manual
- Migration Guide
- UMGi Configuration and Maintenance Guide
- Geographic Redundancy Configuration Manual

[3] Basic Office Data Assignment

- Data Programming Manuals
- Circuit Card Description
- Peripheral Equipment Description (Digital/Analog Devices)
- Peripheral Equipment Description (IP Devices)
- Peripheral Equipment Description (Multi-Line Telephone)
- Peripheral Equipment Description (UG50)
- Software Model Peripheral Equipment Description
- Command Manual

[4] Data Assignment for each Service Feature

- Data Programming Manuals
- Command Manual

[5] Operations and Maintenance

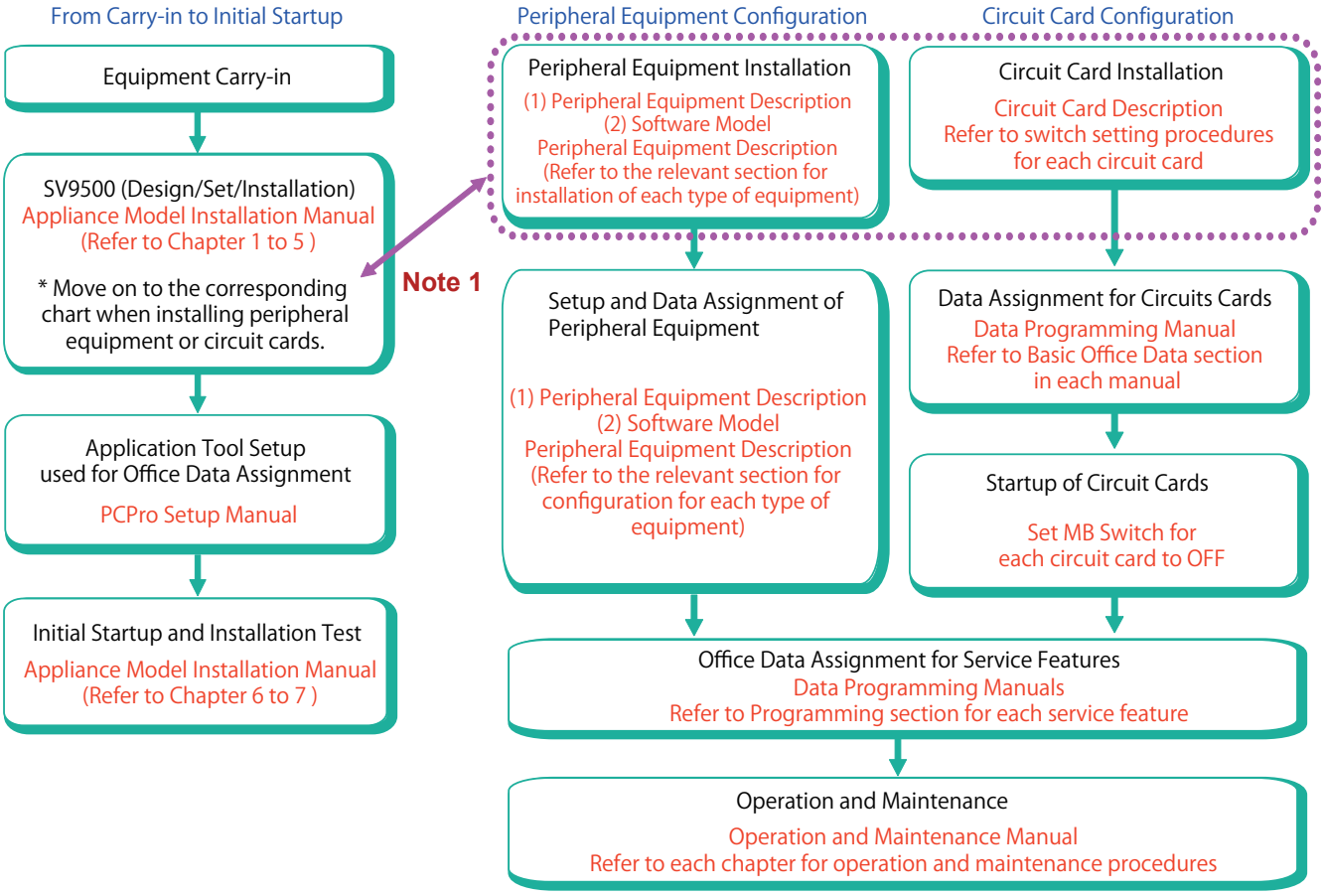
- Operations and Maintenance Manual
- Command Manual
- Appliance Model Installation Manual
- UMGi Configuration and Maintenance Guide

Refer to each manual for detailed information of contents.

2.1.2. Work Flow Chart

The chart below shows the work flow from carrying in the components, initial startup of SV9500 Appliance Model, setup for each device, to operation and maintenance.

See "2.1.3. Manual Reference Procedures for Each Process" for detailed procedures and cross reference information.



Note 1: When installing any peripheral equipment or circuit card concurrently with the SV9500 Appliance Model installation.

Note: Command Manual is required in all processes.

2.1.3. Manual Reference Procedures for Each Process

The following chart shows the reference procedures within each manual for each process from carrying in the equipment to starting the system operation.

[1] From Carry-in to System Startup

The chart below shows the reference manuals and sections that provide the procedures required for installation after purchasing SV9500 Appliance Model. The following chart covers the process from equipment carry-in to system startup.

Process	Manual Reference
Equipment Carry-in	
Installation and Device Setup	• Appliance Model Installation Manual Refer to Chapter 1 to 5 to perform Power Equipment Installation, Cable Connection, and PIR Installation • Circuit Card Description When mounting circuit cards in the PIR, refer to this manual to perform the switch settings and circuit card mounting. • Peripheral Equipment Description (Digital/Analog Devices) (IP Devices) (Multi-Line Telephone)(UG50) and Software Model Peripheral Equipment Description Refer to the relevant manual listed above for installation of the peripheral equipment. • Migration Guide Refer to this manual on how to install PIR/PIM and power equipment for migration from SV8500 / NEAX2400 IPX / SV7000 to SV9500.
System Startup and Preparation	• PCPro Setup Manual Refer to this manual to perform a setup of PCPro on a maintenance PC and validation of PCPro. • Appliance Model Installation Manual Refer to “Initial Startup” in Chapter 6 to perform a system startup and preparation. Refer to “System Data Installed in Initial Startup” in Appendix A if necessary. Perform an installation test after starting up the system by following the procedures in Chapter 7. • Migration Guide When migrating from SV8500 / NEAX2400 IPX / SV7000 to SV9500, refer to this manual on how to start and set up the system and how to perform an installation test. • UMGi Configuration and Maintenance Guide When building a UMGi system, refer to this manual on how to start and set up the system and how to perform an installation test. • Geographic Redundancy Configuration Manual When building a system with Geographic Redundancy, refer to this manual on how to start and set up the system and how to perform an installation test.
System Startup Completed	

[2] From System Startup Completion to Operation Start

The chart below shows the reference manuals and sections that provide the procedures required after system startup has been completed. The following chart covers the process from office data assignment to operation start.

Process	Manual Reference
System Startup Completion	
Basic Office Data Assignment	• Data Programming Manual Refer to basic data sections in each Data Programming Manual for office data setting required for the system. • Command Manual Refer to this manual to perform basic office data assignment if necessary. • Circuit Card Description Check whether MB switch is set to OFF and OPE lamp is turned on for each circuit card. • Peripheral Equipment Description (Digital/Analog Devices) (IP Devices) (Multi-Line Telephone) (UG50) and Software Model Peripheral Equipment Description Refer to the relevant manual listed above to set the configuration data and check whether the ON LINE lamp is turned on for the peripheral equipment (when applicable).
Data Assignment for Service Features	• Data Programming Manual Refer to this manual to set office data assignment for services required for the system. • Command Manual Refer to this manual to perform data assignment for service features if necessary.
Operation Start	

2.2. SV9500 Software Model

2.2.1. Manual Reference

The manuals to refer to for instructions and procedures required at each process are listed below.

[1] Installation and Device Setup

- System Description
- Software Model Installation Manual
- Software Model Peripheral Equipment Description
- Peripheral Equipment Description (IP Devices)
- Peripheral Equipment Description (Multi-Line Telephone)
- Peripheral Equipment Description (UG50)

[2] System Startup and Preparation

- Software Model Installation Manual
- Software Model Peripheral Equipment Description
- PCPro Setup Manual

[3] Basic Office Data Assignment

- System Description
- Data Programming Manuals
- Software Model Peripheral Equipment Description
- Peripheral Equipment Description (IP Devices)
- Peripheral Equipment Description (Multi-Line Telephone)
- Peripheral Equipment Description (UG50)
- Command Manual

[4] Data Assignment for each Service Feature

- Data Programming Manuals
- Command Manual

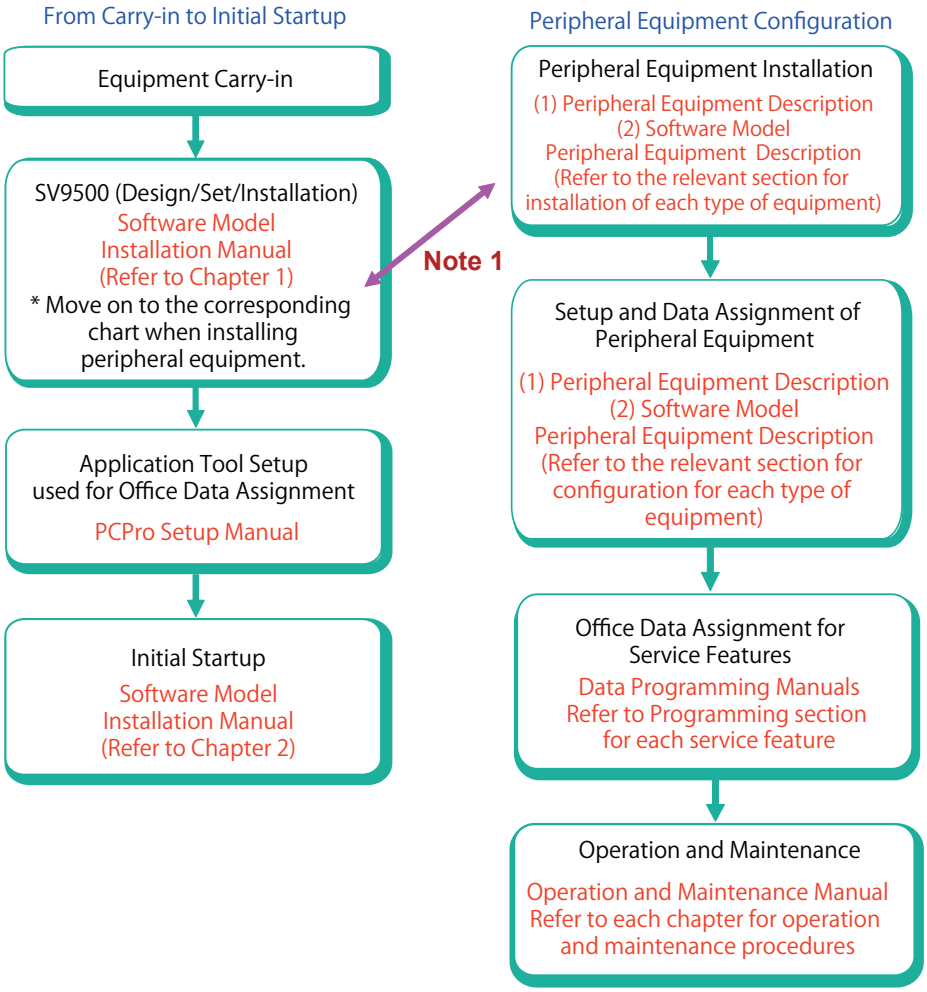
[5] Operations and Maintenance

- Operations and Maintenance Manual
- Command Manual

Refer to each manual for detailed information of contents.

2.2.2. Work Flow Chart

The chart below shows the work flow from carrying in the components, initial startup of SV9500 Software Model, setup for each device, to operation and maintenance.



Note 1: When installing any peripheral equipment concurrently with the SV9500 Software Model installation.

Note: Command Manual is required in all processes.

2.3. SV9500 Prepackaged Server Model

2.3.1. Manual Reference

The manuals to refer to for instructions and procedures required at each process are listed below.

[1] Installation and Device Setup

- System Description
- Prepackaged Server Model Installation and Operation Manual
- Peripheral Equipment Description (IP Devices)
- Peripheral Equipment Description (Multi-Line Telephone)
- Peripheral Equipment Description (UG50)
- Software Model Peripheral Equipment Description

[2] System Startup and Preparation

- Prepackaged Server Model Installation and Operation Manual
- PCPro Setup Manual
- UMGi Configuration and Maintenance Guide
- Geographic Redundancy Configuration Manual

[3] Basic Office Data Assignment

- System Description
- Data Programming Manuals
- Peripheral Equipment Description (IP Devices)
- Peripheral Equipment Description (Multi-Line Telephone)
- Peripheral Equipment Description (UG50)
- Software Model Peripheral Equipment Description
- Command Manual

[4] Data Assignment for each Service Feature

- Data Programming Manuals
- Command Manual

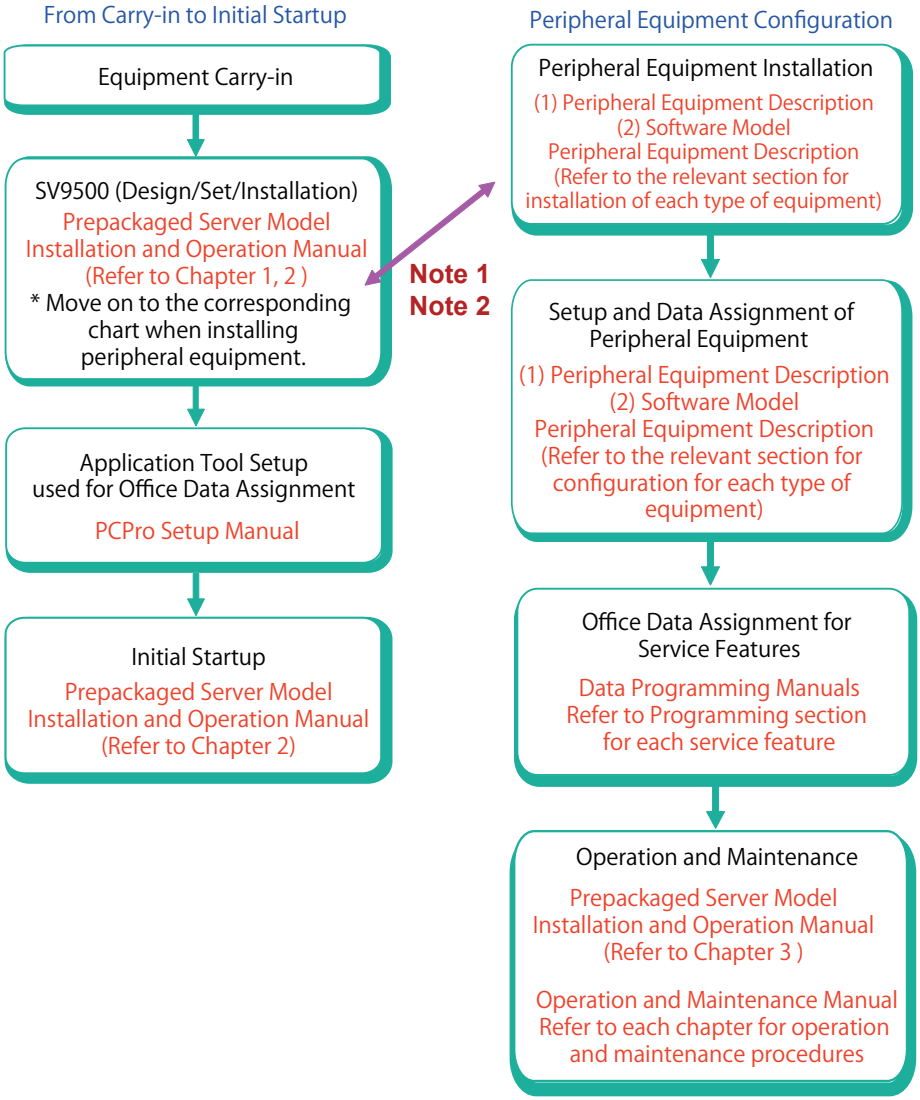
[5] Operations and Maintenance

- Prepackaged Server Model Installation and Operation Manual
- Operations and Maintenance Manual
- Command Manual
- UMGi Configuration and Maintenance Guide

Refer to each manual for detailed information of contents.

2.3.2. Work Flow Chart

The chart below shows the work flow from carrying in the components, initial startup of SV9500 Pre-packaged Server Model, setup for each device, to operation and maintenance.



Note 1: When installing any peripheral equipment concurrently with the SV9500 Prepackaged Server Model installation.

Note 2: If Software-based MG-SIP installed in the SV9500 Prepackaged Server Model is used, see Chapter 4 Software-based MG-SIP of Prepackaged Server Model.

Note: Command Manual is required in all processes.

3. Precautions When Using Manuals

Take notice that an operation of a system which was installed, maintained, or operated without following the installation, operation, configuration, or maintenance procedures provided in the manuals is not guaranteed. Contact your Sales Representative when you have any uncertain matters that are not described in the manuals.

4. Descriptions of UMGi

Information on the UMGi (Network-based Ultra Module Group) system described in this manual applies to North America, EMEA, Australia, and other international markets.

Note: Before FP95-113 V3, information on the UMGi system in this manual was intended only for North America market.

5. Descriptions of RNIP

Information on the RNIP (Remote Node over IP) system (**Note 1**) described in this manual is intended only for North America market.

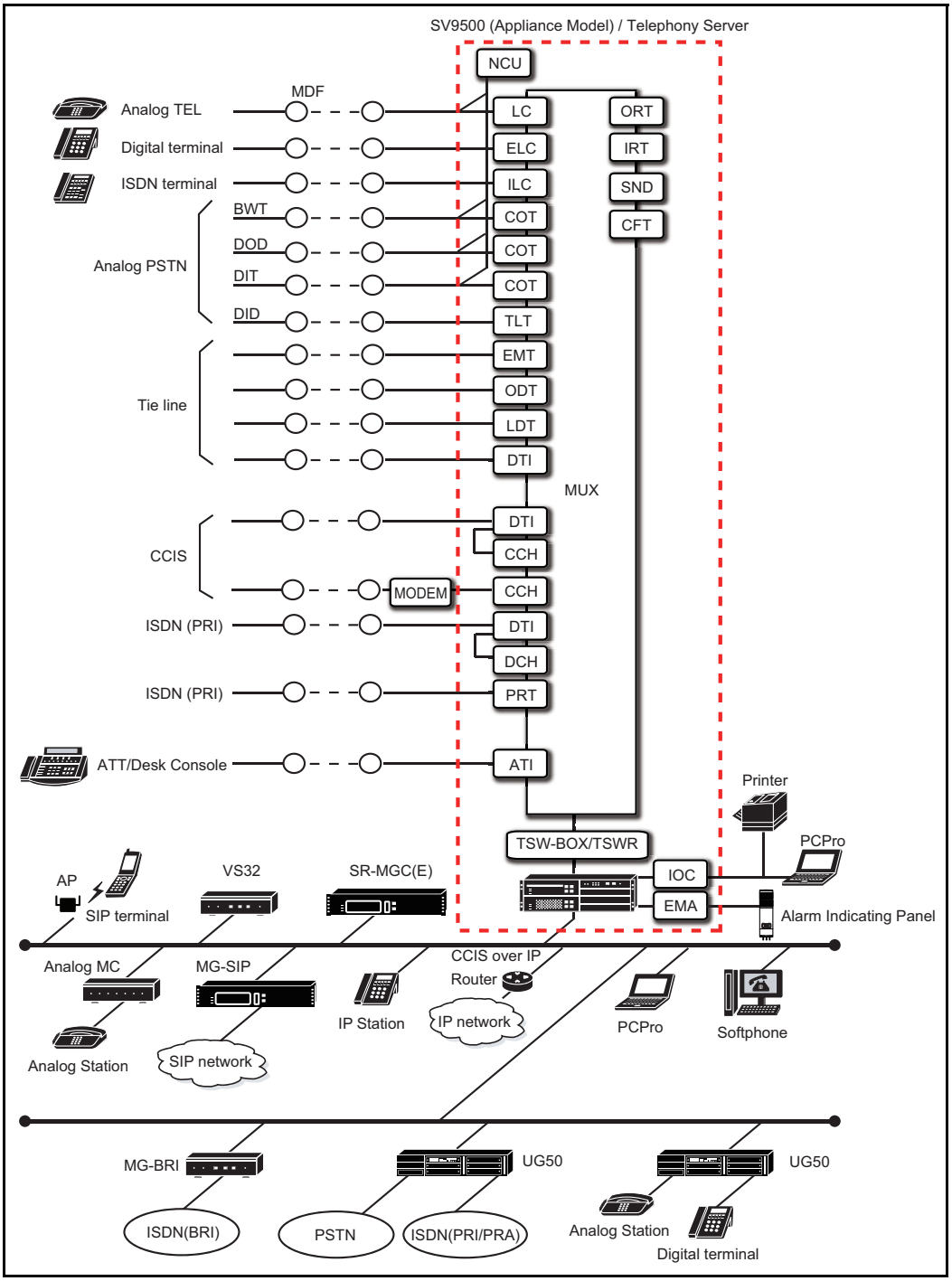
Note 1: UMGi has taken over RNIP since FP95-112 V2. If you have Telephony Server with FP95-112 V2 or later and need information on Remote Node over IP, see UMGi Configuration and Maintenance Guide.

CHAPTER 2
VARIOUS INFORMATION FOR SV9500

1. SV9500 System Configuration

1.1. SV9500 Appliance Model System Configuration

The figure below shows an overview of the system configuration of SV9500 Appliance Model.

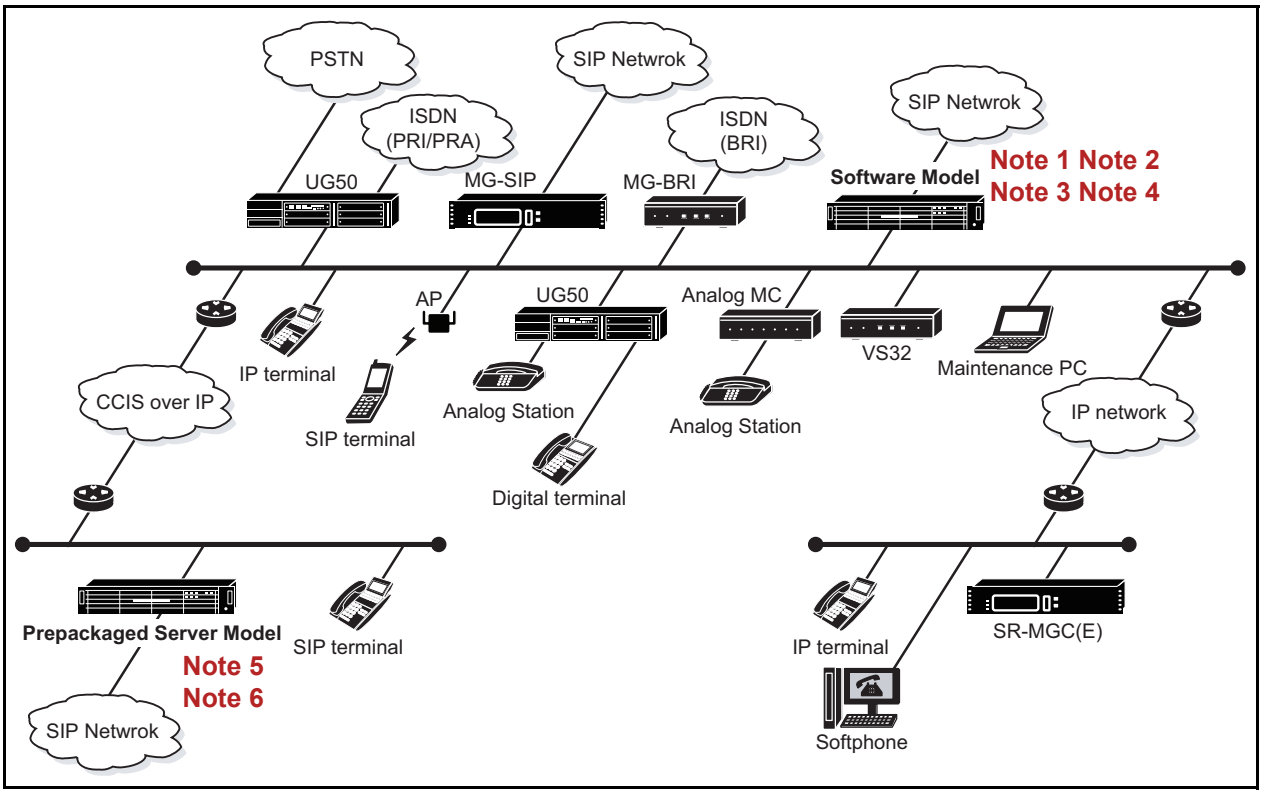


This table identifies the function name of each line/trunk interface and switching controller.

SYMBOL	DESCRIPTION
ATI	Attendant Console Interface
BWT	Bothway Trunk
CCH	Common Channel Handler
CFT	Conference Trunk
COT	Central Office Trunk
DCH	D-Channel Handler
DID	Direct Inward Dialing
DIT	Direct-In Termination
DLC	Digital Line Circuit
DOD	Direct Outward Dialing
DTI	Digital Trunk Interface
ELC	Electronic Line Circuit
EMA	Emergency Alarm Controller
EMT	E & M Trunk
ILC	ISDN Terminal Line Circuit
IOC	Input/Output Controller
IRT	Incoming Register Trunk
LC	Line Circuit
LDT	Loop Dialing Trunk
MDF	Main Distribution Frame
MUX	Multiplexer
NCU	Night Connection Unit
ODT	Outband Dialing Trunk
ORT	Outgoing Register Trunk
PRT	Primary Rate Interface Trunk
SND	Sender
TLT	Tie Line Trunk
TSW	Time Division Switch

1.2. SV9500 Software Model and SV9500 Prepackaged Server Model System Configuration

The figure below shows an overview of the system configuration of SV9500 Software Model and SV9500 Prepackaged Server Model.



Note 1: In the Software Model, the following software can be used as virtual machines. For the environment of virtual machines of Software Model, see “Chapter 1 General” in the Software Model Installation Manual.

- SV9500 Software Model
- Software-based MG-SIP
- Software-based VS32 (only provides announcement (DAT) feature)

Note 2: SV9500 Software Model is available since FP95-114 V4.

Note 3: Software-based MG-SIP for Software Model is available since FP95-114 V4.

Note 4: Software-based VS32 is available since FP95-114 V4.

Note 5: For the environment of virtual machines of SV9500 Prepackaged Server Model, see “Operating System Configurations” in the Prepackaged Server Model Installation and Operation Manual.

Note 6: Software-based MG-SIP is available since FP95-112 V2 with SV9500 Prepackaged Server Model.

2. Terms in Manuals

2.1. Systems Name

The following are used unless the types of the telephony server/PBX need to be identified.

TERMS USED IN THIS MANUAL	SYSTEMS NAMES
SV9500, the system **Note 1**	UNIVERGE SV9500
SV9300, the system	UNIVERGE SV9300
SV8500, the system	UNIVERGE SV8500
SV8300, the system	UNIVERGE SV8300
SV7000, the system	UNIVERGE SV7000
MPS, SV7000 MPS, the system	UNIVERGE SV7000 MPS
IPX, 2400 IPX, NEAX 2400 IPX, the system	NEAX2400 IPX Internet Protocol eXchange **Note 2**
IPS, 2000 IPS, NEAX 2000 IPS	NEAX2000 IPS INTERNET PROTOCOL SERVER **Note 3**
NEAX IMX, IMX	NEAX2400 IMX
	NEAX7400 IMX
	NEAX7400 ICS (IMX)
NEAX IVS^2, IVS^2	NEAX2000 IVS^2
	NEAX2000 INTEGRATED VOICE SERVER
	NEAX7400 ICS M100MX
NEAX IVS, IVS	NEAX7400 ICS Model110
	NEAX7400 ICS Model120
	NEAX7400 ICS Model80VS
	NEAX7400 ICS Model100

Note 1: SV9500 is classified into the following types:

Major Item	Intermediate Item	Minor Item	Remarks
SV9500	SV9500 Appliance Model	Appliance Model	This model is a hardware version of SV9500. The entire system includes SV9500(CPU) main body, PIR, etc.
	SV9500 Software Model	Software Model	This model is an SV9500 operating in a virtual machine.
	SV9500 Prepackaged Server Model	Prepackaged Server Model	This model is an SV9500 operating in a virtual machine that is pre-installed in a designated server. HDD, CPU, memory and other components are in single (non-redundant) configuration.
		Prepackaged FT Server Model	This model is an SV9500 operating in a virtual machine that is pre-installed in a designated server. HDD, CPU, memory and other components are in dual (redundant) configuration.

Note 2: In regard to China market, NEAX2400 IPX Internet Protocol eXchange has not been released but NEAX2400 is released.

Note 3: In regard to China market, NEAX2000 IPS INTERNET PROTOCOL SERVER has not been released but NEAX2000 is released.

2.2. Terminals Name

In this manual, the following terminals are mentioned as each common term unless these types need to be identified.

<table>
<tr><th colspan="7">GENERIC TERMS USED IN THIS MANUAL</th><th colspan="3">TERMINALS NAMES</th></tr>
<tr><td rowspan="20">Desktop terminal</td><td rowspan="19">IP station</td><td rowspan="19">SIP terminal</td><td rowspan="4">Softphone</td><td rowspan="2">Softphone (Proprietary Protocol)</td><td rowspan="2">DtermSP30</td><td>DtermSP30 (Proprietary Protocol)</td></tr>
<tr><td rowspan="2">Softphone (SIP)</td><td>DtermSP30 (SIP)</td></tr>
<tr><td colspan="2">Soft Client SP350</td></tr>
<tr><td rowspan="11">SIP Multiple Line terminal</td><td>DtermIP</td><td>DtermIP (SIP)</td></tr>
<tr><td rowspan="5">DT700 Series</td><td>DT710</td></tr>
<tr><td>DT730</td></tr>
<tr><td>DT730G</td></tr>
<tr><td>DT750</td></tr>
<tr><td>DT770G</td></tr>
<tr><td rowspan="3">DT800 Series</td><td>DT830</td></tr>
<tr><td>DT830G</td></tr>
<tr><td>DT820</td></tr>
<tr><td rowspan="4">Standard SIP terminal Note 2</td><td rowspan="2">SIP Handler Controlled SIP terminal</td><td colspan="2">SIP Handler Controlled SIP Voice terminal</td><td rowspan="4">Third-party SIP terminal</td></tr>
<tr><td colspan="2">SIP Handler Controlled SIP Video terminal</td></tr>
<tr><td rowspan="3">SP Controlled SIP terminal</td><td colspan="2">SP Controlled SIP Voice terminal</td></tr>
<tr><td colspan="2">SP Controlled SIP Video terminal</td></tr>
<tr><td colspan="2">Wireless terminal</td><td>WLAN Handset (MH Series)</td><td colspan="3">MH250</td></tr>
<tr><td colspan="3" rowspan="2">Digital terminal</td><td colspan="2">Dterm</td><td>Dterm Series i</td></tr>
<tr><td rowspan="2">DT300 Series</td><td>DT310</td></tr>
<tr><td rowspan="3">IP terminal</td><td>DT330</td></tr>
<tr><td rowspan="2">DT400 Series</td><td>DT410</td></tr>
<tr><td>DT430</td></tr>
<tr><td rowspan="4">Wireless terminal</td><td colspan="3" rowspan="4">SIP terminal</td><td colspan="2">IP Enabled Dterm</td><td>Dterm Series i with IP adapter Note 1</td></tr>
<tr><td colspan="3">DtermIP INASET Note 1</td></tr>
<tr><td colspan="2">DtermIP</td><td>DtermIP (Proprietary Protocol)</td></tr>
<tr><td colspan="3">PS</td><td colspan="2">PHS</td></tr>
<tr><td colspan="3"></td><td colspan="2">PCS</td></tr>
</table>

Note 1: This terminal provides users with all features currently available on DtermIP (Proprietary Protocol).

Note 2: When service conditions of Standard SIP terminals vary depending on controlling devices such as SP and SIP Handler, Standard SIP terminals are mentioned with names in the TERMINAL NAMES column. SIP Handler can also control Standard SIP Video terminals and Standard SIP Voice terminals which are controlled by SP. Standard SIP terminals require connection tests of NEC.

2.3. Media Gateways (MG), Media Converters (MC), and Voice Conference Servers (VS) Name

In this manual, the following are mentioned as each common term unless these types need to be identified.

GENERIC TERMS USED IN THIS MANUAL	EQUIPMENT NAMES
MG(PRI) **Note 3**	MG(PRI) Card [SCA-24PRIA]
	MG(PRI) Box [MG-24PRIA]
	MG(PRI) Card [SCA-30PRIA]
	MG(PRI) Box [MG-30PRIA]
MG-T1(SIP)	MG-T1(SIP) Card [SCA-24DTIA]
	MG-T1(SIP) [SCA-24DTIA-B]
MG(BRI)	MG(BRI) Card [SCA-2BRIA]
	MG(BRI) Box [MG-2BRIA]
	MG(BRI) [SCA-2BRIA-B]
MG(SIP)	MG-SIP16
	MG-SIP16 Card [SCA-16SIPMGA]
	MG-SIP16 Box [MG-16SIPMGA]
	MG-SIP16 Card [SCA-16SIPMG(US)]
	MG-SIP16 [SCA-16SIPMG(US)-B]
	MG-SIP96
	MG-SIP128 [MG-128SIPMGL-A]
	MG-SIP128 [MG-128SIPMGG]
	MG-SIP128 [MG-128SIPMGG-B]
	MG-SIP128 [MG-128SIPMGJ]
	MG-SIP128 [MG-128SIPMGJ-B]
	Software-based MG-SIP
MC&MG-COT **Note 4**	MCMG Card [SCA-4LC2COTA]
	MCMG Box [MG-4LC2COTA]
MG-COT **Note 5**	MG-COT Card [SCA-6COTA]
	MG-COT Card [SCA-6COTB]
	MG-COT Card [SCA-6COTC]
Analog MC **Note 6**	Analog 2MC
	8LC Card [SCA-8LCA]
	8LC Card [SCA-8LCA-EMEA]
	8LC Card [SCA-8LCC]
	8LC Card [SCA-8LCC-EMEA]
SR-MGC	SR-MGC(E)

GENERIC TERMS USED IN THIS MANUAL	EQUIPMENT NAMES
VS32	VS-32(Dual) Card [SCA-VS32VA]
	VS-32(Dual) Box [MG-VS32VA]
	VS-32(Dual) [SCA-VS32VA-B]
	Software-based VS32
IPG Digital	
IPG Analog	
UG50 **Note 1**	

Note 1: The conditions vary according to the mode of the UG50. See the table below.

OPERATION MODE	DEVICE TYPE	PROTOCOL TYPE	MOUNTING CARD
Multi-slot mode	UG50 (DLC)	Proprietary Protocol	GCD-8DLCA GPZ-8DLCB GCD-16DLCA
	UG50 (LC) [Proprietary Protocol/SIP] **Note 2**	Proprietary Protocol/SIP	GCD-8LCA GPZ-8LCE
	UG50 (PRT 1.5M) [Proprietary Protocol/SIP] **Note 2 Note 3**	Proprietary Protocol/SIP	GCD-PRTA
	UG50 (PRT 2M) [Proprietary Protocol/SIP] **Note 2 Note 3**		
	UG50 (COT-TYPE1) **Note 4**	Proprietary Protocol	GCD-4COTA/B/C GPZ-4COTE/F/G
	UG50 (COT-TYPE2) [Proprietary Protocol/SIP] **Note 2 Note 5**	Proprietary Protocol/SIP	
	UG50 (PGT-TYPE1) **Note 4**	Proprietary Protocol	GCD-PGTA
	UG50 (PGT-TYPE2) [Proprietary Protocol/SIP] **Note 2 Note 5**	Proprietary Protocol/SIP	
IPG mode	UG50-IPG (Digital)	Proprietary Protocol	GCD-16DLCA
	UG50-IPG (Analog)	Proprietary Protocol	GCD-8LCA GPZ-8LCE
Retrofit mode	UG50-8LC **Note 6**	SIP	GCD-8LCA
	UG50-2MC **Note 6**	Proprietary Protocol	GCD-8LCA
	UG50-24PRIA [Proprietary Protocol/SIP] **Note 3**	Proprietary Protocol/SIP	GCD-PRTA
	UG50-30PRIA [Proprietary Protocol/SIP] **Note 3**		
	UG50-4LC2COTA (COT) **Note 4**	Proprietary Protocol	GCD-8LCA GCD-4COTA/B/C
	UG50-4LC2COTA (PGT) **Note 4**	Proprietary Protocol	GCD-8LCA GCD-PGTA
	UG50-6COT [Proprietary Protocol/SIP] **Note 5**	Proprietary Protocol/SIP	GCD-4COTA/B/C GPZ-4COTE/F/G

Note 2: For Proprietary Protocol mode, "**[Proprietary Protocol]**" will not display on the IPAN command.

Note 3: MG (PRI) in this manual indicates the following terminals:
- MG (PRI) Card [SCA-24PRIA]
- MG (PRI) Box [MG-24PRIA]
- MG (PRI) Card [SCA-30PRIA]
- MG (PRI) Box [MG-30PRIA]
- UG50 (PRT 1.5M) [Proprietary Protocol/ SIP]
- UG50 (PRT 2M) [Proprietary Protocol/ SIP]
- UG50-24PRIA [Proprietary Protocol/ SIP]
- UG50-30PRIA [Proprietary Protocol/ SIP]

Note 4: MC&MG-COT in this manual indicates the following terminals:
- MCMG Card [SCA-4LC2COTA]
- MCMG Box [MG-4LC2COTA]
- UG50 (COT-TYPE1)
- UG50-4LC2COTA (COT)
- UG50 (PGT-TYPE1)
- UG50-4LC2COTA (PGT)

Note 5: MG-COT in this manual indicates the following terminals:
- MG-COT Card [SCA-6COTA]
- MG-COT Card [SCA-6COTB]
- MG-COT Card [SCA-6COTC]
- UG50 (COT-TYPE2) [Proprietary Protocol/SIP]
- UG50-6COT [Proprietary Protocol/SIP]
- UG50 (PGT-TYPE2) [Proprietary Protocol/SIP]

Note 6: Analog MC in this manual indicates the following terminals:
- Analog 2MC
- 8LC Card [SCA-8LCA]
- 8LC Card [SCA-8LCA-EMEA]
- 8LC Card [SCA-8LCC]
- 8LC Card [SCA-8LCC-EMEA]
- UG50-2MC
- UG50-8LC

2.4. Circuit Cards Name

The following table describes cards and functions referred with TLT and ODT.

<table>
<tr><th colspan="3">Symbol</th><th>Trunk Interface</th><th colspan="2">Circuit Card</th></tr>
<tr><td rowspan="3">TLT</td><td colspan="2">LDT</td><td>Loop Dialing interface</td><td rowspan="2">PA-8TLTR-A
PA-8TLTR-B</td><td></td></tr>
<tr><td></td><td>DID</td><td>Direct Inward Dialing interface</td><td></td></tr>
<tr><td colspan="2">ODT(EMT)</td><td>2-wire E&M or 4-wire E&M</td><td>CH-8ODTA</td></tr>
</table>

2.5. General Terms

- PIR in this manual is a term equivalent to GC (Gateway Chassis) in North America.
- Automatic Number Identification (ANI) in this manual is a term equivalent to Calling Line Identification (CLI) in Australia.

3. New/Migration List for Peripheral Equipment

3.1. SV9500 Appliance Model

The list below shows whether each peripheral equipment or circuit card can be reused on SV9500 Appliance Model, and whether they can be migrated to SV9500 from an existing system.

Note: This section is exclusively for SV9500 Appliance Model.

Note: [Consideration on peripheral equipment and circuit cards that can be migrated to SV9500 Appliance Model]
The following list contains circuit cards and peripheral equipment from the Circuit Card Description or the Peripheral Equipment Description manuals only if they can be used on this system. The devices that are described in the manuals for former system types that cannot be used on this system are not listed in this table.
Some of the circuit cards or peripheral equipment listed in the following tables might already be discontinued due to product changeover. Therefore, you might have to update the firmware to the newest version when migrating any devices in the tables below. Refer to product sales information for availability on migration and product preparation.

3.1.1. Peripheral Equipment

X: Available, N: Not Available, -:Not Applicable

Product Name	New	Migration	Note
Cell Station (CS) [BS41]	N	X	
Zone Transceiver (ZT)	N	X	
Analog 2MC (Analog Media Converter)	X	X	
8LC Card [SCA-8LCA/SCA-8LCA-EMEA/SCA-8LCC/SCA-8LCC-EMEA]	N	X	**Note 1**
MCMG [SCA-4LC2COTA/MG-4LC2COTA]	N	X	**Note 1**
MG-COT Card [SCA-6COTA/SCA-6COTC]	N	X	**Note 1**
MG-COT Card [SCA-6COTB]	N	X	**Note 1**
MG(BRI) [SCA-2BRIA/MG-2BRIA]	N	X	**Note 1**
MG(BRI) [SCA-2BRIA-B]	X	-	
MG(PRI) (1.5M) [SCA-24PRIA/MG-24PRIA]	N	X	**Note 1**
MG(PRI) (2M) [SCA-30PRIA/MG-30PRIA]	N	X	**Note 1**
MG-T1(SIP) [SCA-24DTIA]	N	X	**Note 1**
MG-T1(SIP) [SCA-24DTIA-B]	X	-	

Product Name	New	Migration	Note
Software-based MG-SIP	X	-	Software-based MG-SIP installed in SV9500 Prepackaged Server Model can be registered to SV9500 Appliance Model Server.
MG-SIP128 [MG-128SIPMGL-A]	N	X	
MG-SIP128 [MG-128SIPMGG]	N	X	
MG-SIP128 [MG-128SIPMGJ]	N	X	
MG-SIP128 [MG-128SIPMGG-B]	X	-	
MG-SIP128 [MG-128SIPMGJ-B]	X	-	
MG-SIP96	N	X	
MG-SIP16	N	X	
MG-SIP16 [SCA-16SIPMGA/MG-16SIPMGA]	N	X	**Note 1**
MG-SIP16 [SCA-16SIPMG(US)]	N	X	**Note 1**
MG-SIP16 [SCA-16SIPMG(US)-B]	X	-	
Software-based VS32	X	-	
VS-32(Dual) [SCA-VS32VA/MG-VS32VA]	N	X	**Note 1**
VS-32(Dual) [SCA-VS32VA-B]	X	-	
1U-MPC [SN8104 MGCEJ-A]	N	X	
1U-MPC [SN8104 MGCEJ-B]	X	-	
SR-MGC(E) [SN8178 MGCEV-A]	N	X	
SR-MGC(E) [SN8178 MGCEV-B]	X	-	
Dterm Series i	N	X	
Dterm Series i with IP adapter	N	X	
DtermIP INASET	N	X	
DtermIP (Proprietary Protocol)	N	X	
DtermIP (SIP)	N	X	
DtermIP with 6 LD LC Add-on Module (16LD ADM)	N	X	
DtermSP30 (Proprietary Protocol)	N	X	
DtermSP30 (SIP)	N	X	
Soft Client SP350	X	X	
DT310	X	X	
DT330	X	X	
DT710	X	X	
DT730	X	X	
DT730G	X	X	
DT750	X	X	
DT770G	X	X	
MH250	N	X	
DT410	X	-	

Product Name	New	Migration	Note
DT430	X	-	
DT830	X	-	
DT830G	X	-	
DT820	X	-	
PHS	N	X	
PCS	N	X	
Standard SIP terminal	X	X	Standard SIP terminals require connection tests of NEC.
Standard SIP Video Terminal	X	X	Standard SIP Video terminals require connection tests of NEC.
Analog Station	X	X	
Desk Console	X	X	
Headset (Wideband SupraPlus NC Polaris)	X	X	
Headset (SUPRA F53U-U03F)	N	X	
Handset (left side of a Desk Console)	X	X	
Handset (right side of a Desk Console)	X	X	
Add-On Console (right side of a Desk Console)	X	X	
Add-On Console (left side of a Desk Console)	X	X	
AC-DC Adapter To An Add-on Console	X	X	
DSS Console	X	X	
Trunk Answer from Any Station (TAS) Indicator	N	X	
Announcement Machine	X	X	
Paging Equipment	X	X	
Alarm Indicating Panel and External Music-On-Hold	X	X	
Alarm Display Panel (SV8500 DSPP)	N	X	
Alarm Display Panel (SV9500 DSPP)	X	X	
External Switch (External Key Box)	X	X	It is also expressed as External Key.
IPG Digital	N	X	
IPG Analog	N	X	
SN1757 BBUB	X	X	
UG50 (DLC)	X	X	
UG50 (LC) [Proprietary Protocol/SIP]	X	X	
UG50 (PRT 1.5M) [Proprietary Protocol/SIP]	X	X	
UG50 (PRT 2M) [Proprietary Protocol/SIP]	X	X	
UG50 (COT-TYPE1)	X	X	
UG50 (COT-TYPE2) [Proprietary Protocol/SIP]	X	X	
UG50-IPG (Digital)	X	X	
UG50-IPG (Analog)	X	X	

Product Name	New	Migration	Note
UG50-8LC	X	X	
UG50-2MC	X	X	
UG50-24PRIA [Proprietary Protocol/SIP]	X	X	
UG50-30PRIA [Proprietary Protocol/SIP]	X	X	
UG50-4LC2COTA (COT)	X	X	
UG50-6COT [Proprietary Protocol/SIP]	X	X	
UG50 (PGT-TYPE1)	X	X	
UG50 (PGT-TYPE2) [Proprietary Protocol/SIP]	X	X	
UG50-4LC2COTA (PGT)	X	X	

Note 1: Consider the following when migrating the SCA cards.
- To extend use of the 1U-MPC used in the existing system, the preventive replacement of the power unit of MPC (SN1716 PWRMY-A) is required.
- When migrating the SCA cards not ending with “-B” to the newly purchased 1U-MPC, there are no problems with the operation even though the color of the MPC unit and the front panel of the SCA card do not match.
- When using the SCA card ending with “-B” on the 1U-MPC for existing system, there are no problems with the operation even though the color of the MPC unit and the front panel of the SCA card do not match.

3.1.2. Circuit Card

Note: Migrated circuit cards can only be used in a migrated 8U-PIR and not in a 7U-PIR.

X: Available, N: Not Available, -: Not Applicable

Circuit Card Product Name	Stock Pattern Name	New	Migration	Note
IMG/MMG				

Circuit Card Product Name	Stock Pattern Name	New	Migration	Note
Control Circuit Card In Server				
CPU				
SCF-CP02-B	SCF-CP02-B	X	X	
EMA MAIN				
SCG-PC00-B	SCG-PC00-C	X	X	
EMA SUB-A				
SCG-M03-B	SCG-M03-B	X	X	
EMA SUB-B				
SCG-M02-B	SCG-M02-B	X	X	
EXB TSWR				
SCG-GT01-B	SCG-GT01-B	X	X	
IOC				
SCG-IO00-B	SCG-IO00-B	X	X	
Control Circuit Card In TSW-BOX				
TSW				
SPZ-SW25-A	SPZ-SW25-A	X	X	

Circuit Card Product Name	Stock Pattern Name	New	Migration	Note
Control Circuit Card In PIR/TSWR				
DLKC				
PH-PC20	SPH-PC20 DLKC	N	X	
PH-PC20-B	SPH-PC20B-A	X	X	
DPWR				
PA-PW54-C	-	X	N	
PA-PW55-C	-	X	N	
GT				
PH-GT09	SPH-GT09	X	X	
MUX				
CJ-PC00	-	X	-	
PH-PC36	-	X	X	
OSC				
PA-CK14-A	-	N	X	
PLO				
PH-CK16	-	N	X	
PH-CK16-A	-	N	X	
PH-CK16-C	-	N	X	
PH-CK16-D	-	N	X	
PH-CK17	-	N	X	
PH-CK17-A	-	N	X	
PH-CK20	-	X	X	
PWR SW				
SN1769 PWRMAD	-	X	-	
SN1770 PWRMAE	-	X	-	
PH-PW14	-	X	N	
TSW				
PH-SW10-A	-	N	X	Can be used as MUX after migration.

Circuit Card Product Name	Stock Pattern Name	New	Migration	Note
PH-SW12	SPH-SW12 TSW-UA	X	X	
	SPH-SW12 TSW-AA	X	X	
	SPH-SW12TSW-BR	N	X	
	SPH-SW12TSW-CI	X	X	
	SPH-SW12TSW-CIA	X	X	
	SPH-SW12TSW-MH	X	X	
	SPH-SW12TSW-HK	X	X	
	SPH-SW12TSW-SQ	X	X	
	SPH-SW12TSW-GA	X	X	
	SPH-SW12TSW-MX	N	X	
	SPH-SW12TSW-TAIA	X	X	
	SPH-SW12TSW-TAIB	N	X	
	SPH-SW12TSW-CH	X	X	
	SPH-SW12TSW-EUR	N	X	
	SPH-SW12TSW-RU	X	X	
	SPH-SW12TSW-KOA	X	X	
	SPH-SW12TSW-NL	X	X	
Line/Trunk Circuit Card				
ATI				
CH-CS00	SCH-CS00-A ATI-A	X	-	
PA-CS33	SPA-CS33 ATI-A	N	X	
PA-CS33-C	SPA-CS33C ATI-A	N	X	
CCH				
PA-2CCHA	SPA-2CCHA	N	X	
CCT				
CH-PRTA (1.5M CCT)	SCH-CCTA-A	X	-	
CH-PRTA (2M CCT)	SCH-CCTA-A	X	-	
PA-PRTC (1.5M CCT)	SPA-CCTC-A	N	X	
PA-PRTC (2M CCT)	SPA-CCTC-A	N	X	
CFT				
CH-CFTA	SCH-CFTA-A	X	-	
PA-CFTW	SPA-CFTW-A	X	X	
PA-CFTV	SPA-CFTV	X	X	
COT				
CH-12COTA	SCH-12COTA-A	X	-	
CH-12COTB	SCH-12COTB-A	X	-	
PA-8COTBF	SPA-8COTBF	N	X	
PA-8COTBJ	SPA-8COTBJ-A	N	X	

Circuit Card Product Name	Stock Pattern Name	New	Migration	Note
PA-16COTBD-B	SPA-16COTBDB	N	X	
PA-16COTBE	SPA-16COTBE-B	N	X	
PA-16COTBE-B	SPA-16COTBEB-A	X	X	
PA-16COTBH	SPA-16COTBH-A	N	X	
GROUND START				
CH-M03	SCH-M03-A GS	X	-	
CSINT				
PA-8CSIE	SPA-8CSIE	N	X	
PA-8CSIE-A	SPA-8CSIE-A	N	X	
DAT				
CH-DATA	SCH-DATA-A	X	-	
PA-4DATB-A	SPA-4DATBA-B	X	X	
	SPA-4DATBA-C	X	X	
DCH				
PA-2DCHA	SPA-2DCHA	N	X	
DLI				
PA-PRTC (1.5M DLI)	SPA-DLIC-A	X	X	
PA-PRTC (2M DLI)	SPA-DLIC-A	X	X	
DTI				
CH-PRTA (1.5M DTI)	SCH-PRTA-A	X	-	
CH-PRTA (2M DTI)	SCH-PRTA-A	X	-	
PA-PRTC (1.5M DTI)	SPA-DTIC-A	N	X	
PA-PRTC (2M DTI)	SPA-DTIC-A	N	X	
ELC				
CH-16ELCA	SCH-16ELCA-A	X	-	
PA-16ELCJ-B	SPA-16ELCJB-H	N	X	
	SPA-16ELCJB-J	N	X	
	SPA-16ELCJB-K	N	X	
PA-16ELCN	SPA-16ELCN-A	N	X	
	SPA-16ELCN-B	N	X	
	SPA-16ELCN-C	N	X	
PA-16ELCN-A	SPA-16ELCNA-A	N	X	
	SPA-16ELCNA-B	N	X	
FCH				
PA-FCHA	SPA-FCHA-A	N	X	
ILC				
PA-8ILCG	SPA-8ILCG-A	X	X	
PA-8ILCE-A	SPA-8ILCEA-B	N	X	

Circuit Card Product Name	Stock Pattern Name	New	Migration	Note
IPPAD				
CH-IPDA	SCH-IPDA-A	X	-	
PA-32IPDA (IPPAD)	SPA-32IPPADA	N	X	
PA-32IPDB (IPPAD)	SPA-32IPPADB	N	X	
IPTRK				
PA-16IPTC (IPTRK)	SPA-16IPTC	N	X	
LC				
CH-16LCA	SCH-16LCA-A	X	-	
PA-16LCBJ-B	SPA-16LCBJ-B	N	X	
PA-16LCBK-B	SPA-16LCBK-B	N	X	
PA-16LCBL-B	SPA-16LCBL-B	N	X	
PA-16LCBV	SPA-16LCBV	N	X	
PA-16LCBW	SPA-16LCBW	N	X	
PA-16LCBX	SPA-16LCBX	N	X	
PA-16LCBY	SPA-16LCBY	N	X	
PA-16LCCD	SPA-16LCCD-A	N	X	
	SPA-16LCCD-B	N	X	
PA-16LCCF	SPA-16LCCF-A	N	X	
PA-24LCBV	SPA-24LCBV	N	X	
PA-24LCBV-B	SPA-24LCBVB-A	N	X	
LLC				
PA-8LLCQ	SPA-8LLCQ	N	X	
MFCT				
PA-4MFCA	SPA-4MFCA-BB	N	X	
PA-4MFCA-B	SPA-4MFCB-A	X	X	
NCU				
CH-M01	SCH-M01-A 12NCU	X	-	
PFT				
PA-M69-A	SPA-M69-A 12NCU-UA	N	X	
	SPA-M69-A 12NCU	N	X	
PA-M69-B	SPA-M69-B 12NCU-UA	N	X	
	SPA-M69-B 12NCU	N	X	
PRT				
CH-PRTA (1.5M PRT)	SCH-PRTA-A	X	-	
CH-PRTA (2M PRT)	SCH-PRTA-A	X	-	
PA-PRTC (1.5M PRT)	SPA-PRTC-A	N	X	
	SPA-PRTC-B	N	X	

Circuit Card Product Name		Stock Pattern Name	New	Migration	Note
PA-PRTC (2M PRT)	SPA-PRTC-A	N	X	
	SPA-PRTC-B	N	X	
RST					
CH-8RSTA	SCH-8RSTA-A	X	-	
PA-8RSTAD	SPA-8RSTAD-A	N	X	
PA-8RSTAE	SPA-8RSTAE-B	N	X	
PA-8RSTY-A	SPA-8RSTYA	N	X	
SUB BOARD					
PZ-16VCTB	SPZ-16VCTB-C	N	X	
TLT					
PA-8TLTR-B	SPA-8TLTRB-A	X	X	
TLT(ODT)					
CH-8ODTA	SCH-8ODTEL-A	X	-	

3.2. SV9500 Software Model and SV9500 Prepackaged Server Model

The list below shows the peripheral equipment that can be used newly on SV9500 Software Model and SV9500 Prepackaged Server Model.

Note: The conditions for the list are as follows.

- This section is exclusively for SV9500 Software Model and SV9500 Prepackaged Server Model.
- Migration to SV9500 Software Model or SV9500 Prepackaged Server Model from other systems like SV8500, NEAX2400 IPX and SV7000 is not supported.
- The list only includes usable equipment taken from the Peripheral Equipment Description.
- 7U-PIR circuit cards, 8U-PIR circuit cards and all the equipment necessary for those cards connections are not usable in SV9500 Software Model and SV9500 Prepackaged Server Model.

3.2.1. Peripheral Equipment

Product Name	Note
Analog 2MC (Analog Media Converter)	
MG(BRI) [SCA-2BRIA-B]	
MG-T1(SIP) [SCA-24DTIA-B]	
Software-based MG-SIP	Virtual machine in the server.
MG-SIP128 [MG-128SIPMGL-A]	
MG-SIP128 [MG-128SIPMGG-B]	
MG-SIP128 [MG-128SIPMGJ-B]	
MG-SIP16 [SCA-16SIPMG(US)-B]	
Software-based VS32	
VS-32(Dual) [SCA-VS32VA-B]	
1U-MPC [SN8104 MGCEJ-B]	
SR-MGC(E) [SN8178 MGCEV-B]	
Soft Client SP350	
DT310	DT310 accommodated in UG50.
DT330	DT330 accommodated in UG50.
DT710	
DT730	
DT730G	
DT750	
DT770G	
DT410	
DT430	
DT830	
DT830G	
DT820	
Standard SIP terminal	Standard SIP terminals require connection tests of NEC.
Standard SIP Video Terminal	Standard SIP Video terminals require connection tests of NEC.
Analog Station	Analog Station accommodated in UG50.
DSS Console	DT800/DT700 Series only.
UG50 (DLC)	
UG50 (LC) [Proprietary Protocol/SIP]	
UG50 (PRT 1.5M) [Proprietary Protocol/SIP]	
UG50 (PRT 2M) [Proprietary Protocol/SIP]	
UG50 (COT-TYPE1)	

Product Name	Note
UG50 (COT-TYPE2) [Proprietary Protocol/SIP]	
UG50-IPG (Digital)	
UG50-IPG (Analog)	
UG50-8LC	
UG50-2MC	
UG50-24PRIA [Proprietary Protocol/SIP]	
UG50-30PRIA [Proprietary Protocol/SIP]	
UG50-4LC2COTA (COT)	
UG50-6COT [Proprietary Protocol/SIP]	
UG50 (PGT-TYPE1)	
UG50 (PGT-TYPE2) [Proprietary Protocol/SIP]	
UG50-4LC2COTA (PGT)	

4. Structure of SV9500 Appliance Model

Note: This section is exclusively for SV9500 Appliance Model.

4.1. General

This section explains the structure of SV9500 Appliance Model, mainly about its processors. SV9500 Appliance Model has TP and SP as processors on its CPU. Both TP and SP work together to provide various features. The following are general description of TP and SP.

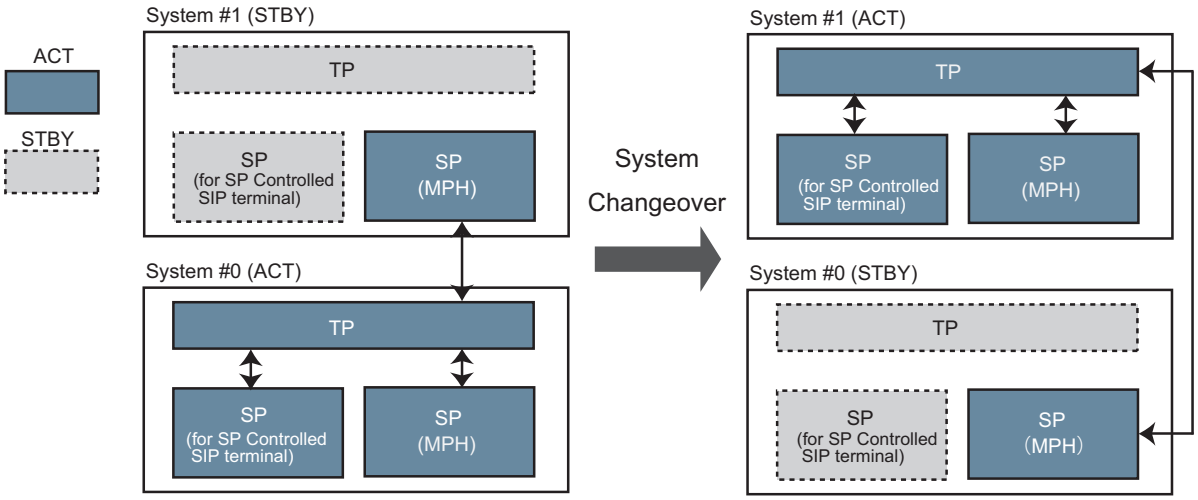
- **TP**: Telephony Processor, supports all the features provided in the system.
- **SP**: Signaling Processor, works as SIP server that handles call control signals using Session Initiation Protocol (SIP). SP consists of two parts - one for SP Controlled SIP terminals using a particular feature called SP CONTROLLED SIP TERMINAL [S-168] (hereinafter called "SP (for SP Controlled SIP terminal)"), and the other for other devices/stations using SP (hereinafter called "SP (MPH)").

Note: Each of the IP devices/stations communicates with either of the processors (TP/SP) as a registration destination. For information about it, refer to "Registration Destination of IP Devices/Stations".

4.2. TP and SP for System Changeover

In dual configuration, each processor may stay in an active (ACT) or standby (STBY) state. ACT-side processors handle each operation while STBY-side processors prepare for system changeover. Their states change when system changeover is performed. The relationship between system changeover and the state of each processor (TP/SP) is described below.

- **TP**: changes its state (ACT/STBY) according to the state of the system to which the TP belongs.
- **SP**: operates differently between the two parts of the SP.
  - SP (for SP Controlled SIP terminal): operates simultaneously with ACT-side TP.
  - SP (MPH): is always in ACT (changeover is not executed).



Note: "SP Controlled SIP terminal" here refers to ones using SP CONTROLLED SIP TERMINAL [S-168] feature. For information about this feature, refer to the Data Programming Manual - Business.

5. IPv6 Connection with PCPro

The connection with IPv6 addresses is available with PCPro for SV9500.

Note: This manual is made under the assumption that IPv4 connections are mainly used. Therefore IPv4 addresses are used in the examples of the IP address settings.

5.1. Service Conditions

(1) You can use IPv6 only when making the connection with PCPro through LAN1.

(2) An IPv4 address needs to be set even when you use an IPv6 address.

(3) During the IPv6 connection, sessions with PCPro are disconnected after CPU system changeover. In this case, reconnect the network to have the IPv6 connection again.

Note: Use IPv4 addresses (LAN2 port) If you need to keep the connection with PCPro at the time of CPU system changeover.

(4) When IPv6 addresses are set by the ADTM command, TCP/IP initialization is executed.

Note: SV9500 does not accept any calls (events) from terminals connected through LAN1 until the TCP/IP initialization is completed.

(5) When you start CPU in offline mode, IPv6 address setting remains the same.

Note: Note the following precautions when you start CPU in offline mode.

- The IPv4 address setting is back to the default value (192.168.0.2/24).
- After you change IPv6 addresses by the ADTM command with no Office Data backup, the IPv6 addresses, which is set by the ADTM command, is valid during offline mode. However, if you finish the offline mode and restart the system, previous IP addresses with Office Data backup become valid.

(6) Traffic Class is fixed to “0” for the IPv6 connection with PCPro.

Note: Traffic Class for IPv6 is equivalent to TOS for IPv4. TOS is fixed to “0” for IPv4 connection with PCPro as well.

5.2. Supported Format for IPv6

The recommended format to enter IPv6 addresses is RFC 5952. RFC 4291 is also available.

Example:

In the case of 2001:0db8:0000:0000:0000:0000:0000:0001, it is displayed as follows in the RFC5952 format.

2001:db8::1

Note: IPv6 addresses are read and represented in the RFC 5952 format.

5.3. Reserved Addresses

You cannot use the following IPv6 addresses in the system because they are reserved.

Type	Representation Example
Loopback Address	::1
6-to-4 address	2002::/16
Site-Local Unicast Address	fec0::/10
Multicast Address	ff00::/8

5.4. Restricted Addresses

You cannot enter the following IPv6 addresses since they are ineligible for support or cannot be used in the system because of their improper formats.

Type	Representation Example
Unspecified Address	::
IPv4-compatible Address	::w.x.y.z (w.x.y.z are IPv4 addresses)
IPv4-mapped Address	::ffff:w.x.y.z (w.x.y.z are IPv4 addresses)

6. Environmental Requirements for Peripheral Equipment

This table shows the peripheral equipment which requires to be operated under the following environmental conditions.

- Operational Temperature Range: 0°C to 40°C (32°F to 104°F)
- Operational Humidity Range: 20% to 90% (not condensing)

EQUIPMENT		REMARKS
Analog MC	Analog 2MC	
	8LC Card [SCA-8LCA]	
	8LC Card [SCA-8LCC]	
	8LC Card [SCA-8LCA-EMEA]	
	8LC Card [SCA-8LCC-EMEA]	
MG(PRI)	MG(PRI) Card [SCA-24PRIA]	
	MG(PRI) Box [MG-24PRIA]	
	MG(PRI) Card [SCA-30PRIA]	
	MG(PRI) Box [MG-30PRIA]	
MG(BRI)	MG(BRI) Card [SCA-2BRIA]	
	MG(BRI) Box [MG-2BRIA]	
	MG(BRI) [SCA-2BRIA-B]	
MC&MG-COT	MCMG Card [SCA-4LC2COTA]	
	MCMG Box [MG-4LC2COTA]	
MG-COT	MG-COT Card [SCA-6COTA]	
	MG-COT Card [SCA-6COTB]	
	MG-COT Card [SCA-6COTC]	
MG(SIP)	MG-SIP16	
	MG-SIP16 Card [SCA-16SIPMGA]	
	MG-SIP16 Box [MG-16SIPMGA]	
	MG-SIP16 Card [SCA-16SIPMG(US)]	
	MG-SIP16 [SCA-16SIPMG(US)-B]	
	MG-SIP96	
	MG-SIP128 [MG-128SIPMGL-A]	
	MG-SIP128 [MG-128SIPMGG]	
	MG-SIP128 [MG-128SIPMGG-B]	
	MG-SIP128 [MG-128SIPMGJ]	
	MG-SIP128 [MG-128SIPMGJ-B]	
MG-T1(SIP)	MG-T1(SIP) Card [SCA-24DTIA]	
	MG-T1(SIP) [SCA-24DTIA-B]	
SR-MGC	SR-MGC(E)	

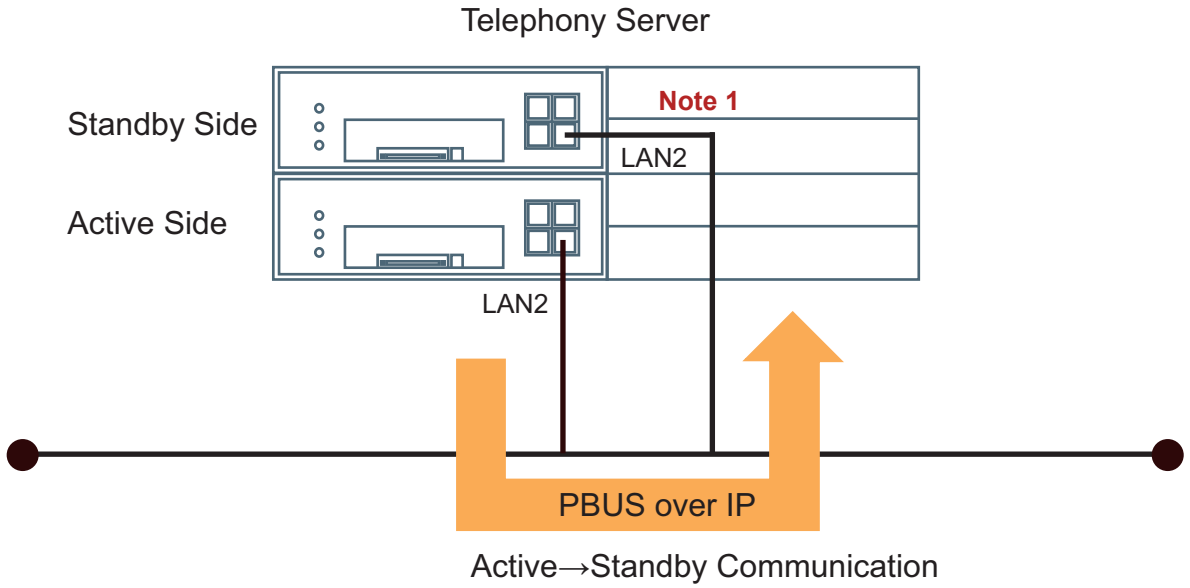
EQUIPMENT		REMARKS
VS32	VS-32(Dual) Card [SCA-VS32VA]	
	VS-32(Dual) Box [MG-VS32VA]	
	VS-32(Dual) [SCA-VS32VA-B]	
Multi Purpose Chassis (MPC)		
IPG Digital		
IPG Analog		
UG50		

7. PBUS over IP

PBUS over IP (Processor BUS over IP) is an interface for changing the sent and received data between nodes (CCN and RN, RN and RN, and Active side and Standby side) into IP packets, and then sending those packets to or receiving them from the intranet.

(a) IP ACT-Side Quick Restart by the OAI system and ACDP Quick initialization Features

PBUS over IP between Active side and Standby side is used for ACT-Side Quick Restart by the OAI system feature and ACDP Quick initialization feature. The PBUS over IP changes into IP packets the data sent between Active side and Standby side and also a memory copy is performed.

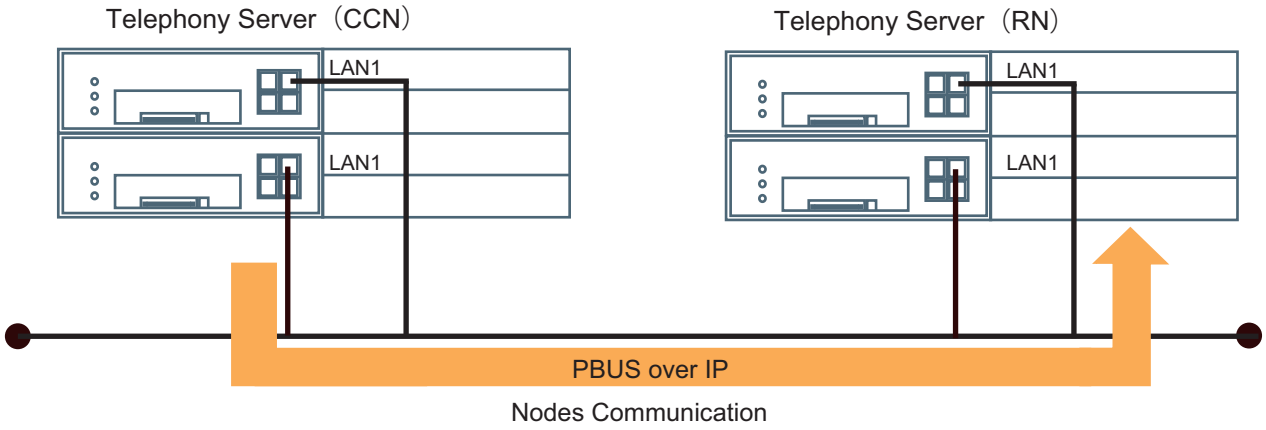


Note 1: ACT-Side Quick Restart by the OAI system and ACDP Quick initialization features use LAN2. However, in the UMGi system, PBUS over IP is fixed to LAN1 use.

(b) UMGi System

In the UMGi system, control signals between each processor (CCN and RN, RN and RN, and Active side and Standby side) are sent and received through an IP network (intranet).

UMGi System Communication



Note: The above configuration is an example of UMGi system configurations.

Note: In the UMGi system, PBUS over IP is fixed to LAN1 use.

8. How to Use Service Grounding Kit

Note: This section is exclusively for SV9500 Appliance Model.

Be sure to use a Portable Field Service Grounding Kit to prevent damage to static-sensitive components. The 3M® Model 8012 Portable Field Service Kit is recommended as an effective countermeasure against static electricity.

3M Model 8012, that consists of:

- 2 × 2 VELOSTAT® work mat
- 15 ft. (4.6 m) ground cord
- CHARGE-GUARD® wrist strap with alligator clip

Before handling circuit cards, spread out the work mat and then connect the ground cord to the frame or to another ground source.

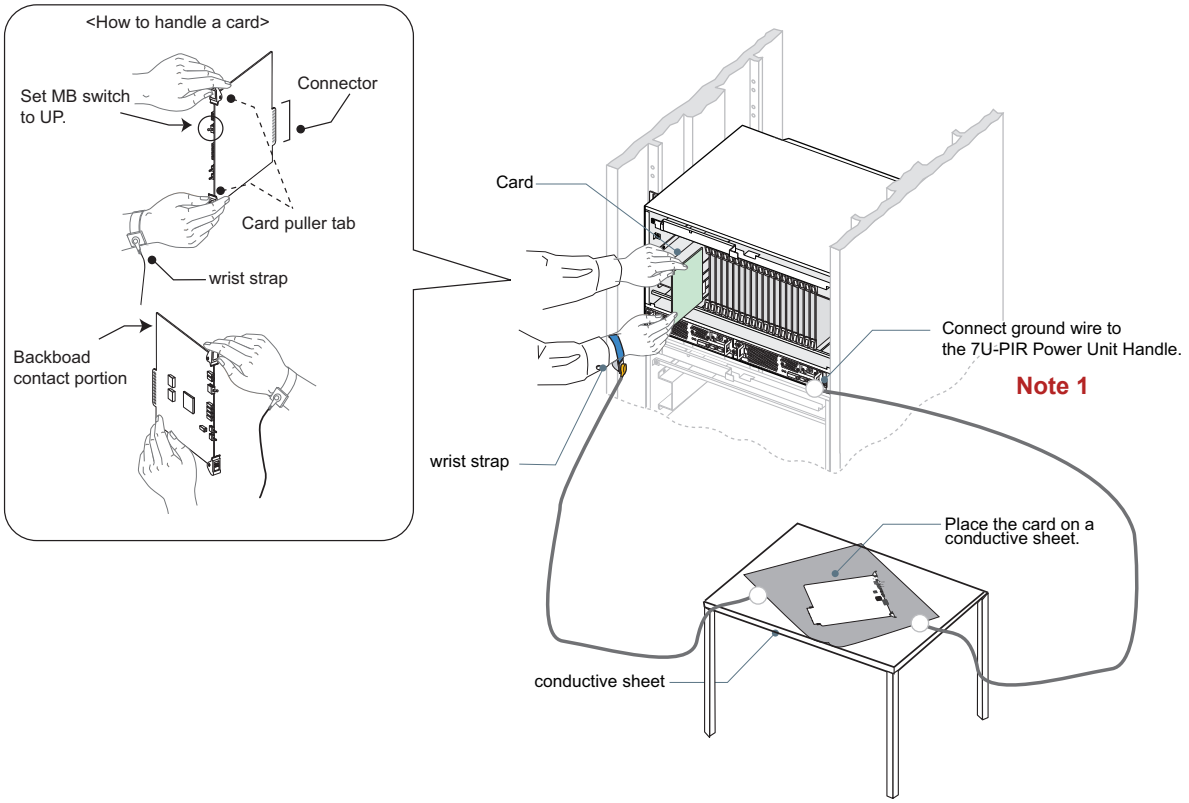
If using a CHARGE-GUARD wrist strap, then connect the wrist strap to the frame or to another ground using the cord that is included in the kit.

See the following figures for the way to use the service kit.

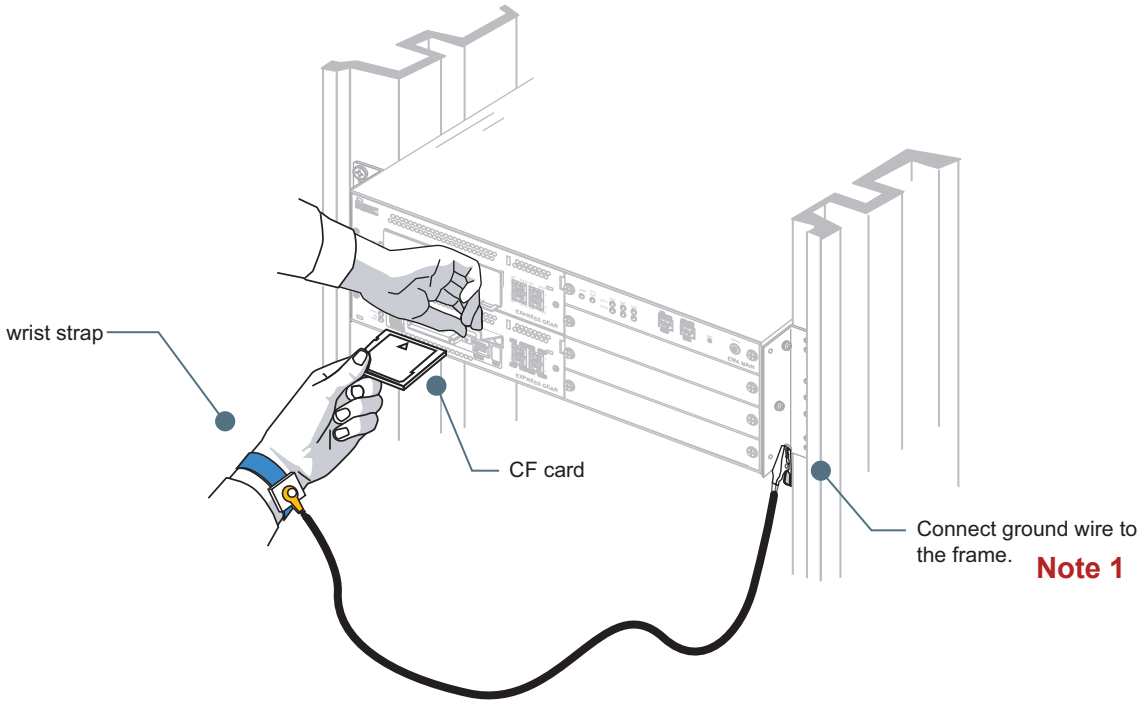
Take notes the precautions below before handling circuit card and CF card:

- Do not touch the surface, the mounted components, and gold-coated connectors of circuit card with bare hands.
- Band the wrist strap on the wrist before handling circuit card and CF card.
- Countermeasures against static electricity is necessary when inserting/ejecting CF card with the system powered on.

How to Use Service Kit (when handing circuit card)



How to Use Service Kit (when handing CF card)



Note 1: A ground wire should be connected to the frame which is not coated by insulating material.

CHAPTER 3
IP EQUIPMENT

1. Registration Destination of IP Devices/Stations

The following lists IP addresses of SV9500 to be assigned to each IP device/station as its registration destination. The IP address varies depending on several conditions, consisting of PH kind that handles the device/station, protocol mode in which the device/terminal operates, and configuration of SV9500. The table below specifies the IP address necessary for each IP device/station, covering all the conditions. For SV9500 Appliance Model, additional information about IP addresses is described in “Management by 4-LAN Port” on Appliance Model Installation Manual. For SV9500 Software Model, see “(Under study)” on Software Model Installation Manual. For SV9500 Prepackaged Server Model, see “Management by LAN Port” on Prepackaged Server Model Installation and Operation Manual.

Category		Device/Station	IP Address of Registration Destination **Note 1**	
PH	Protocol mode		Single Configuration	Dual Configuration
Internal PHE	Proprietary Protocol mode	Standard SIP Voice Terminal Standard SIP Video Terminal WLAN Handset (MH Series)	LAN1 IP Address (ACT) **Note 4**	LAN1 IP Address (ACT) **Note 4**
		Analog 2MC MC&MG-COT (MC part) VS32		
Internal PHI-BRI		MC&MG-COT (MG part) MG-COT MG(BRI) MG(SIP)	LAN1 IP Address (ACT) **Note 4**	LAN1 IP Address (ACT) **Note 4**
Internal PHI-PRI		MG(PRI) **Note 3**	LAN1 IP Address (ACT) **Note 4**	LAN1 IP Address (ACT) **Note 4**
SP-PHD		IP terminal	LAN1 IP Address (ACT) **Note 4**	LAN1 IP Address (ACT) **Note 4**
	SIP mode	SIP Multiple Line terminal	LAN1 IP Address (ACT)	LAN1 IP Address (ACT)
		Softphone (SIP)		
SP-PHI	Proprietary Protocol mode	MC&MG-COT (MG part) MG(BRI)	LAN1 IP Address (ACT) **Note 4**	LAN1 IP Address (ACT) **Note 4**
	SIP mode **Note 2**	MG-COT MG(BRI) MG(PRI) MG-T1(SIP) 8LC Card VS32	LAN1 IP Address (ACT)	LAN1 IP Address (System #0) /(System #1)
SIP Handler	SIP mode	Standard SIP Voice Terminal Standard SIP Video Terminal	LAN1 IP Address 2 (ACT)	LAN1 IP Address 2 (ACT)

Note 1: There is no dual configuration in SV9500 Prepackaged Server Model. Refer only to the single configuration.

Note 2: Specify LAN1 IP address (System #0/System #1) for the registration destination of the devices/terminals in this category. When your telephony system is configured in dual redundancy, you need to assign the IP address of System #0 to the Primary SIP Server address field and the IP address of System #1 to the Secondary SIP Server address field for each of the devices in this category.

Note 3: MG(PRI) in Proprietary Protocol mode uses LAN1 as the registration destination while it uses LAN2 as the signaling control port. LAN interface for the signaling control port, however, can be changed to LAN1 by the ADTM command.

Note 4: When migrating from an existing system to SV9500, LAN1/LAN2 can be selected as LAN interface for IP equipment/terminals that use Proprietary Protocol mode. For the details, refer to Migration Manual.

Note: The conditions for the list are as follows.

- Device/terminal names in the table are general terms. For the formal names, refer to "2. Terms in Manuals" in Chapter 2.
- In this manual, the Telephony Server may be referred as "DRS" or "SIP server" depending on the registration destination. IP address of DRS/SIP server is the same as that of the Telephony Server. Therefore, IP address of DRS/SIP server is as the previous table.
- The Telephony Server has processors on its CPU, TP and SP. For the information about it, refer to "4. Structure of SV9500 Appliance Model" - "4.1. General" in Chapter 2.

Registration Destination of the UG50

Category		Device/Station		IP Address of Registration Destination Note 5	
PH	Mode	UG50	Existing GW	Single Configuration	Dual Configuration
Internal PHE	Multi-slot	UG50 (LC) [Proprietary Protocol]	-	LAN1 IP Address (ACT)	LAN1 IP Address (ACT)
	IPG Note 6	UG50-IPG (Analog)	IPG Analog		
	Retrofit	UG50-4LC2COTA(COT) (MC part)	MC&MG-COT (MC part)		
		UG50-4LC2COTA(PGT) (MC part)	MC&MG-COT (MC part)		
		UG50-2MC	Analog 2MC		
SP-PHD (Proprietary Protocol mode)	Multi-slot	UG50 (DLC)	-	LAN1 IP Address (ACT)	LAN1 IP Address (ACT)
	IPG Note 6	UG50-IPG (Digital)	IPG Digital		
SP-PHI (Proprietary Protocol mode) Note 7	Multi-slot	UG50 (COT-TYPE1)	-	LAN1 IP Address (ACT)	LAN1 IP Address (ACT)
		UG50 (COT-TYPE2) [Proprietary Protocol]	-		
		UG50 (PGT-TYPE1)	-		
		UG50 (PGT-TYPE2) [Proprietary Protocol]	-		
	Retrofit	UG50-4LC2COTA(COT) (MG part)	MC&MG-COT (MG part)		
		UG50-6COT [Proprietary Protocol]	MG-6COT		
		UG50-4LC2COTA(PGT) (MG part)	MC&MG-COT (MG part)		
SP-PHI (SIP mode) Note 8	Multi-slot	UG50 (LC) [SIP]	-	LAN1 IP Address (ACT)	LAN1 IP Address (System #0) /(System #1)
		UG50 (PRT 1.5M) [SIP]	-		
		UG50 (PRT 2M) [SIP]	-		
		UG50 (COT-TYPE2) [SIP]	-		
		UG50 (PGT-TYPE2) [SIP]	-		
	Retrofit	UG50-8LC	8LC card		
		UG50-24PRIA [SIP]	MG (PRI) (SIP)		
		UG50-30PRIA [SIP]	MG (PRI) (SIP)		

Category		Device/Station		IP Address of Registration Destination Note 5	
PH	Mode	UG50	Existing GW	Single Configuration	Dual Configuration
Internal PHI-BRI (Proprietary Protocol mode) Note 7	Multi-slot	UG50 (COT-TYPE1)	-	LAN1 IP Address (ACT)	LAN1 IP Address (ACT)
		UG50 (COT-TYPE2) [Proprietary Protocol]	-		
		UG50 (PGT-TYPE1)	-		
		UG50 (PGT-TYPE2) [Proprietary Protocol]	-		
	Retrofit	UG50-4LC2COTA(COT) (MG part)	MC&MG-COT (MG part)		
		UG50-6COT [Proprietary Protocol]	MG-6COT		
		UG50-4LC2COTA(PGT) (MG part)	MC&MG-COT (MG part)		
Internal PHI-PRI (Proprietary Protocol mode)	Multi-slot	UG50 (PRT 1.5M) [Proprietary Protocol] Note 9	-	LAN1 IP Address (ACT)	LAN1 IP Address (ACT)
		UG50 (PRT 2M) [Proprietary Protocol] Note 9	-		
	Retrofit	UG50-24PRIA [Proprietary Protocol] Note 9	MG (PRI) (Proprietary Protocol)		
		UG50-30PRIA [Proprietary Protocol] Note 9	MG (PRI) (Proprietary Protocol)		

Note: When migrating from existing system to a SV9500, LAN1/LAN2 can be selected as LAN interface for IP Equipment/Terminals that use a proprietary protocol.

Note 5: There is no dual configuration in SV9500 Prepackaged Server Model. Refer only to the single configuration.

Note 6: IPG mode is not supported in SV9500 Prepackaged Server Model.

Note 7: The PH of the registration destination changes according to the system data (ASYDL SYS1 Index 1017 Bit 0).
<Target Media Gateway (MG)>
- UG50 (COT-TYPE1)
- UG50 (COT-TYPE2)
- MC&MG-COT (MG part)
- MG-6COT (Proprietary Protocol mode)
- UG50 (PGT-TYPE1)
- UG50 (PGT-TYPE2)

< In the case of ASYDL SYS1 Index 1017 Bit 0=0 (default settings)>
If a target MG is reset while SP-PHI is in operation, it will be preferentially registered to SP-

PHI. If SP-PHI is not in operation when the target MG tries to re-register, it will then re-register to the Internal PHI (BRI) of the TP part.
<In the case of ASYDL SYS1 Index 1017 Bit 0=1>
A target MG will be registered only to the Internal PHI.

Note 8: Equipment/terminals accommodated in the SP-PHI will set the Physical IP addresses (IP address (System 0)/ IP address (System 1)) of LAN1 as a registration destination. In the case of a CPU dual configuration system, each Physical IP address (IP address (System 0)/ IP address (System 1)) needs to be set as primary or secondary for each of the devices in this category.

Note 9: UG50-24PRIA [Proprietary Protocol], UG50-30PRIA [Proprietary Protocol], UG50 (PRT 1.5M) [Proprietary Protocol] and UG50 (PRT 2M) [Proprietary Protocol] set the IP address of LAN1 as a registration destination. However, LAN2 is used for transmitting a call control signal after registration. Call control signal can be changed to LAN1 by the ADTM command.

2. LAN Interface Accommodation

For SV9500 Appliance Model, SV9500 Software Model and SV9500 Prepackaged Server Model, LAN1 and LAN2 play a central role in managing the entire system. This section will explain LAN1 and LAN2.

2.1. LAN1 Accommodation

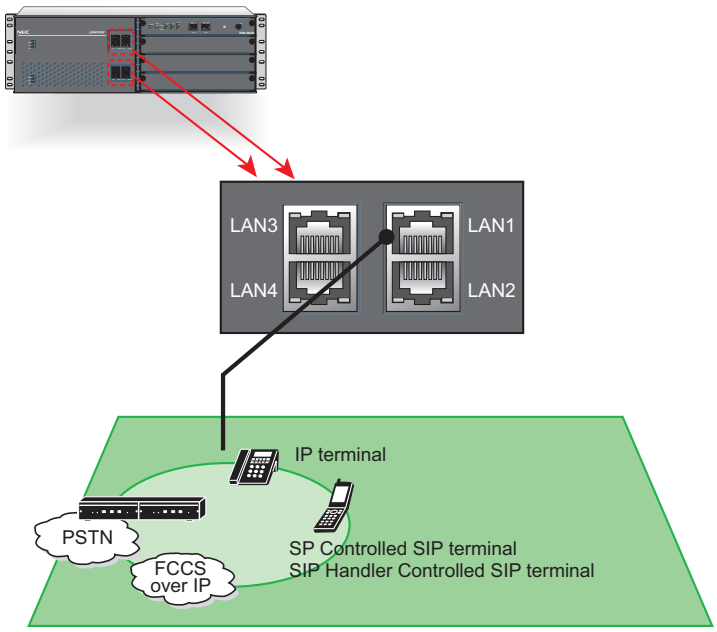
SV9500 LAN1 mainly accommodates the devices/terminals for call controlling. They do not need to keep links with SV9500 when system changeover is performed in dual configuration system. In each case where the system is in single configuration or dual configuration, IP address (ACT) is assigned to the devices/terminals as SV9500 address.

Note: There are no dual configuration in SV9500 Software Model and SV9500 Prepackaged Server Model. Refer only to the single configuration.

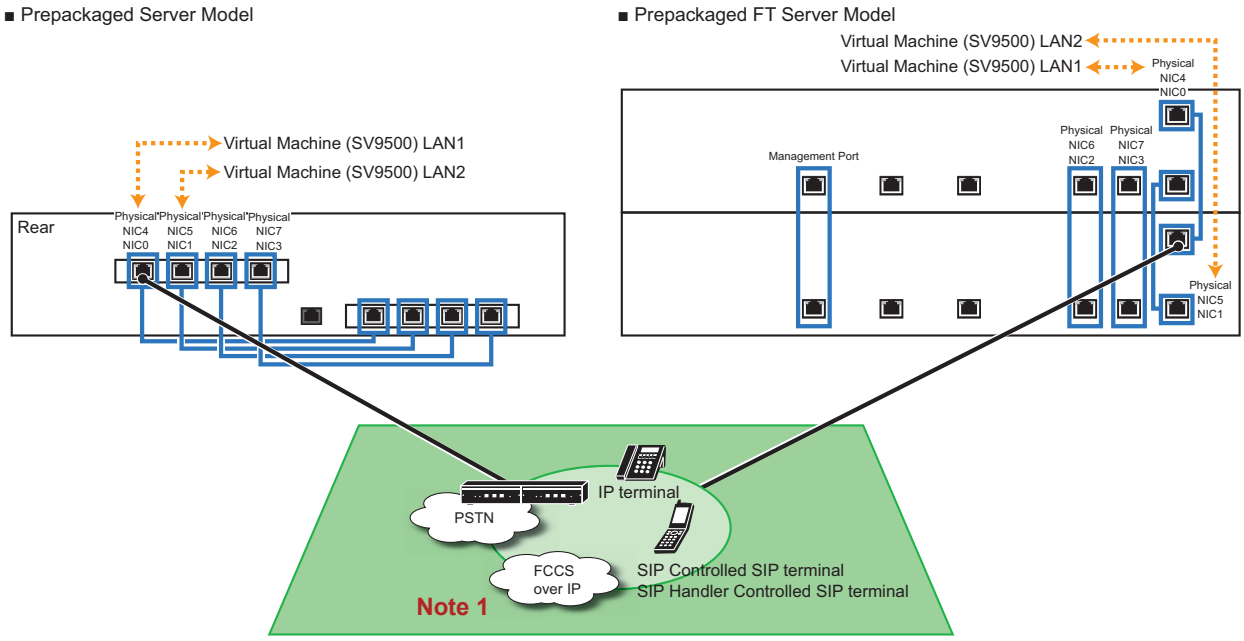
Note: When the system is in dual configuration, IP address (System #0/#1) is used instead of IP address (ACT) in the following cases.

- SV9500 address as FTP server.
- SV9500 address as registration destination for IP devices accommodated in SPPHI and using SIP mode. (See 1. Registration Destination of IP Devices/Stations).

[Configuration for SV9500 Appliance Model]

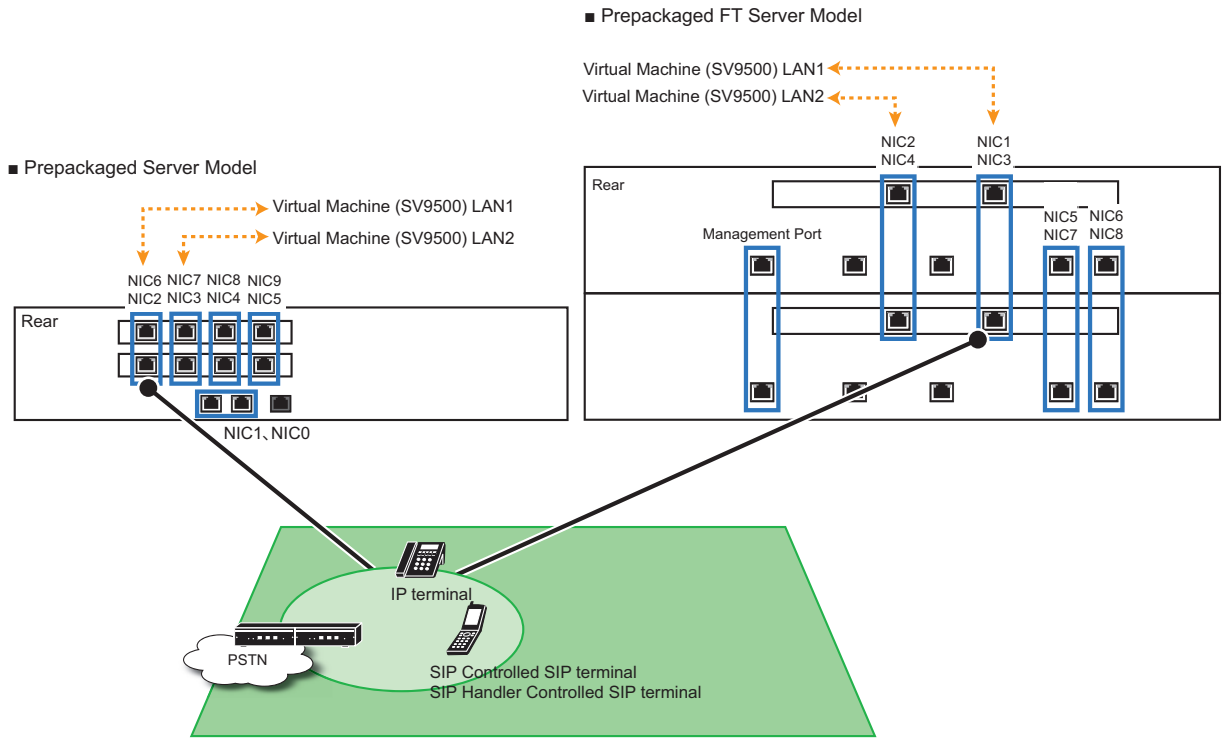


[Configuration for SV9500 Prepackaged Server Model (From FP95-112 V2)]



Note 1: FCCS over IP is available since FP95-112 V2

[Configuration for SV9500 Prepackaged Server Model (FP95-111 V1)]



[Configuration for SV9500 Software Model (From FP95-114 V4)]

SV9500 Software Model accommodates in LAN1 the same terminals/devices that Prepackaged Server Model does. However, in the case of SV9500 Software Model, depending on the system operating environment (hardware, etc), the configuration of the Physical NICs may be different. Perform the accommodation according to the operating environment.

Each communication using LAN1 as its interface is listed in the table below, where relationships between each application and socket are shown.

LAN1 Accommodation

Application	Protocol	Port No.	IP Address
Registration by Proprietary Protocol	UDP	3456	IP Address (ACT)
Registration by SIP	UDP	5060	IP Address (ACT) IP Address (System #0) IP Address (System #1)
Registration by SIP Handler Controlled SIP terminal	UDP	5060	IP Address 2 (ACT)
CCIS Cluster	TCP	60001	IP Address (ACT)
Internal PHI-BRI	UDP	64000	
NMS **Note 2**	TCP	60060	
Receiving Health Check from SR-MGC (Server)	UDP	60110	
Sending Health Check to SR-MGC (Client)	UDP	60120	
SR-MGC Charge MGC Side	TCP	60140	
SR-MGC Charge SR-MGC Side	TCP	60150	
Internal PHE	UDP	60130	
Internal PHF	UDP	60180	
FTP	TCP	20/21	IP Address (System #0) IP Address (System #1)
SSH	TCP	22	
Telnet	TCP	23	
HTTP	TCP	80	

Note: There is no dual configuration in SV9500 Software Model and SV9500 Prepackaged Server Model. Therefore, all the IP addresses are for the active side.

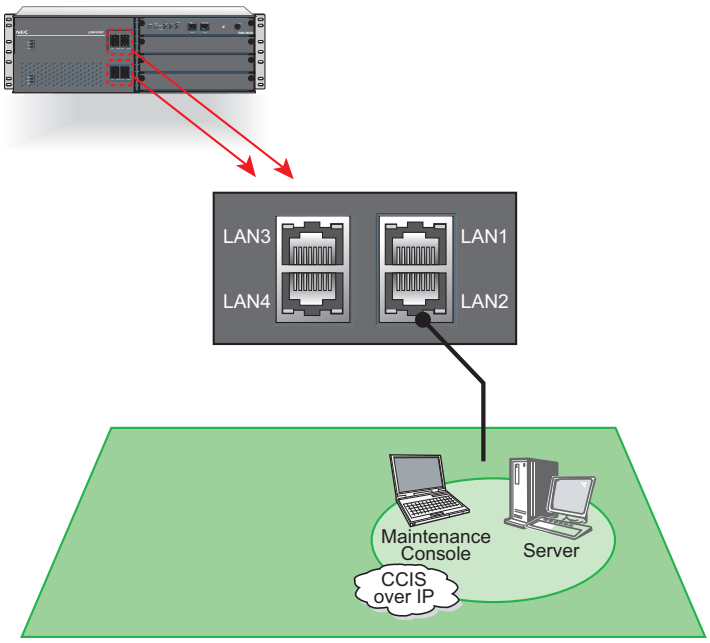
Note 2: NMS means the network management system. NMS monitors the devices of the network, detects a failure, and creates a report of the failure for maintenance.

2.2. LAN2 Accommodation

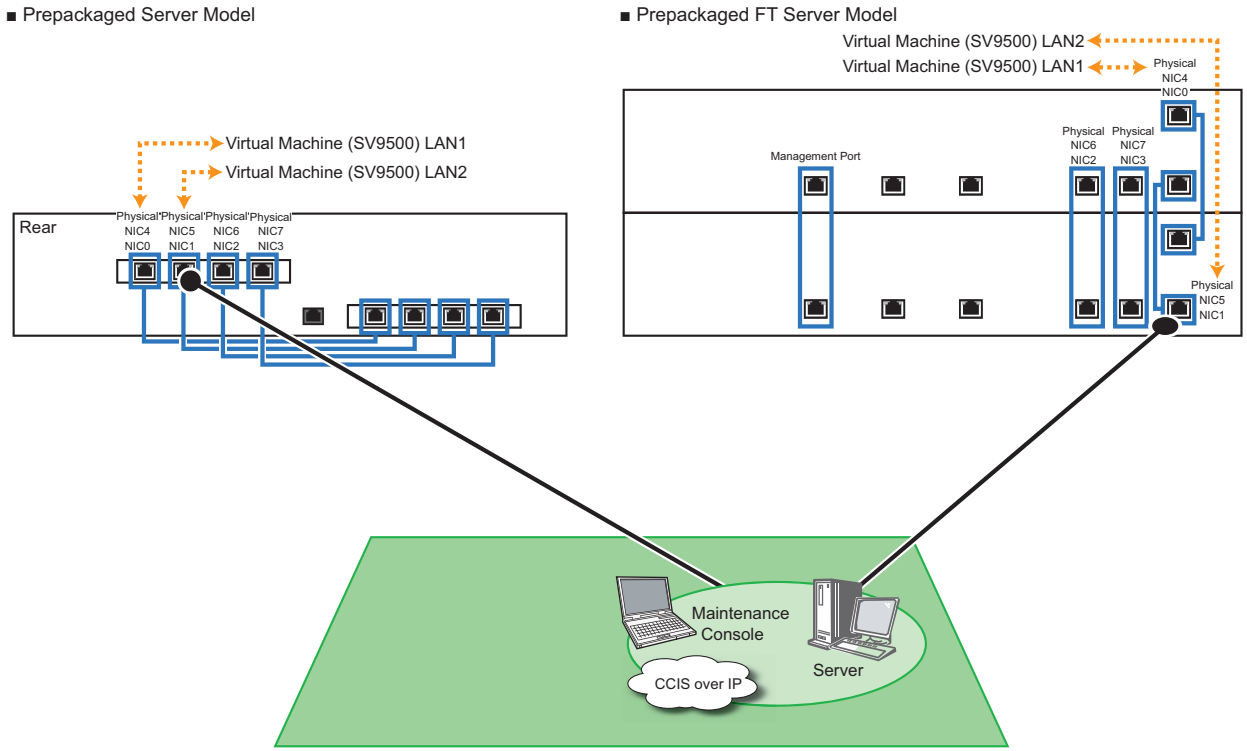
LAN2 mainly accommodates the devices for operation/administration and some of the devices for call controlling. These devices should remain connected to SV9500 when system changeover is performed in dual configuration system. In each case where the system is in single configuration or dual configuration, IP address (ACT) is assigned to the devices as SV9500 address.

Note: There are no dual configuration in SV9500 Software Model and SV9500 Prepackaged Server Model. Refer only to the single configuration.

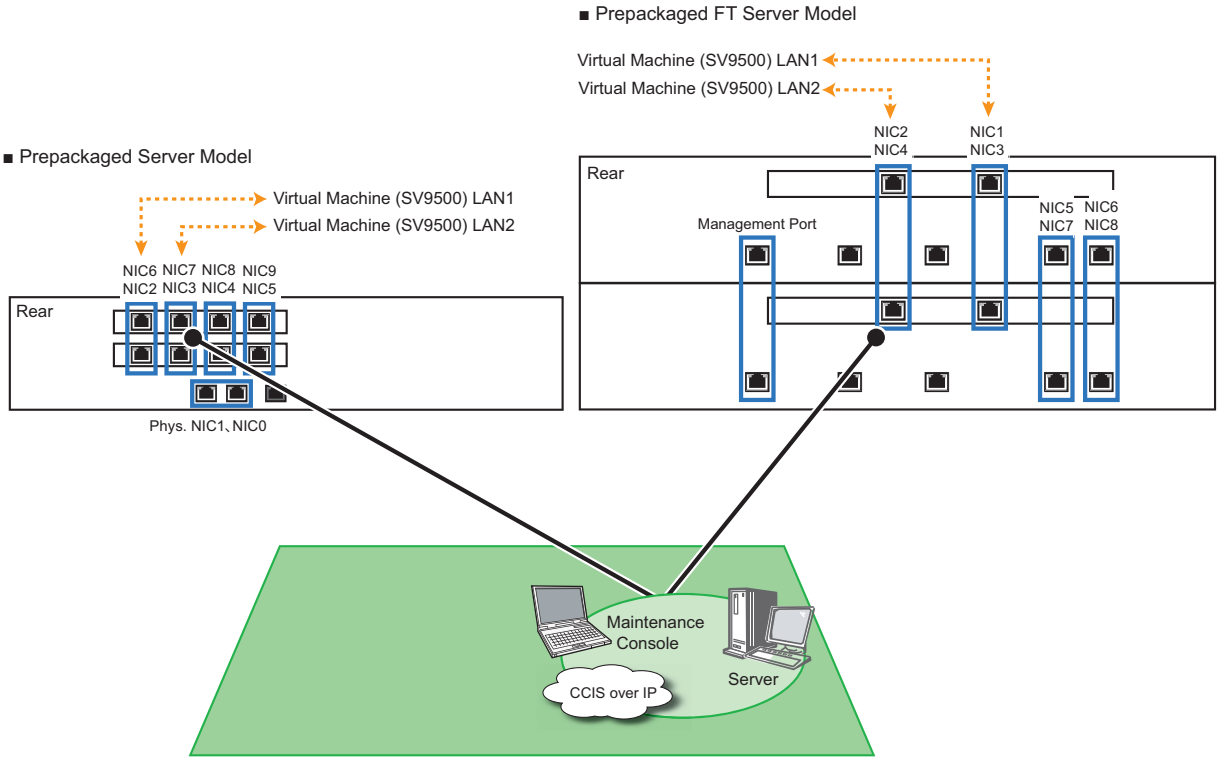
[Configuration for SV9500 Appliance Model]



[Configuration for SV9500 Prepackaged Server Model (FP95-112 V2)]



[Configuration for SV9500 Prepackaged Server Model (FP95-111 V1)]



[Configuration for SV9500 Software Model]

SV9500 Software Model accommodates in LAN2 the same terminals/devices that Prepackaged Server Model does. However, in the case of SV9500 Software Model, depending on the system operating environment (hardware, etc), the configuration of the Physical NICs may be different. Perform the accommodation according to the operating environment.

Each communication using LAN2 as its interface is listed in the table below, where relationships between each application and socket are shown.

LAN2 Accommodation

Application	Protocol	Port No.	IP Address
MAT **Note 1 Note 2**	TCP	60000	IP Address (ACT)
SMDR	TCP	60010	
MCI	TCP	60020	
OAI	TCP	60030	
MIS	TCP	60040	
PMS	TCP	60050	
CS Report	TCP	60080	
MCC	TCP	60190	
FCCS Cluster	TCP	60210	
EVLOG (DEBUG)	UDP	1024-65535	
SNMP	UDP	161/162	
SMTP (Client)	TCP	1024-65535	
DNS	UDP	53	
SNTP	UDP	123	
PBUS over IP	UDP	60220	
Internal PHI-PRI	TCP	64000	
Internal PHC (Server)	TCP	57000	
Internal PHC (Client)	TCP	65030	

Note 1: MAT means PCPro.

Note 2: Use LAN1 to make the connection with IPv6 addresses.

3. Port Number List

Port Number Quick Reference Table for System Component

COMPONENT	SECTION	TABLE
Telephony Server	[SV9500 Initially-used Port Numbers to Send and Receive Packets]	Initially-used port numbers by TP (also communicates with SP in another system-side)
		Initially-used port numbers by SP (also communicates with TP in another system-side)
IP-DTG	[SV9500 Initially-used Port Numbers to Send and Receive Packets]	Initially-used port numbers by Internal Software Digital Tone Generator (IP-DTG)
SR-MGC(E)	[SR-MGC(E) Initially-used Port Numbers to Send and Receive Packets]	Initially-used port numbers by TP
		Initially-used port numbers by SP
IPPAD	[IPPAD used Port Numbers to Send and Receive Packets]	Used port numbers by IPPAD
DtermIP (Proprietary Protocol)/INASET240G/INASET320XML	[DtermIP (Proprietary Protocol)/INASET240G/INASET320XML Initially-used Port Numbers to Send and Receive Packets]	Initially-used port numbers by DtermIP (Proprietary Protocol)/INASET240G/INASET320XML
DtermIP Inaset320	[DtermIP Inaset320 Initially-used Port Numbers to Send and Receive Packets]	Initially-used port numbers by DtermIP Inaset320
DtermIP(SIP)	[DtermIP(SIP) Initially-used Port Numbers to Send and Receive Packets]	Initially-used port numbers by DtermIP(SIP)
DT800	[DT800 Initially-used Port Numbers to Send and Receive Packets]	Initially-used port numbers by DT800
DT700	[DT700 Initially-used Port Numbers to Send and Receive Packets]	Initially-used port numbers by DT700
DT730G/DT770G	DT730G/DT770G Initially-used Port Numbers to Send and Receive Packets]	Initially-used port numbers by DT730G/DT770G
DtermSP30 (proprietary mode)	[DtermSP30 (proprietary mode) Initially-used Port Numbers to Send and Receive Packets]	Initially-used port numbers by DtermSP30 (proprietary mode)
DtermSP30 (SIP mode)	[DtermSP30 (SIP mode) Initially-used Port Numbers to Send and Receive Packets]	Initially-used port numbers by DtermSP30 (SIP mode)
DtermSP30 (VPCC client)	[DtermSP30 (VPCC client) Initially-used Port Numbers to Send and Receive Packets]	Initially-used port numbers by DtermSP30 (VPCC client)
DtermSP30 (VPCC server)	[DtermSP30 (VPCC server) Initially-used Port Numbers to Send and Receive Packets]	Initially-used port numbers by DtermSP30 (VPCC server)

COMPONENT	SECTION	TABLE
Soft Client SP350	[Soft Client SP350 Initially-used Port Numbers to Send and Receive Packets]	Initially-used port numbers by Soft Client SP350
Soft Client SP350 (VPCC client)	[Soft Client SP350 (VPCC client) Initially-used Port Numbers to Send and Receive Packets]	Initially-used port numbers by Soft Client SP350 (VPCC client)
Soft Client SP350 (VPCC server)	[Soft Client SP350 (VPCC server) Initially-used Port Numbers to Send and Receive Packets]	Initially-used port numbers by Soft Client SP350 (VPCC server)
Presence Server for DtermSP	[Presence Server for DtermSP Initially-used Port Numbers to Send and Receive Packets]	Initially-used port numbers by presence server for DtermSP
Analog 2MC	[Analog 2MC Initially-used Port Numbers to Send and Receive Packets]	Initially-used port numbers by Analog 2MC
VS32 (Proprietary)	[VS32 (Proprietary) Initially-used Port Numbers to Send and Receive Packets] Note 1	Initially-used port numbers by VS32 (Proprietary)
VS32 (SIP)	[VS32 (SIP) Initially-used Port Numbers to Send and Receive Packets]	Initially-used port numbers by VS32 (SIP)
MG-PRI (Proprietary) (T1, E1, NW+TE)	[MG-PRI (Proprietary) (T1, E1, NW+TE) Initially-used Port Numbers to Send and Receive Packets]	Initially-used port numbers by MG-PRI (Proprietary) (T1, E1, NW+TE)
MG-PRI (SIP) (T1, E1)	[MG-PRI (SIP) (T1, E1) Initially-used Port Numbers to Send and Receive Packets]	Initially-used port numbers by MG-PRI (SIP) (T1, E1)
MG-BRI (Proprietary)	[MG-BRI (Proprietary) Initially-used Port Numbers to Send and Receive Packets]	Initially-used port numbers by MG-BRI (Proprietary)
MG-BRI (SIP)	[MG-BRI (SIP) Initially-used Port Numbers to Send and Receive Packets]	Initially-used port numbers by MG-BRI (SIP)
MG-SIP	[MG-SIP Initially-used Port Numbers to Send and Receive Packets]	Initially-used port numbers by MG-SIP
MC&MG-COT	[MC&MG-COT Initially-used Port Numbers to Send and Receive Packets]	Initially-used port numbers by MC&MG-COT
SCA-6COT (Proprietary Protocol)	[SCA-6COT (Proprietary Protocol) Initially-used Port Numbers to Send and Receive Packets]	Initially-used port numbers by SCA-6COT (Proprietary Protocol)
SCA-6COT (SIP)	[SCA-6COT (SIP) Initially-used Port Numbers to Send and Receive Packets]	Initially-used port numbers by SCA-6COT (SIP)
8LC Card	[8LC Card Initially-used Port Numbers to Send and Receive Packets]	Initially-used port numbers by 8LC Card
MH250	[MH250 Initially-used Port Numbers to Send and Receive Packets]	Initially-used port numbers by MH250
IPG (Digital)	[IPG (Digital) Initially-used Port Numbers to Send and Receive Packets]	Initially-used port numbers by IPG (Digital)

COMPONENT	SECTION	TABLE
IPG (Analog)	[IPG (Analog) Initially-used Port Numbers to Send and Receive Packets]	Initially-used port numbers by IPG (Analog)
UG50	[UG50 Initially-used Port Numbers to Send and Receive Packets]	Initially-used port numbers by UG50

[SV9500 Initially-used Port Numbers to Send and Receive Packets]

A: Available, N: Not available, -: Not applicable

Initially-used port numbers by TP (also communicates with SP in another system-side)

Usage	TCP/UDP	LAN port	Sending port No.	Receiving port No.	Switching LAN port	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
DRS (Registration)	UDP	LAN1	3456		N	A	Dterm Series i with IP adapter, DtermIP	1024-65534	1	ADTM	
							DtermSP30 (Proprietary Protocol)				
							Analog 2MC				
							UG50-2MC				
							UG50 (DLC)				
							UG50 (LC) [Proprietary Protocol]				
							MC part of MC-MG				
							MG part of MC-MG				
							UG50-4LC2CO-TA (COT/PGT) (MG part)				
							UG50-4LC2CO-TA (COT/PGT) (MC part)				
							UG50 (COT-TYPE1)/(PGT-TYPE1)				
							MG(BRI) (Proprietary Protocol)				

Initially-used port numbers by TP (also communicates with SP in another system-side)

Usage	TCP/UDP	LAN port	Sending port No.	Receiving port No.	Switching LAN port	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
DRS (Registration)	UDP	LAN1	3456		N	A	MG(PRI) (Proprietary Protocol)	1024-65534	1	ADTM	
							UG50-24PRIA [Proprietary Protocol]				
							UG50 (PRT 1.5M) [Proprietary Protocol]				
							MG(SIP)				
							IPG Digital				
							UG50-IPG (Digital)				
							IPG Analog				
							UG50-IPG (Analog)				
							VS32 (Proprietary Protocol)				
							UG50-6COT [Proprietary Protocol]				
							SP (MPH)				
							SP (SIPPHI)				
							SP (SIPPHD)				
							SP (MH-SIP)				
							TP of other node				*Inquiry between MGCs (remote login, instant message)

Initially-used port numbers by TP (also communicates with SP in another system-side)

Usage	TCP/UDP	LAN port	Sending port No.	Receiving port No.	Switching LAN port	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
Internal PHI-PRI (Signaling)	TCP	LAN2	64000-65024		A	A	MG(PRI) (Proprietary Protocol)	1024-65534	1 port/device	ADTM	*Includes health check. *The number of used ports is proportional to the number of connected devices. *Only the initial port number can be changed. *The port number changes every time when they repeat disconnecting and reconnecting. Therefore, the range of used ports reaches an initial port number and the following 1024 port numbers, or all the port numbers excluding well-known ports.
							UG50-24PRIA [Proprietary Protocol]				
							UG50 (PRT 1.5M) [Proprietary Protocol]				
Internal PHI-BRI (Signaling)	UDP	LAN1	64000		N	A	MG(BRI) (Proprietary Protocol)	1024-65534	1		*Includes health check.
							MG part of MC-MG				*Includes health check.
							UG50-4LC2COTA (COT/PGT) (MG part)				
							MG(SIP)				*Includes health check.
							UG50-6COT [Proprietary Protocol]				*Includes health check.

Initially-used port numbers by TP (also communicates with SP in another system-side)

Usage	TCP/UDP	LAN port	Sending port No.	Receiving port No.	Switching LAN port	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
Internal PHE (Signaling)	UDP	LAN1	60130		N	A	Analog 2MC	1024-65534	1	ADTM	*Includes health check.
							UG50-2MC				
							UG50 (LC)				
							MC part of MC-MG				*Includes health check.
							UG50-4LC2CO-TA (COT/PGT) (MC part)				
							UG50-IPG (Analog)				
							VS32 (Proprietary Protocol)				*Includes health check.
							SP (MPH)				
							SP (SIPPHI)				
							SP (SIPPHD)				
							SP (MH-SIP)				
							SP (main)				

Initially-used port numbers by TP (also communicates with SP in another system-side)

Usage	TCP/UDP	LAN port	Sending port No.	Receiving port No.	Switching LAN port	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
Internal PHC server (Signaling)	TCP	LAN2	57000		A	A	P2P-CCIS (PHC) destination system SV9500(PHC) SV8500(PHC) SV7000 NEAX2400 IPX (PHC) NEAX2000 IPS(PHC)	1024-65534	1	ADTM	*You can change the port number of the server only when the opposite device uses internal PHC. (Both devices must have the same port number.) *The destination port depends on the client device.
Internal PHC client (Signaling)	TCP	LAN2	65030-65157		A	A		1024-65534	1 port/ destination (per IP address)		*The number of simultaneously-used ports is proportional to the number of destinations. *Only the initial port number can be changed. *The port number changes every time when they repeat disconnecting and reconnecting. Therefore, the range of used ports reaches an initial port number and the following 127 port numbers, or all the port numbers excluding well-known ports.
PHF (Signaling)	UDP	LAN1	60180		N	A	SV9500(PHF)/ SV8500 (PHF)/ SV7000/ NEAX2400 IPX (PHF)	1024-65534	1	ADTM	

Initially-used port numbers by TP (also communicates with SP in another system-side)

Usage		TCP/UDP	LAN port	Sending port No.	Receiving port No.	Switching LAN port	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
SIP Handler	SIP Signaling	UDP	LAN1-IP Address2 (ACT)	5060		Note 3	A	Standard SIP terminal	1024-65534	1	ADTM	LAN2 cannot be used. Default setting is LAN1 IP Address2 (ACT).
			LAN1-IP Address (ACT)	55060		Note 3	A		1024-65534	1	ADTM	
		TCP (Server) Note 6	LAN1-IP Address2 (ACT)	5060 Note 7		Note 3	A		1024-65534	1	ADTM	
			LAN1-IP Address (ACT)	55060 Note 7		Note 3	A		1024-65534	1	ADTM	
		TCP (Client) Note 6	LAN1-IP Address2 (ACT)	53000-54999		Note 3	N		-	Max. 2000	-	
			LAN1-IP Address (ACT)			Note 3	N				-	

Initially-used port numbers by TP (also communicates with SP in another system-side)

Usage		TCP/UDP	LAN port	Sending port No.	Receiving port No.	Switching LAN port	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
SIP Handler	DRS Registration	UDP	Same LAN setting as SIP Signaling	60300		Note 3	A	TP Part (DRS)	-	1	ADTM	LAN2 cannot be used. Default setting is LAN1 IP Address2 (ACT).
	Negotiation (prepared)	UDP		60301		Note 3	A	Destination IP equipment of call connection or Device controlling the destination IP equipment	-	1	ADTM	
		TCP (Server) Note 6		60301 Note 7		Note 3	A		-	1	ADTM	
		TCP (Client) Note 6		53000-54999		Note 3	N		-	Max. 2000	-	
	TLS Note 6	TCP (Server)	LAN1-IP Address2 (ACT)	5061		Note 3	A	Standard SIP terminal	1024-65534	1	ADTM	
			LAN1-IP Address (ACT)	55061		Note 3	A		1024-65534	1	ADTM	
	Dummy RTP Port	UDP		60304, 60305		Note 3	N		-	2	-	Default setting is LAN1 IP Address2 (ACT) Note 4
PBUS over IP		UDP	LAN2	60220		N	N		-	1	-	
RNIP/UMGi system (Signaling)		UDP	LAN1	60220		A	A	SV9500 (RNIP/UMGi system)	1024-65534	1	ADTM	*RNIP/UMGi system Note 5
IPTRK (FCCS) voice		UDP		56000-56127		-	N	IPTRK	-	-	-	
IPTRK (FCCS) (Signaling)		TCP		1024 -5000	54000	-	N	IPTRK	-	-	-	
PCPro		TCP	LAN2 Note 1	60000		A	A	PCPro	1024-65534	1	ADTM	

Initially-used port numbers by TP (also communicates with SP in another system-side)

Usage	TCP/UDP	LAN port	Sending port No.	Receiving port No.	Switching LAN port	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
PCPro tools	TCP	LAN1	Same with FTP server (in passive mode)		N	N	PCPro tools	-	-	-	*Sending/receiving port of a FTP client: 1024-65535 (passive mode)
SMDR	TCP	LAN2	60010		A	A	SMDR external device	1024-65534	1		
MCI	TCP	LAN2	60020		A	A	MCI external device	1024-65534	1		
OAI	TCP	LAN2	60030		N	A	Associate/claim server	1024-65534	1		*IP station claim process, Associate
		LAN2			N	A	Associate-compatible terminal	1024-65534	1		*Associate
MIS	TCP	LAN2	60040		A	A	MIS external device	1024-65534	1		
PMS	TCP	LAN2	60050		A	A	PMS external device	1024-65534	1		*Hotel PMS
NMS	TCP	LAN1	60060		N	A	MGC	1024-65534	1	ADTM	*Primary data polling process (CCIS cluster)
MCC	TCP	LAN2	60190		A	A	MCC external device	1024-65534	1		*Hotel wake-up call console
A/S (server)	TCP	LAN2	1024-65535	60001	N	A	TP of other node	1024-65534	1		*FLF table synchronization (CCIS cluster)
A/S (client)	TCP	LAN2	1024-65535	60001	N	A	TP of other node	1024-65534	1		*FLF table synchronization (CCIS cluster)
Health check between MGC and SR-MGC	UDP	LAN1	60120	60110	N	A	SR-MGC	1024-65534	1		*You can change the destination port as well (default: 60110).

Initially-used port numbers by TP (also communicates with SP in another system-side)

Usage	TCP/UDP	LAN port	Sending port No.	Receiving port No.	Switching LAN port	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
Data download between MGC and SR-MGC	TCP	LAN1	60060		N	A	SR-MGC	1024-65534	1		
Charge polling between MGC and SR-MGC (Client)	TCP	LAN1	1024-65535 **Note 2**		N	A	SR-MGC (Server)	-	1		
SMTP client	TCP	LAN2	1024-65535 **Note 2**		N	N	PC (SMTP server)	-	-	-	*Sending/receiving port of a SMTP server: 25
FTP server (in passive mode)	TCP	LAN1	Data port/Control port: 1024-65535 **Note 2**/21		N	N	PC (FTP client)	-	-	-	*Sending/receiving port of a FTP client: 1024-65535 (passive mode)/21
SNMP (GET/SET)	UDP	LAN2	161		N	N	PC (SNMP manager)	-	-	-	
SNMP (Trap)	UDP	LAN2	1024-65535 **Note 2**	No receiving	N	N	PC (SNMP manager)	-	-	-	*Sending/receiving port of a SNMP manager: various/162
SNTP	UDP	LAN2	123		N	A	PC (NTP server)	1024-65534	1	ADTM	
DNS	UDP	LAN2	53		N	A	PC (DNS server)	1024-65534	1		
Location information management (server)	TCP	LAN2	1024-65535	60210	N	A	TP of other node	1024-65534	1	AFCMN	*Location information management (FCCS cluster)
Location information management (client)	TCP	LAN2	1024-65535	60210	N	A	TP of other node	1024-65534	1		*Location information management (FCCS cluster)

Initially-used port numbers by TP (also communicates with SP in another system-side)

Usage	TCP/UDP	LAN port	Sending port No.	Receiving port No.	Switching LAN port	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
DRS(Registration) for FCCS Cluster	UDP	LAN1	5060		N	N	DT800/DT700 Series, DtermIP(SIP), DtermSP30 (SIP), Soft Client SP350	-	1	-	*Address list notification (FCCS cluster)
EVLOG (DEBUG)	UDP	LAN2	1024-65535	No receiving	N	N	PCPro	-	1	-	*EVLOG (DEBUG) output * All the devices with a specified UDP port opened mean the destination devices.
SSH	TCP	LAN1	22		N	N	PC (SSH client)	-	-	-	
Telnet	TCP	LAN1	23		N	N	PC (Telnet client)	-	-	-	
HTTP	TCP	LAN1	80		N	N	Includes Dterm.	-	-	-	*For firmware update.
System call handling process	UDP	LAN1	3458	3457	N	N	TP	-	-	-	
Auto-applying patches for initial setting	UDP	LAN1	3466		N	N	TP	-	-	-	*A local loopback IP address is used.

Initially-used port numbers by SP (also communicates with TP in another system-side)

Usage	TCP/UDP	LAN port	Sending port No.	Receiving port No.	Switching LAN port	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
SIPPHD/MH-SIP (SIP Signaling)	UDP	LAN1	5060		N	A	SIP Multiple Line terminal Softphone (SIP) MH series	1024-65534	1	*1	*1: You can change the port number with either of the following three, which must be followed by initializing “sipsv_sip”; The preceding numbers represent their priority orders: 1.“SipSrvSipPort” parameter of “SPconfig.conf” 2.“SipSrvSipPort” parameter of “StaticInfo.txt” 3.Changing the port number of SIP Server with ASSDL/N command
MPH (Registration)	UDP	LAN1	3480		N	A	TP (DRS)	1024-65534	1	*2	*Registration to MPH *2: ADTM SPconfig.conf (port sending to TP) MPHconfig.conf (port receiving from TP)
MPH (Maintenance)	UDP	LAN1	60134		N	A	TP (PHE)	1024-65534	1	*3	*3: ADTM SPconfig.conf (port sending to TP) MPHconfig.conf (port receiving from TP)
PHD (Signaling)	UDP	LAN1	64102		N	A	TP (PHE)	1024-65534	1	ALIDL	*iLP-PM sending and receiving (Including health check)
PHD (Signaling)	UDP	LAN1	60090		N	A	Dterm Series i with IP adapter, DtermIP DtermSP30 (Proprietary Protocol)	1024-65534	1	ALIDL	*Includes health check. *Includes health check.

Initially-used port numbers by SP (also communicates with TP in another system-side)

Usage	TCP/UDP	LAN port	Sending port No.	Receiving port No.	Switching LAN port	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
PHD (to handle internal errors)	UDP	LAN1	61023		N	A	PHD (in the same SP)	1024-65534	1	Modify config file.	*This port is used to internally-communicate with PHD in the same SP (loopback).
SIPPHD (DRS Registration)	UDP	LAN1	12000		N	A	TP (DRS)	1024-65534	1port/ SP (SIP-PHD)	*4	*For terminal registration. *4: “SIPPHD_DrsPort” parameter in “PHDconfig.conf”. After changing the port number, initialize the PHD process.
SIPPHD (Protims)	UDP	LAN1	12001		N	A	PHD (in the same SP)	1024-65534	1port/ SP (SIP-PHD)	*5	*This port is used for communication between PHD and SIPPHD in the same SP (loopback). *5: “SIPPHD_ProtimsPort” parameter in “PHDconfig.conf”. After changing the port number, initialize the PHD process.

Initially-used port numbers by SP (also communicates with TP in another system-side)

Usage	TCP/UDP	LAN port	Sending port No.	Receiving port No.	Switching LAN port	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
SIPPHD (prepared)	UDP	LAN1	12002		N	A	Dterm Series i with IP adapter, DtermIP	1024-65534	1port/ SP (SIP-PHD)	*6	*6: "SIPPHD_p2pPort" parameter in "PHDconfig.conf". After changing the port number, initialize the PHD process.
							DtermSP30 (Proprietary Protocol)				
							Analog 2MC				
							UG50-2MC				
							UG50 (DLC)				
							UG50 (LC) [Proprietary Protocol]				
							MC part of MC-MG				
							MG part of MC-MG				
							UG50-4LC2COTA (COT/PGT) (MC part)				
							UG50-4LC2COTA (COT/PGT) (MG part)				
							UG50 (COT-TYPE1) /(PGT-TYPE1)				
							MG(BRI) (Proprietary Protocol)				

Initially-used port numbers by SP (also communicates with TP in another system-side)

Usage	TCP/UDP	LAN port	Sending port No.	Receiving port No.	Switching LAN port	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
SIPPHD (prepared)	UDP	LAN1	12002		N	A	MG(PRI) (Proprietary Protocol) UG50-24PRIA [Proprietary Protocol] UG50 (PRT 1.5M) [Proprietary Protocol] MG(SIP) IPG Digital UG50-IPG (Digital) IPG Analog UG50-IPG (Analog) VS32 (Proprietary Protocol) UG50-6COT [Proprietary Protocol] IPPAD SP (MPH) SP (SIPPHI) SP (SIPPHD) SP (MH-SIP) SP (Prepared)	1024-65534	1port/ SP (SIPPHD)	*6	*6: “SIPPHD_p2pPort” parameter in “PHDconfig.conf”. After changing the port number, initialize the PHD process.

Initially-used port numbers by SP (also communicates with TP in another system-side)

Usage	TCP/UDP	LAN port	Sending port No.	Receiving port No.	Switching LAN port	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
SIPPHD (H.245)	TCP	LAN1	12003-20000		N	A	Dterm Series i with IP adapter, DtermIP	1024-65534	1 port/ call path *7	*8	*The default port range is 12003 to 20000. If you specify the port range in “PHDconfig.conf”, unoccupied ports are cyclically-searched to use. *Up to 1024 ports can be used. *7: An ON path uses the port; an OFF path releases the port; a reserved path holds the path. *8: Specify the port range from 1024 to 65534 on “H245StartPortNum” and “H245EndPortNum” parameters in “PHDconfig.conf”. After changing the port range, initialize the PHD process.
							DtermSP30 (Proprietary Protocol)				
							Analog 2MC				
							MC part of MC-MG				
							MG part of MC-MG				
							MG(BRI) (Proprietary Protocol)				
							MG(PRI) (Proprietary Protocol)				
							MG(SIP)				
							VS32 (Proprietary Protocol)				
							SCA-6COT (Proprietary Protocol)				
							IPPAD				
							SP (MPH)				
							SP (SIPPHI)				
							SP (SIPPHD)				
							SP (MH-SIP)				
							SP (Prepared)				

Initially-used port numbers by SP (also communicates with TP in another system-side)

Usage	TCP/UDP	LAN port	Sending port No.	Receiving port No.	Switching LAN port	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
Multiple Line SIP (SIP Presence Server)	UDP	LAN1	1024-65535 **Note 2**		N	N	Presence Server	-	1port/ SP (SIP-PHD)	-	*SIPPHD uses UDP to communicate with the Presence Server as a Remote Procedure Call (RPC) client. In this communication, SIPPHD uses the RPC library of Linux. An unoccupied port is selected in the library to use. The used port number varies depending on message transmission (including REGISTER by a terminal) though only one port is always used.
PHI (Signaling)	UDP	LAN1	64105		N	A	TP (PHE)	1024-65535	1	ALIDL *9	*9: When registering SP-PHI
PHI (Signaling)	UDP	LAN1	64010		N	A	MG-BRI (SIP)	1024-65535	1	ALIDL *10	*10: When registering SP-PHI
SIPPHI (DRS Registration)	UDP	LAN1	22000		N	A	TP (DRS)	1024-65535	1	PHIconfig.conf	*Terminal registration
SIPPHI (iLPPM)	UDP	LAN1	22001		N	A	PHI (in the same SP)	1024-65535	1		*This port is used for communication between PHI and SIPPHI in the same SP (loopback).
SIPPHI (prepared)	UDP	LAN1	22002		N	A	*11	1024-65535	1		*11: Same as the “SIPPHD (prepared)”
SIPPHI (H.245)	TCP	LAN1	22003-26000		N	A	*12	1024-65535	2000		*12: Same as the “SIPPHD (H.245)”
SIP(MH250 and Standard SIP terminal)-SIP (DRS Registration)	UDP	LAN1	7000-8000		N	A	TP (DRS)	1024-65534	1port/ SP(SIP PHE)	*13	*Searches an unoccupied port in descending order from the specified range. *13: Specify the port range from 1024 to 65534 on “StartPortNum” and “EndPortNum” parameters in “StaticInfo.txt”. After changing the port range, initialize the PHE process.

Initially-used port numbers by SP (also communicates with TP in another system-side)

Usage	TCP/UDP	LAN port	Sending port No.	Receiving port No.	Switching LAN port	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
SIP(MH250 and Standard SIP terminal)-SIP (Q.931 Signaling)	UDP	LAN1	7000-8000		N	A	TP (PHE)	1024-65534	1port/ SP (SIP-PHE)	*14	*Searches an unoccupied port in descending order from the specified range. *14: Specify the port range from 1024 to 65534 on “StartPortNum” and “EndPortNum” parameters in “StaticInfo.txt”. After changing the port range, initialize the PHE process.
SIP(MH250 and Standard SIP terminal)-SIP (prepared)	UDP	LAN1	7000-8000		N	A	*15	1024-65534	1port/ SP (SIP-PHE)	*16	*Searches an unoccupied port in descending order from the specified range. *15: Same as the “SIPPHD (prepared)” *16: Specify the port range from 1024 to 65534 on “StartPortNum” and “EndPortNum” parameters in “StaticInfo.txt”. After changing the port range, initialize the PHE process.
SIP(MH250 and Standard SIP terminal)-SIP(H.245)	TCP	LAN1	7000-8000		N	A	*17	1024-65534	1port/ call path *18	*19	*Searches cyclically unoccupied ports from the specified range. *Up to 1024 ports can be used. *17: Same as the “SIPPHD (H.245)” *18: An ON path uses the port; an OFF path releases the port. *19: Specify the port range from 1024 to 65534 on “StartPortNum” and “EndPortNum” parameters in “StaticInfo.txt”. After changing the port range, initialize the PHE process.

Initially-used port numbers by SP (also communicates with TP in another system-side)

Usage	TCP/UDP	LAN port	Sending port No.	Receiving port No.	Switching LAN port	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
SIP(MH250 and Standard SIP terminal)-syslog	UDP	LAN1	7000-8000		N	A	Remote Syslog server	1024-65534	1port/SP (SIP-PHE)	*20	*Searches an unoccupied port in descending order from the specified range. *20: Specify the port range from 1024 to 65534 on “StartPortNum” and “EndPortNum” parameters in “StaticInfo.txt”. After changing the port range, initialize the PHE process.
Traffic report of wireless LAN terminal	UDP	LAN1	7000-8000		N	A	Application to measure wireless LAN terminal traffic	514, 1024-65534	1port/SP (SIP)	*21	*Searches an unoccupied port in descending order from the specified range. *21: You can specify 514 and 1024 to 65534 in “TRAFFIC REPORT” tab in ASSDL/N command. Each SP can have up to four destinations to which you can assign ports selecting from 514 and 1024 to 65534.
SIP(MH250 and Standard SIP terminal)-SIP(SIP Presence Server)	UDP	LAN1	1024-65535 **Note 2**		N	N	Presence Server	-	1port/SP(SIP PHE)	-	*SIPPHE uses UDP to communicate with the Presence Server as a Remote Procedure Call (RPC) client. In this communication, SIPPHE uses the RPC library of Linux. An unoccupied port is selected in the library to use. The used port number varies depending on message transmission (including REGISTER by a terminal) though only one port is always used.
Reserved	UDP	LAN1	31000		-	-	-	-	-	-	*This port number is not available.
Reserved	UDP	LAN1	31002		-	-	-	-	-	-	*This port number is not available.
Reserved	TCP	LAN1	31003-32027		-	-	-	-	-	-	*This port number is not available.
telnet	TCP	LAN1	23		N	N	PC	-	-	-	*Port number of PC: various
FTP	TCP	LAN1	20/21		N	N	PC	-	-	-	

Initially-used port numbers by SP (also communicates with TP in another system-side)

Usage	TCP/UDP	LAN port	Sending port No.	Receiving port No.	Switching LAN port	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
SP switchover between ACT-Standby (Duplicator)	TCP	LAN1	7901		N	A	Opposite SP (in dual configuration)	1024-65534	1	Modify config file.	
SP log collection (for engineer, available since S1)	TCP	LAN1	65430		N	N	PC	-	-	-	*HTTP *Closed in a normal operation. Opened only to activate SP log collection. *Uses TCP-80 when using CCIS-SIP (IPM).
MPH (auto-applying patches for initial setting)	UDP	LAN1	3459		N	N	System call handling process	-	-	-	*A local loopback IP address is used.
PHI (auto-applying patches for initial setting)	UDP	LAN1	3460		N	N	System call handling process	-	-	-	*A local loopback IP address is used.
PHD (auto-applying patches for initial setting)	UDP	LAN1	3461		N	N	System call handling process	-	-	-	*A local loopback IP address is used.
Reserved	UDP	LAN1	3462		-	-	-	-	-	-	*This port number is not available.
SP_BOOT (auto-applying patches for initial setting)	UDP	LAN1	3463		N	N	System call handling process	-	-	-	*A local loopback IP address is used.
SIPSV_PHE (auto-applying patches for initial setting)	UDP	LAN1	3464		N	N	System call handling process	-	-	-	*A local loopback IP address is used.
SIPSV__SIP (auto-applying patches for initial setting)	UDP	LAN1	3465		N	N	System call handling process	-	-	-	*A local loopback IP address is used.

Initially-used port numbers by Internal Software Digital Tone Generator (IP-DTG)

Usage		TCP/UDP	LAN port	Sending port No.	Receiving port No.	Switching LAN port	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
IP-DTG	DRS Registration	UDP	LAN1	60310		N	N	TP part (DRS)	-	1	-	
	Signaling	UDP	LAN1	60312		N	N	TP part (Internal PHE)	-	1	-	
	prepared	UDP	LAN1	60311		N	N	Destination IP equipment of call connection or Device controlling the destination IP equipment (SIP Handler)	-	1	-	
	RTP/RTCP	UDP	LAN1	60314, 60315		N	N	Destination IP equipment of call connection	-	2	-	

Note 1: Use LAN1 to make the connection with IPv6 addresses.

Note 2: Depends on the OS.

Note 3: Switching to LAN2 port is not available. Select either LAN1 IP Address2 (ACT) or LAN1 IP Address (ACT).

Note 4: Dummy RTP port number is used when the Telephony Server sends an SDP Answer but the Telephony Server cannot notify IP or port number of the destination while the speech path has been disconnected.

Note 5: UMGi has taken over Remote Node over IP since FP95-112 V2.

Note 6: TCP is available from FP95-114 V4.

Note 7: When changed with the ADTM command, UDP port is also changed with the same new port number.

[SR-MGC(E) Initially-used Port Numbers to Send and Receive Packets]

A: Available, N: Not available, -: Not applicable

Initially-used port numbers by TP

Usage	TCP/UDP	LAN port	Sending port No.	Receiving port No.	Switching LAN port	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
DRS (Registration)	UDP	LAN1	3456		N	A	*1	1024-65534	1	ADTM	*1: Same as the “DRS (Registration)” in the table “Initially-used port numbers by TP (also communicates with SP in another system-side).”
Internal PHI-PRI (Signaling)	TCP	LAN1	64000-65024		N	A	MG(PRI) (Proprietary Protocol) UG50-24PRIA [Proprietary Protocol] UG50-30PRIA [Proprietary Protocol] UG50 (PRT 1.5M) [Proprietary Protocol] UG50 (PRT 2M) [Proprietary Protocol]	1024-65534	1 port/device	ADTM	*Includes health check. *The number of simultaneously-used ports is proportional to the number of connected devices. *Only the initial port number can be changed. *The port number changes every time when they repeat disconnecting and reconnecting. Therefore, the range of used ports reaches an initial port number and the following 1024 port numbers, or all the port numbers excluding well-known ports.

Initially-used port numbers by TP

Usage	TCP/UDP	LAN port	Sending port No.	Receiving port No.	Switching LAN port	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
Internal PHI-BRI (Signaling)	UDP	LAN1	64000		N	A	MG part of MC-MG	1024-65534	1	ADTM	*Includes health check.
							MG(BRI) (Proprietary)				*Includes health check.
							UG50-4LC2CO-TA (COT/PGT) (MG part)				
							MG(SIP)				
							SCA-6COT [Proprietary Protocol]				
							UG50-6COT [Proprietary Protocol]				
							UG50 (COT-TYPE2)/(PGT-TYPE2) [Proprietary Protocol]				

Initially-used port numbers by TP

Usage	TCP/UDP	LAN port	Sending port No.	Receiving port No.	Switching LAN port	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
PHE (Signaling)	UDP	LAN1	60130		N	A	Analog 2MC	1024-65534	1	ADTM	
							UG50-2MC				
							UG50 (LC) [Proprietary Protocol]				
							MC part of MC-MG				
							UG50-4LC2COTA (COT/PGT) (MC part)				
							UG50-IPG (Analog)				
							VS32 (Proprietary Protocol)				
							SP (MPH)				
							SP (SIPPHI)				
							SP (SIPPHD)				
							SP (MH-SIP)				
							SP (main)				

Initially-used port numbers by TP

Usage	TCP/UDP	LAN port	Sending port No.	Receiving port No.	Switching LAN port	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
PCPro	TCP	LAN1	60000		N	A	PCPro	1024-65534	1	ADTM	
NMS	TCP	LAN1	60060		N	A		1024-65534	1		
Health check between MGC and SR-MGC	UDP	LAN1	60120	60110	N	A	TP of other node	1024-65534	1		*You can change the destination port as well (default: 60110).
Data download between MGC and SR-MGC	TCP	LAN1	1024-65535 **Note 1**		N	A	TP of other node	1024-65534	1		
Charge polling between MGC and SR-MGC (Server)	TCP	LAN1	60150		N	A	Telephony Server (Client)	1024-65534	1		
SMTP client	TCP	LAN1	1024-65535 **Note 1**		N	N	PC (SMTP server)	-	-	-	*Sending/receiving port of a SMTP server: 25
FTP server (in passive mode)	TCP	LAN1	Data port/Control port: 1024-65535 **Note 1**/21		N	N	PC (FTP client)	-	-	-	*Sending/receiving port of a FTP client: 1024-65535 (passive mode)/21
SNMP (GET/SET)	UDP	LAN1	161		N	N	PC (SNMP manager)	-	-	-	
SNMP (Trap)	UDP	LAN1	1024-65535 **Note 1**	No receiving	N	N	PC (SNMP manager)	-	-	-	*Sending/receiving port of a SNMP manager: various/162
SNTP	UDP	LAN1	123		N	A	PC (NTP server)	1024-65534	1	ADTM	
SSH	TCP	LAN1	22		N	N	PC (SSH client)	-	-	-	

A: Available, N: Not available, -: Not applicable

Initially-used port numbers by SP

Usage	TCP/UDP	LAN port	Sending port No.	Receiving port No.	Switching LAN port	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
Multiple Line SIP/ MH-SIP (SIP Signaling)	UDP	LAN1	5060		N	A	*1	1024-65534	1	*2	*1: Same as the “SIPPHD/MH-SIP (SIP Signaling)” in the table “Initially-used port numbers by SP (also communicates with TP in another system-side).” *2: You can change the port number with either of the following three, which must be followed by initializing “sipsv_sip”; The preceding numbers represent their priority orders: 1.“SipSrvSipPort” parameter of “SPconfig.conf” 2.“SipSrvSipPort” parameter of “StaticInfo.txt” 3.Changing the port number of SIP Server with ASSDL/N command
MPH (Registration)	UDP	LAN1	3480		N	A	TP (DRS)	1024-65534	1	*3	*Registration to MPH *3: ADTM SPconfig.conf (port sending to TP) MPHconfig.conf (port receiving from TP)
MPH (Maintenance)	UDP	LAN1	60134		N	A	TP (PHE)	1024-65534	1	*4	*4: ADTM SPconfig.conf (port sending to TP) MPHconfig.conf (port receiving from TP)
PHD (Signaling)	UDP	LAN1	64102		N	A	TP (PHE)	1024-65534	1	ALIDL	*iLP-PM sending and receiving (Including health check)

Initially-used port numbers by SP

Usage	TCP/UDP	LAN port	Sending port No.	Receiving port No.	Switching LAN port	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
PHD (Signaling)	UDP	LAN1	60090		N	A	Dterm Series i with IP adapter, DtermIP	1024-65534	1	ALIDL	*Includes health check.
							DtermSP30 (Proprietary Protocol)			ALIDL	*Includes health check.
PHD (to handle internal errors)	UDP	LAN1	61023		N	A	PHD (in the same SP)	1024-65534	1	Modify config file.	*This port is used to internally-communicate with PHD in the same SP (loopback).
SIPPHD (DRS Registration)	UDP	LAN1	12000		N	A	TP (DRS)	1024-65534	1port/SP (SIPPHD)	*4	*For terminal registration. *4: “SIPPHD_DrsPort” parameter in “PHDconfig.conf”. After changing the port number, initialize the PHD process.
SIPPHD (Protims)	UDP	LAN1	12001		N	A	PHD (in the same SP)	1024-65534	1port/SP (SIPPHD)	*5	*This port is used for communication between PHD and SIPPHD in the same SP (loopback). *5: “SIPPHD_ProtimsPort” parameter in “PHDconfig.conf”. After changing the port number, initialize the PHD process.
SIPPHD (prepared)	UDP	LAN1	12002		N	A	*6	1024-65534	1port/SP (SIPPHD)	*7	*6: Same as the “SIPPHD (prepared)” in the table “Initially-used port numbers by SP (also communicates with TP in another system-side).” *7: “SIPPHD_p2pPort” parameter in “PHDconfig.conf”. After changing the port number, initialize the PHD process.

Initially-used port numbers by SP

Usage	TCP/UDP	LAN port	Sending port No.	Receiving port No.	Switching LAN port	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
SIPPHD (H.245)	TCP	LAN1	12003-20000		N	A	*8	1024-65534	1 port/call path *9	*10	*The default port range is 12003 to 20000. If you specify the port range in “PHDconfig.conf”, unoccupied ports are cyclically-searched to use. *Up to 1024 ports can be used. *8: Same as the “SIPPHD (H.245)” in the table “Initially-used port numbers by SP (also communicates with TP in another system-side).” *9: An ON path uses the port; an OFF path releases the port; a reserved path holds the path. *10: Specify the port range from 1024 to 65534 on “H245StartPortNum” and “H245EndPortNum” parameters in “PHDconfig.conf”. After changing the port range, initialize the PHD process.
PHI (Signaling)	UDP	LAN1	64105		N	A	TP (PHE)	1024-65535	1	ALIDL *11	*11: When registering SP-PHI
	UDP	LAN1	64010		N	A	*12	1024-65535	1	ALIDL *13	*12: Same as the “PHI (Signaling)” in the table “Initially-used port numbers by SP (also communicates with TP in another system-side).” *13: When registering SP-PHI
SIPPHI (DRS Registration)	UDP	LAN1	22000		N	A	TP (DRS)	1024-65535	1	PHIconfig.conf	*Terminal registration
SIPPHI (iLPPM)	UDP	LAN1	22001		N	A	PHI (in the same SP)	1024-65535	1	PHIconfig.conf	*This port is used for communication between PHI and SIPPHI in the same SP (loopback).

Initially-used port numbers by SP

Usage	TCP/UDP	LAN port	Sending port No.	Receiving port No.	Switching LAN port	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
SIPPHI (Prepared)	UDP	LAN1	22002		N	A	*13	1024-65535	1	PHIconfig.conf	*13: Same as the “SIPPHD (Prepared)” in the table “Initially-used port numbers by SP (also communicates with TP in another system-side).”
SIPPHI (H.245)	TCP	LAN1	22003-26000		N	A	*14	1024-65535	2000	PHIconfig.conf	*14: Same as the “SIPPHD (H.245)” in the table “Initially-used port numbers by SP (also communicates with TP in another system-side).”

Note 1: Depends on the OS.

[IPPAD used Port Numbers to Send and Receive Packets]

A: Available, N: Not available, -: Not applicable

Used port numbers by IPPAD

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
Prepared (Voice Control)	UDP	62000		N	*1	-	1 (Only 62000)	N	*1: Same as the “SIPPHD (prepared)” in the table “Initially-used port numbers by SP (also communicates with TP in another system-side).”
H.245	TCP	60001- 61024		N	*2	-	*3	N	*2: Same as the “SIPPHD (H.245)” in the table “Initially-used port numbers by SP (also communicates with TP in another system-side).” *3: 1024 ports are used from the first port in rotation. Each port is used from the lowest unoccupied number and loops in certain range.
RTP RTCP	UDP	60000-63071		N	*4	-	*5	N	*4: Same as the “RTP” in the table “Initially-used port numbers by DT800.” *5: 4/call Up to 128 (4 x 32 calls) [PA-32IPLB] RTP=initial value + 4 x Ch+128 x session No. RTCP=RTP+1 [PA-32IPPADA/B] The following is looped: RTP=initial value + 4/call RTCP=RTP+1

[DtermIP (Proprietary Protocol)/INASET240G/INASET320XML Initially-used Port Numbers to Send and Receive Packets]

A: Available, N: Not available, -: Not applicable

Initially-used port numbers by DtermIP (Proprietary Protocol)/INASET240G/INASET320XML

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
DRS (Registration)	UDP	3455		A	DRS for TP of SV9500	1024-65535 (excluding 60000)	1	Config menu	
					DRS for TP of SR-MGC(E)				
					DRS for TP of SR-MGC(S)				
PHD (Signaling)	UDP	3458		A	PHD for SP part of SV9500	1024-65535 (excluding 60000)	1	Config Menu	
					PHD for SP part of SR-MGC(E)				
Prepared (Voice Control)	UDP	4000		A	*1	1024-65535 (excluding 60000)	1	Config Menu	*1: Same as the “SIPPHD (prepared)” in the table “Initially-used port numbers by SP (also communicates with TP in another system-side).”
H.245	TCP	1024-65535		A	*2	1024-65504 (0 for any ports *3)	32	Config Menu	*You cannot change the port range to be consumed. *Obtains from the lowest unoccupied number. *1 port/call *2: Same as the “SIPPHD (H.245)” in the table “Initially-used port numbers by SP (also communicates with TP in another system-side).” *3: If you set 0, OS obtains ports in the range of 1024 to 5000.

Initially-used port numbers by DtermIP (Proprietary Protocol)/INASET240G/INASET320XML

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
RTP	UDP	3462-3471		A	*1	Even numbers in 1024-59992/ 60002-65528	4 × 2 + 2	Config Menu	*You cannot change the port range to be consumed. *The port range is looped to obtain. *2 ports/call *1:Same as the “RTP” in the table “Initially-used port numbers by DT800.”
Firmware download	UDP	1024		N	Maintenance terminal	-	-	-	TFTP(Server:69)
	TCP	20/21		N	Maintenance terminal	-	-	-	FTP
DHCP	UDP	68		N	DHCP server	-	-	-	*Server: 67, Client: 68
DNS	UDP	1024-		N	DNS server	-	-	-	
HTTP	TCP	80		N	Web server	-	-	-	
	TCP	0		A	Web Proxy server	0-65535	-	Home application Config menu	

[DtermIP Inaset320 Initially-used Port Numbers to Send and Receive Packets]

A: Available, N: Not available, -: Not applicable

Initially-used port numbers by DtermIP Inaset320

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
DRS (Registration)	UDP	3455		A	*1	1024-65535 (excluding 60000)	1	Setup application	*1: Same as the “DRS (Registration)” in the table “Initially-used port numbers by TP (also communicates with SP in another system-side).”
PHD (Signaling)	UDP	3458		A	*2	1024-65535 (excluding 60000)	1	Setup application	*2: Same as the “PHD (Signaling)” in the table “Initially-used port numbers by DtermIP (Proprietary Protocol)/INASET240G/INASET320XML.”
Prepared (Voice Control)	UDP	4000		A	*3	1024-65535 (excluding 60000)	1	Setup application	*3: Same as the “SIPPHD (prepared)” in the table “Initially-used port numbers by SP (also communicates with TP in another system-side).”
H.245	TCP	1024-65535		A	*4	1024-65504 (0 for any ports *5)	32	Setup application	*You cannot change the port range to be consumed. *Obtains from the lowest unoccupied number. *1 port/call *4: Same as the “SIPPHD (H.245)” in the table “Initially-used port numbers by SP (also communicates with TP in another system-side).” *5: If you set 0, OS obtains ports in the range of 1024 to 5000.

Initially-used port numbers by DtermIP Inaset320

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
RTP	UDP	3462-3471		A	*6	Even numbers in 1024-59992/ 60002-65528	4 × 2 + 2	Setup application	*You cannot change the port range to be consumed. *The port range is looped to obtain. * 2 ports/call *6: Same as the “RTP” in the table “Initially-used port numbers by DT800.”
Firmware download	UDP	1024		N	Maintenance terminal	-	-	-	
	TCP	20/21		N	Maintenance terminal	-	-	-	
DHCP	UDP	68		N	DHCP server	-	-	-	*Server: 67, Client68
DNS	UDP	1024-		N	DNS server	-	-	-	*Server: 53
HTTP	TCP	80		N	Web server	-	-	-	*NECUS application

[DtermIP(SIP) Initially-used Port Numbers to Send and Receive Packets]

A: Available, N: Not available, -: Not applicable

Initially-used port numbers by DtermIP(SIP)

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
SIPPHD(SIP Signaling)	UDP	5060		N	SIPPHD for SP part of SV9500	-	1	-	
RTP	UDP	3462-3468		N	*1	-	4 × 2	-	*1: Same as the “RTP” in the table “Initially-used port numbers by DT800.”
Firmware download	UDP	1024		N	Maintenance terminal	-	-	-	*TFTP
	TCP	*2	*3	N	Maintenance terminal	-	-	-	*A sending port of FTP-data depends on the FTP server because of FTP in passive mode. *2: Depends on the FTP server (FTP-DATA)/21(FTP) *3: 1025(FTP-DATA)/1024(FTP)
DHCP	UDP	68		N	DHCP server	-	-	-	*Server:67, Client68
DNS	UDP	53	1024-5000 *4	N	DNS server	-	-	-	*4: Initial value is 1024, which is increased by 1 per DNS transmission.

[DT800 Initially-used Port Numbers to Send and Receive Packets]

A: Available, N: Not available, -: Not applicable

Initially-used port numbers by DT800

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
SIPPHD (SIP Signaling)	UDP	5060		A	SIP Multiple Line terminal Softphone (SIP)	1024-65534	1	Note 1	
RTP (Voice)	UDP	3462-3477		A	Dterm Series i with IP adapter, DtermIP DtermSP30 (Proprietary Protocol) Analog 2MC UG50-2MC UG50 (DLC) UG50 (LC) [Proprietary Protocol] MC part of MC-MG MG part of MC-MG UG50-4LC2COTA (COT/PGT) (MC part) UG50-4LC2COTA (COT/PGT) (MG part)	Even numbers in the range of 1024-65520	8 × 2 (Even numbers only) *1	Note 1	*1:The port range to be consumed represents the maximum number of ports used at the same time.

Initially-used port numbers by DT800

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
RTP (Voice)	UDP	3462-3477		A	UG50 (COT-TYPE1)/(PGT-TYPE1)	Even numbers in the range of 1024-65520	8 × 2 (Even numbers only) *1	Note 1	*1:The port range to be consumed represents the maximum number of ports used at the same time.
					MG(BRI) (Proprietary Protocol)				
					MG(PRI) (Proprietary Protocol)				
					UG50-24PRIA [Proprietary Protocol]				
					UG50-30PRIA [Proprietary Protocol]				
					UG50 (PRT 1.5M) [Proprietary Protocol]				
					UG50 (PRT 2M) [Proprietary Protocol]				
					MG(SIP)				
					IPG Digital				
					UG50-IPG (Digital)				
					IPG Analog				

Initially-used port numbers by DT800

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
RTP (Voice)	UDP	3462-3477		A	UG50-IPG (Analog) VS32 (Proprietary Protocol) SCA-6COT [Proprietary Protocol] UG50-6COT [Proprietary Protocol] UG50 (COT-TYPE2)/(PGT-TYPE2) [Proprietary Protocol] IPPAD DT800 Series DT700 Series DtermIP (SIP) DtermSP30 (SIP) Soft Client SP350 WLAN Handset (MH Series) Analog 8MC UG50-8LC MG(BRI) (SIP) MG(PRI) (SIP)	Even numbers in the range of 1024-65520	8 × 2 (Even numbers only) *1	Note 1	*1:The port range to be consumed represents the maximum number of ports used at the same time.

Initially-used port numbers by DT800

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
RTP (Voice)	UDP	3462-3477		A	UG50-24PRIA [SIP] UG50-30PRIA [SIP] UG50 (PRT 1.5M) [SIP] UG50 (PRT 2M) [SIP] UG50 (LC) [SIP] MG-T1 (SIP) VS32 (SIP) SCA-6COT (SIP) UG50-6COT [SIP] UG50 (COT-TYPE2)/(PGT-TYPE2) [SIP]	Even numbers in the range of 1024-65520	8 × 2 (Even numbers only) *1	Note 1	*1:The port range to be consumed represents the maximum number of ports used at the same time.
IP Phone Manager	UDP	3530		A	Maintenance terminal	1024-65535	1	Note 1	
Firmware download	UDP	1024-65535 (auto-allocation)		N	Maintenance terminal	-	1	-	*TFTP (The port number will not be allocated from the lowest number of the range. An arbitrary port number will be allocated.)
	TCP	*2	*3	N	Maintenance terminal	-	-	-	*A sending port of FTP-data depends on the FTP server because of FTP in passive mode. *2:Depends on the FTP server (FTP-DATA)/21(FTP) *3:1025(FTP-DATA)/1024(FTP)
DHCP	UDP	68		N	DHCP server	-	-	-	*Server:67, Client68

Initially-used port numbers by DT800

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
DNS	UDP	53	1024-5000 *4	N	DNS server	-	-	-	*4:Initial value is 1024, which is increased by 1 per DNS transmission.
HTTP	TCP	80		N	Maintenance terminal, PC	-	-	-	*HTTP server (WebProgramming connection)
	TCP	81		N	Inside of terminal	-	-	-	*XML server (terminal board)
	TCP	82 (default)		A	PUSH client	82, 1024-65535	1	Note 1	*PUSH server (PUSH request acceptance)
	TCP	1024-5000 (auto-allocation)		N	Inside of terminal, external server	-	Up to 65	-	*HTTP client (by XML browser in a terminal) *The port range to be consumed represents the maximum number of ports used at the same time. Used port numbers are not always consecutive numbers.
HTTPS	TCP	443		N	Maintenance terminal, PC	-	-	-	*HTTP server (WebProgramming connection) *Firmware version 3.0.0.0 or higher
License Manager Client (LMC)	TCP	6080 (default)		A	Maintenance terminal, PC	1024-65535	-	*5	*This setting is for DT820 Series only. *This setting is supported for North America and Australia. *5:The port number setting of network devices (such as the firewall, etc.) may have to be changed to accept a terminal license server port (default value is 6080).

Note 1: You can change the port number in any of the following four ways:

- Config menu
- Web Programming
- Configuration File Download
- Auto Config

[DT700 Initially-used Port Numbers to Send and Receive Packets]

A: Available, N: Not available, -: Not applicable

Initially-used port numbers by DT700

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
SIPPHD(SIP Signaling)	UDP	5060		A	SIP Multiple Line terminal	1024-65534 (excluding 17185 and 60000)	1	Note 1	*Firmware version 3.0.0.0 or higher
					Softphone (SIP)				
				N	MH series			-	*Firmware version lower than 3.0.0.0
RTP	UDP	3462-3476		A	*1	Even numbers in the range of 1024-65520 (except those in the range of 59986-60000)	8 × 2 (Even numbers only)	Note 1	*Firmware version 5.0.0.0 or higher *1:Same as the “RTP” in the table “Initially-used port numbers by DT800.”
		3462-3468				Even numbers in the range of 1024-65528 (except those in the range of 59994-60000)	4 × 2 (Even numbers only)		*Firmware version not lower than 3.0.0.0 but lower than 5.0.0.0 *1:Same as the “RTP” in the table “Initially-used port numbers by DT800.”
				N		-		-	*Firmware version lower than 3.0.0.0 *1:Same as the “RTP” in the table “Initially-used port numbers by DT800.”
IP Phone Manager	UDP	3530		A	Maintenance terminal	1024-65535 (excluding 17185 and 60000)	1	Note 1	

Initially-used port numbers by DT700

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
Firmware download	UDP	1024-1027		N	Maintenance terminal	-	1	-	*TFTP (The port number will be allocated from the lowest number which is available in the range. For example, when the lowest port number is already allocated in another protocol, the second lowest port number may be allocated.)
	TCP	*2	*3	N	Maintenance terminal	-	-	-	*A sending port of FTP-data depends on the FTP server because of FTP in passive mode. *2:Depends on the FTP server (FTP-DATA)/21(FTP) *3:1025(FTP-DATA)/1024(FTP)
DHCP	UDP	68		N	DHCP server	-	-	-	*Server:67, Client68
DNS	UDP	53	1024-5000 *4	N	DNS server	-	-	-	*4:Initial value is 1024, which is increased by 1 per DNS transmission.
HTTP	TCP	80		N	Maintenance terminal, PC	-	-	-	*HTTP server (WebProgramming connection)
	TCP	81		N	Inside of terminal	-	-	-	*XML server (terminal board)
	TCP	82 (default)		A	PUSH client	82, 1024-65535	1	**Note 1**	*PUSH server (PUSH request acceptance)
	TCP	1024-5000 (auto-allocation)		N	Inside of terminal, external server	-	Up to 65	-	*HTTP client (by XML browser in a terminal) *The port range to be consumed represents the maximum number of ports used at the same time. Used port numbers are not always consecutive numbers.

Note 1: You can change the port number in any of the following four ways:

- Config menu
- Web Programming
- Configuration File Download
- Auto Config

DT730G/DT770G Initially-used Port Numbers to Send and Receive Packets]

A: Available, N: Not available, -: Not applicable

Initially-used port numbers by DT730G/DT770G

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
SIPPHD(SIP Signaling)	UDP	5060		A	SIP Multiple Line terminal Softphone (SIP) MH series	1024-65534 (excluding 60000)	1	Note 1	
RTP	UDP	3462-3477		A	*1	Even numbers in the range of 1024-65520 (excluding 59986-60000)	8 × 2	Note 1	*1:Same as the “RTP” in the table “Initially-used port numbers by DT800.”
IP Phone Manager	UDP	3530		A	Maintenance terminal	1024-65535 (excluding 60000)	1	Note 1	
Firmware download	UDP	1024-65535 (auto-allocation)		N	Maintenance terminal	-	-	-	*TFTP (The port number will not be allocated from the lowest number of the range. An arbitrary port number will be allocated.)
	TCP	*2	*3	N	Maintenance terminal	-	-	-	*A sending port of FTP-data depends on the FTP server because of FTP in passive mode. *2:Depends on the FTP server (FTP-DATA)/21(FTP) *3:1025(FTP-DATA)/1024(FTP)
DHCP	UDP	68		N	DHCP server	-	-	-	*Server:67, Client68
DNS	UDP	53	1024-5000 *4	N	DNS server	-	-	-	*4:Initial value is 1024, which is increased by 1 per DNS transmission.

Initially-used port numbers by DT730G/DT770G

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
HTTP	TCP	80		N	Maintenance terminal, PC	-	-	-	*HTTP server (WebProgramming connection)
	TCP	81		N	Inside of terminal	-	-	-	*XML server (terminal board)
	TCP	82 (default)		A	PUSH client	82, 1024-65535	1	Note 1	*PUSH server (PUSH request acceptance)
	TCP	1024-5000 (auto-allocation)		N	Inside of terminal, external server	-	Up to 65	-	*HTTP client (by XML browser in a terminal) *The port range to be consumed represents the maximum number of ports used at the same time. Used port numbers are not always consecutive numbers.

Note 1: You can change the port number in any of the following four ways:

- Config menu
- Web Programming
- Configuration File Download
- Auto Config

[DtermSP30 (proprietary mode) Initially-used Port Numbers to Send and Receive Packets]

A: Available, N: Not available, -: Not applicable

Initially-used port numbers by DtermSP30 (proprietary mode)

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
DRS (Registration)	UDP	60256-60511		A	*1	1024-65535 *2	REC: 128 Min.: 4 Max.: - *3	*4	*1: Same as the “DRS (Registration)” in the table “Initially-used port numbers by TP (also communicates with SP in another system-side).” *2: Port numbers cannot be duplicated between call control port and sound port. Obtains from the lowest unoccupied number if a certain range is defined. *3: 1/device *4: Call Control Port Number column of DtermSP30Config
PHD (Signaling)	UDP	60256-60511		A	*5	1024-65535 *6	REC: 128 Min.: 4 Max.: - *7	*8	*5: Same as the “PHD (Signaling)” in the table “Initially-used port numbers by DtermIP (Proprietary Protocol)/INA-SET240G/INASET320XML.” *6: Port numbers cannot be duplicated between call control port and sound port. Obtains from the lowest unoccupied number if a certain range is defined. *7: 1/device *8: Call Control Port Number column of DtermSP30Config

Initially-used port numbers by DtermSP30 (proprietary mode)

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
Prepared (Voice Control)	UDP	60256-60511		A	*9	1024-65535 *10	REC: 128 Min.: 4 Max.: - *11	*12	*9: Same as the “SIPPHD (prepared)” in the table “Initially-used port numbers by SP (also communicates with TP in another system-side).” *10: Port numbers cannot be duplicated between call control port and sound port. Obtains from the lowest unoccupied number if a certain range is defined. *11: 1/device *12: Call Control Port Number column of DtermSP30Config
H.245	TCP	60256-60511		A	*13	1024-65535 *14	REC: 128 Min.: 4 Max.: - *15	*16	*13: Same as the “SIPPHD (H.245)” in the table “Initially-used port numbers by SP (also communicates with TP in another system-side).” *14: Port numbers cannot be duplicated between call control port and sound port. Obtains from the lowest unoccupied number if a certain range is defined. *15: 1/device *16: Call Control Port Number column of DtermSP30Config

Initially-used port numbers by DtermSP30 (proprietary mode)

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
RTP RTCP	UDP	60000-60255 *17		A	*18	1024-65535 *19	REC: 128 Min.: 2 × n Max.: - *20	*21	*17: RTP uses even numbers; RTCP uses odd numbers. *18: Same as the “RTP” in the table “Initially-used port numbers by DT800.” *19: Port numbers cannot be duplicated between call control port and sound port. Obtains from the lowest unoccupied number if a certain range is defined. *20: 1/device *21: Sound Port Number column of DtermSP30Config
Application interaction/instant message	UDP/ TCP	UDP 60511 TCP 1024-65535	60511	A *22	DtermSP30	1024-65535	1 (Cannot be changed) *23	*24	*Only instant message uses TCP. *22: The TCP sending port number cannot be changed. *23: 1/device *24: “Port for Short Message and...” column of DtermSP30-Config
Net meeting (application interaction)	UDP/ TCP	1024-65535		N	DtermSP30	N	-	-	
Presence	TCP	1024-65535		N	Presence Server	N	-	-	

[DtermSP30 (SIP mode) Initially-used Port Numbers to Send and Receive Packets]

A: Available, N: Not available, -: Not applicable

Initially-used port numbers by DtermSP30 (SIP mode)

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
SIPPHD(SIP Signaling)	UDP	5060-5187		A	SIP Multiple Line terminal Softphone (SIP) MH series	1024-65535 *1	1 *2	Dterm-SP30-Config	*1: Obtains from the lowest unoccupied number if a certain range is defined. *2: 1/device
RTP RTCP	UDP	60000-60255 *3		A	*4	1024- *5	2 *6	Dterm-SP30-Config	*3: RTP uses even numbers; RTCP uses odd numbers. *4: Same as the “RTP” in the table “Initially-used port numbers by DT800.” *5: Obtains from the lowest unoccupied number if a certain range is defined. *6: 1/device
Application interaction	UDP/ TCP	60511		A	DtermSP30	1024-65535	1 (Cannot be changed) *7	*8	*7: 1/device *8: “Port for Short Message and...” column of DtermSP30-Config
Net meeting (application interaction)	UDP/ TCP	1024-65535		N	DtermSP30	N	-	-	

Initially-used port numbers by DtermSP30 (SIP mode)

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
Presence (Shared with Signaling)	UDP	5060-5187		A	Presence Server	1024-65535 *9	1 *10	-	*9: Obtains from the lowest unoccupied number if a certain range is defined. *10: 1/device

[DtermSP30 (VPCC client) Initially-used Port Numbers to Send and Receive Packets]

A: Available, N: Not available, -: Not applicable

Initially-used port numbers by DtermSP30 (VPCC client)

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
VPCC (server-client)	UDP	5060-5187		A	VPCC server	1024-65535 *1	1 *2	Dterm-SP30-Config	*1: Obtains from the lowest unoccupied number if a certain range is set for Signaling. *2: 1/device
RTP RTCP	UDP	60000-60255 *3		A	*4	1024-*5	2 *6, *7		*3: RTP uses even numbers; RTCP uses odd numbers. *4: Same as the “RTP” in the table “Initially-used port numbers by DT800.” *5: Obtains from the lowest unoccupied number if a certain range is defined. *6: 4 ports are consumed for DtermSP30 of software version 18.2.0.0 and later (2 for voice communication, 2 for PC recording). *7: 1/device

[DtermSP30 (VPCC server) Initially-used Port Numbers to Send and Receive Packets]

A: Available, N: Not available, -: Not applicable

Initially-used port numbers by DtermSP30 (VPCC server)

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
VPCC (server-client)	UDP	5060-5187		A	VPCC client	1024-65535 *1	1 *2	Dterm-SP30-Config	*1: Obtains from the lowest unoccupied number if a certain range is set for Signaling. *2: 1/VPCC server
Signaling	UDP	5060-5187		A	SV9500 (SIP control part)	1024-65535 *3	1 *4		*3: Obtains from the lowest unoccupied number if a certain range is defined. *4: 1/VPCC server
Presence (Shared with Signaling)	UDP	5060-5187		A	Presence server	1024-65535 *5	1 *6		*5: Obtains from the lowest unoccupied number if a certain range is defined. *6: 1/VPCC server

Initially-used port numbers by DtermSP30 (VPCC server)

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
RTP RTCP	UDP	- *7	60000 - 60255 *8	A	VPCC client	1025-65535 *9	2 *10, *11	Dterm-SP30-Config	*7: Receive only. *8: RTP uses even numbers, RTCP uses odd numbers. *9: Obtains from the lowest unoccupied number if a certain range is defined. *10: 4 ports are consumed for DtermSP30 of software version 18.2.0.0 and later (2 for voice communication, 2 for PC recording). *11: 1/device

[Soft Client SP350 Initially-used Port Numbers to Send and Receive Packets]

A: Available, N: Not available, -: Not applicable

Initially-used port numbers by Soft Client SP350

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
SIPPHD(SIP Signaling)	UDP	5060-5187		A	SIP Multiple Line terminal Softphone (SIP) MH series	1024-65535 *1	1 *2	*3	*1: Obtains from the lowest unoccupied number if a certain range is defined. *2: 1/device *3: “Network Setting” - “IP Telephony Server” of SP350 Maintenance Setting.
RTP RTCP	UDP	60000-60008 *4		A	*5	1024-65535 *6	2 *7	*8	*4: RTP uses even numbers; RTCP uses odd numbers. *5: Same as the “RTP” in the table “Initially-used port numbers by DT800.” *6: Obtains from the lowest unoccupied number if a certain range is defined. *7: 1/device *8: “Network Setting” - “IP Telephony Server” of SP350 Maintenance Setting.

Initially-used port numbers by Soft Client SP350

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
Data conference (control port)	TCP	60010-60137		A	Soft Client SP350	1024-65535 *9	Conference leader: 10-22 Conferee: 3-6 *10	*11	*9: Obtains from the lowest unoccupied number if a certain range is defined. *10: Depends on the number of available functions (video, communication board, chat, file transfer) *11: “Network Setting” - “Data Conference” of SP350 Maintenance Setting.
Data conference (video port)	UDP	60010-60019		A	Soft Client SP350	1024-65535 *12	2	*13	*12: Obtains from the lowest unoccupied number if a certain range is defined. *13: “Network Setting” - “Data Conference” of SP350 Maintenance Setting.
Presence (Shared with Signaling)	UDP	5060-5187		A	Presence Server	1024-65535 *14	1 *15	*16	*14: Obtains from the lowest unoccupied number if a certain range is defined. *15: 1/device *16: “Network Setting” - “Presence” of SP350 Maintenance Setting.

[Soft Client SP350 (VPCC client) Initially-used Port Numbers to Send and Receive Packets]

A: Available, N: Not available, -: Not applicable

Initially-used port numbers by Soft Client SP350 (VPCC client)

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
VPCC (server-client)	UDP	5060-5187		A	VPCC server	1024-65535 *1	1 *2	SP350 Maintenance Setting	*1: Obtains from the lowest unoccupied number if a certain range is set for Signaling. *2: 1/device
RTP RTCP	UDP	60000-60255 *3		A	*4	1024- *5	2 *6		*3: RTP uses even numbers; RTCP uses odd numbers. *4: Same as the “RTP” in the table “Initially-used port numbers by DT800.” *5: Obtains from the lowest unoccupied number if a certain range is defined. *6: 1/device

[Soft Client SP350 (VPCC server) Initially-used Port Numbers to Send and Receive Packets]

A: Available, N: Not available, -: Not applicable

Initially-used port numbers by Soft Client SP350 (VPCC server)

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
VPCC (server-client)	UDP	5060-5187		A	VPCC client	1024-65535 *1	1 *2	SP350 Maintenance Setting	*1: Obtains from the lowest unoccupied number if a certain range is set for Signaling. *2: 1/VPCC server
Signaling	UDP	5060-5187		A	SIP Multiple Line terminal Softphone (SIP) MH series	1024-65535 *3	1 *4		*3: Obtains from the lowest unoccupied number if a certain range is defined. *4: 1/VPCC server
Presence (Shared with Signaling)	UDP	5060-5187		A	Presence server	1024-65535 *5	1 *6		*5: Obtains from the lowest unoccupied number if a certain range is defined. *6: 1/VPCC server

Initially-used port numbers by Soft Client SP350 (VPCC server)

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
RTP RTCP	UDP	- *7	60000-60255 *8	A	VPCC Client	1025-65535 *9	2 *10, *11	SP350 Maintenance Setting	*7: Receive only. *8: RTP uses even numbers, RTPC uses odd numbers. *9: Obtains from the lowest unoccupied number if a certain range is defined. *10: 4 ports are consumed for DtermSP30 of software version 18.2.0.0 and later (2 for voice communication, 2 for PC recording). *11: 1/device

[Presence Server for DtermSP Initially-used Port Numbers to Send and Receive Packets]

A: Available, N: Not available, -: Not applicable

Initially-used port numbers by presence server for DtermSP

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
Presence	TCP	60002		A					
HTTP	TCP	80		A					*IIS
AuthBOX	TCP	35355		N	Internal (presence) module, normally	-	-	-	*Authentication module for presence server *AuthBox is normally installed onto a server where Presence is installed as well. So, the server uses ports internally.
MicrosoftServer	TCP	1433		N		-	-	-	*We recommend to put the server in the same segment with Presence.
	UDP	1434		N		-	-	-	

[Analog 2MC Initially-used Port Numbers to Send and Receive Packets]

A: Available, N: Not available, -: Not applicable

Initially-used port numbers by Analog 2MC

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change Note 1	Remarks
DRS (Registration)	UDP	1024-5000 Note 2	3456	A	*1	1024-65535	1	Command *2	*1: Same as the “DRS (Registration)” in the table “Initially-used port numbers by TP (also communicates with SP in another system-side).” *2: SET DRSADDRESS
PHE (Signaling)	UDP	50000		A	Internal PHE for TP of SV9500	1024-65535	1	Command *3	*3: SET VALUE IP LPPN_PORT
Prepared (Voice Control)	UDP	1024-5000 Note 3	10001	A	*4	1024-65535	1	Command *5	*4: Same as the “SIPPHD (prepared)” in the table “Initially-used port numbers by SP (also communicates with TP in another system-side).” *5: SET VALUE IP SWITCH_CTRL_PORT
H.245	TCP	1024-5000		N	*6	-	-	-	*6: Same as the “SIPPHD (H.245)” in the table “Initially-used port numbers by SP (also communicates with TP in another system-side).”
RTP	UDP	1024-2043		A	*7	1024-65535	1	Command *8	*Uses 1024 ports counting from the initial port. *7: Same as the “RTP” in the table “Initially-used port numbers by DT800.” *8: SET STARTPORT
Telnet	TCP	23		N	PC	-	-	-	
FTP (client)	TCP	1024-5000		N	FTP server	-	-	-	

Initially-used port numbers by Analog 2MC

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change Note 1	Remarks
TFTP (client)	UDP	1024-5000		N	TFTP server	-	-	-	
DHCP (client)				N	DHCP server	-	-	-	

Note 1: The command directly changes ConfigFile (SET VALUE).

Note 2: When SET DRSPORTFIX is set to ENABLE, the sending port number is the same as receiving port number (3456).

Note 3: When SWITCHCTRLPORTFIX is set to ENABLE, the sending port number is the same as receiving port number (10001).

[VS32 (Proprietary) Initially-used Port Numbers to Send and Receive Packets] Note 1

A: Available, N: Not available, -: Not applicable

Initially-used port numbers by VS32 (Proprietary)

Usage	TCP/UDP	Sending	Receiving	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	To narrow port range			Remarks
									Port range unit	Max. number of ports used simultaneously	Hunt rule	
DRS (Registration)	UDP	3456		A	*1	1024-65535	1	Command *2	-	-	-	*1: Same as the “DRS (Registration)” in the table “Initially-used port numbers by TP (also communicates with SP in another system-side).” *2: SET PORTNUMBER
PHE (Signaling)	UDP	60130		A	Internal PHE for TP of SV9500	1024-65535	1	Command *3	-	-	-	*3: SET PORTNUMBER
Prepared (Voice Control)	UDP	62000		A	*4	1024-65535	1	Command *5	-	-	-	*4: Same as the “SIPPHD (prepared)” in the table “Initially-used port numbers by SP (also communicates with TP in another system-side).” *5: SET PORTNUMBER

Initially-used port numbers by VS32 (Proprietary)

Usage	TCP/UDP	Sending	Receiving	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	To narrow port range			Remarks
									Port range unit	Max. number of ports used simultaneously	Hunt rule	
H.245	TCP	60001-61024		A	*6	1024-64511	*7	Command *8	1/call	32	loop	*6: Same as the “SIPPHD (H.245)” in the table “Initially-used port numbers by SP (also communicates with TP in another system-side).” *7: Uses 1024 ports counting from the initial port. *8: SET PORTNUMBER
RTP	UDP	1024-2047		A	*9	1024-64511	*10	Command *11	2/call (RTP+RTCP)	64	loop	*9: Same as the “RTP” in the table “Initially-used port numbers by DT800.” *10: Uses 1024 ports counting from the initial port. *11: SET PORTNUMBER
Telnet	TCP	23		N	PC	-	-	-	-	-	-	

Initially-used port numbers by VS32 (Proprietary)

Usage	TCP/UDP	Sending	Receiving	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	To narrow port range			Remarks
									Port range unit	Max. number of ports used simultaneously	Hunt rule	
FTP (client)	TCP	1024-		N	FTP server	-	-	-	-	-	-	*The port numbers of a FTP server are well-known ports: 20, 21.
TFTP (client)	UDP	1024-		N	TFTP server	-	-	-	-	-	-	*The port number of a TFTP server is a well-known port: 69.
DHCP (client)	UDP	68		N	DHCP server	-	-	-	-	-	-	*The port numbers of a DHCP server are well-known ports: 67, 68.

Note 1: Software-based VS32 is included.

[VS32 (SIP) Initially-used Port Numbers to Send and Receive Packets]

A: Available, N: Not available, -: Not applicable

Initially-used port numbers by VS32 (SIP)

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	To narrow port range			Remarks
									Port range unit	Max. number of ports used simultaneously	Hunt rule	
PHI (SIP Signaling)	UDP	5060		A	PHI for SP part of SV9500	1024-65535	1	Command *1	-	-	-	*1: SET SIGNALING_PORT_NO
RTP	UDP	1024-2047		A	*2	1024-64511	*3	Command *4	2/call (RTP+ RTCP)	64	loop	*2: Same as the “RTP” in the table “Initially-used port numbers by DT800.” *3: Uses 1024 ports counting from the initial port. *4: SET PORTNUMBER
Telnet	TCP	23		N	PC	-	-	-	-	-	-	
FTP	TCP	1024-		N	FTP server	-	-	-	-	-	-	*The port numbers of a FTP server are well-known ports: 20, 21.
TFTP	UDP	1024-		N	TFTP server	-	-	-	-	-	-	*The port number of a TFTP server is a well-known port: 69.
DHCP	UDP	68		N	DHCP server	-	-	-	-	-	-	*The port numbers of a DHCP server are well-known ports: 67, 68.
DNS	UDP	1024-		N	DNS server	-	-	-	-	-	-	*The port number of a DNS server is a well-known port: 53.

[MG-PRI (Proprietary) (T1, E1, NW+TE) Initially-used Port Numbers to Send and Receive Packets]

A: Available, N: Not available, -: Not applicable

Initially-used port numbers by MG-PRI (Proprietary) (T1, E1, NW+TE)

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change Note 1	To narrow port range			Remarks
									Port range unit	Max. number of ports used simultaneously	Hunt rule	
DRS (Registration)	UDP	3456		N	*1	-	-	-	-	-	-	*1: Same as the “DRS (Registration)” in the table “Initially-used port numbers by TP (also communicates with SP in another system-side).”
Internal PHI-PRI (Signaling)	TCP	7500		A	Internal PHI-PRI for TP of SV9500	1024-65535	1	Command *2	-	-	-	*2: SET VALUE IP LPPM_PORT
Prepared (Voice Control)	UDP	10001		A	*3	1024-65535	1	Command *4	-	-	-	*3: Same as the “SIPPHD (prepared)” in the table “Initially-used port numbers by SP (also communicates with TP in another system-side).” *4: SET VALUE IP SWITCH_C-TRL_PORT

Initially-used port numbers by MG-PRI (Proprietary) (T1, E1, NW+TE)

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change Note 1	To narrow port range			Remarks
									Port range unit	Max. number of ports used simultaneously	Hunt rule	
H.245	TCP	1024-65535		A	*5	1024-65535	*6	Com-mands *7	1/call	T1: 24 E1: 30	loop	*5: Same as the “SIPPHD (H.245)” in the table “Initially-used port numbers by SP (also communicates with TP in an-other system-side).” *6: Depends on OS by default/10 or more when narrowing the range. *7: SET VALUE IP H245_PORT_START SET VALUE IP H245_PORT_END
RTP	UDP	1024-2047		A	*8	1024-64510	*9	Command *10	2/call (RTP+ RT-CP)	T1: 48 E1: 60	loop	*Assign an even number to the initial port number. *8: Same as the “RTP” in the table “Initial-ly-used port numbers by DT800.” *9: Uses 1024 ports counting from the ini-tial port. *10: SET STARTPORT
Telnet	TCP	23		N	PC	-	-	-	-	-	-	
TFTP	UDP	1024-		N	TFTP server	-	-	-	-	-	-	*The port number of a TFTP server is a well-known port: 69.

Initially-used port numbers by MG-PRI (Proprietary) (T1, E1, NW+TE)

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change Note 1	To narrow port range			Remarks
									Port range unit	Max. number of ports used simultaneously	Hunt rule	
FTP (Client) Note 2	TCP	1024-		N	FTP server	-	-	-	-	-	-	*The port numbers of a FTP server are well-known ports: 20, 21.
DHCP	UDP	68		N	DHCP server	-	-	-	-	-	-	*The port numbers of a DHCP server are well-known ports: 67, 68.

Note 1: The command directly changes ConfigFile (SET VALUE).

Note 2: Only SP-3884 supports FTP.

[MG-PRI (SIP) (T1, E1) Initially-used Port Numbers to Send and Receive Packets]

A: Available, N: Not available, -: Not applicable

Initially-used port numbers by MG-PRI (SIP) (T1, E1)

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	To narrow port range			Remarks
									Port range unit	Max. number of ports used simultaneously	Hunt rule	
PHI (SIP Signaling)	UDP	5060		A	PHI for SP part of SV9500	1024-65535	1	Command *1	-	-	-	*1: SET SIGNALING_PORT_NO
RTP	UDP	1024-2047		A	*2	1024-64510	*3	Command *4	2/call (RTP+RTCP)	T1: 48 E1: 60	loop	*2: Same as the “RTP” in the table “Initially-used port numbers by DT800.” *3: Uses 1024 ports counting from the initial port. *4: SET STARTPORT
Telnet	TCP	23		N	PC	-	-	-	-	-	-	
FTP	TCP	1024-		N	FTP server	-	-	-	-	-	-	*The port numbers of a FTP server are well-known ports: 20, 21.
TFTP	UDP	1024-		N	TFTP server	-	-	-	-	-	-	*The port number of a TFTP server is a well-known port: 69.
DHCP	UDP	68		N	DHCP server	-	-	-	-	-	-	*The port numbers of a DHCP server are well-known ports: 67, 68.
DNS	UDP	1024-		N	DNS server	-	-	-	-	-	-	*The port number of a DNS server is a well-know port: 53.

[MG-BRI (Proprietary) Initially-used Port Numbers to Send and Receive Packets]

A: Available, N: Not available, -: Not applicable

Initially-used port numbers by MG-BRI (Proprietary)

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	To narrow port range			Remarks
									Port range unit	Max. number of ports used simultaneously	Hunt rule	
DRS (Registration)	UDP	61010		N	*1	-	-	-	-	-	-	*1: Same as the “DRS (Registration)” in the table “Initially-used port numbers by TP (also communicates with SP in another system-side).”
Internal PHI-BRI (Signaling)	UDP	64000		A	Internal PHI-BRI for TP of SV9500	1024-65535	1	Local setting	-	-	-	
Prepared (Voice Control)	UDP	10001		A	*2	1024-65535	1	Local setting	-	-	-	*The port number used by an opposite terminal is not specified. *2: Same as the “SIPPHD (prepared)” in the table “Initially-used port numbers by SP (also communicates with TP in another system-side).”
H.245	TCP	1024-		N	*3	-	-	-	-	-	-	*3: Same as the “SIPPHD (H.245)” in the table “Initially-used port numbers by SP (also communicates with TP in another system-side).”

Initially-used port numbers by MG-BRI (Proprietary)

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	To narrow port range			Remarks
									Port range unit	Max. number of ports used simultaneously	Hunt rule	
RTP	UDP	1024-1039		A	*4	1024-65520	2	Local setting	2/call (RTP +RT-CP)	8	A used port is fixed per chan-nel.	*You can specify the initial port. Used ports depend on the OS. *4: Same as the “RTP” in the table “Initial-ly-used port numbers by DT800.”
Telnet	TCP	23		N	PC	-	-	-	-	-	-	*The port number of a PC (Telnet serv-er) is well-known port: 23.
FTP	TCP	1024-		N	FTP server	-	-	-	-	-	-	*The port numbers of a FTP server are well-known ports: 20, 21.
TFTP	UDP	1024-		N	TFTP server	-	-	-	-	-	-	*The port number of a TFTP server is a well-known port: 69.
DHCP	UDP	68		N	DHCP server	-	-	-	-	-	-	*The port numbers of a DHCP server are well-known ports: 67, 68.
DNS	UDP	-		-	DNS server	-	-	-	-	-	-	*Not supported. *The port number of a DNS server is a well-know port: 53.

[MG-BRI (SIP) Initially-used Port Numbers to Send and Receive Packets]

A: Available, N: Not available, -: Not applicable

Initially-used port numbers by MG-BRI (SIP)

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	To narrow port range			Remarks
									Port range unit	Max. number of ports used simultaneously	Hunt rule	
PHI (SIP Signaling)	UDP	64000		A	PHI for SP part of SV9500	1024-65535	1	Local setting	-	-	-	
RTP	UDP	1024-1047		A	*1	1024-65512	2	Local setting	2/call (RTP+RTCP)	8	loop	*You can specify the initial port. Used ports depend on the OS. *1: Same as the “RTP” in the table “Initially-used port numbers by DT800.”
Telnet	TCP	23		N	PC	-	-	-	-	-	-	*The port number of a PC (Telnet server) is well-known port: 23.
FTP	TCP	1024-		N	FTP server	-	-	-	-	-	-	*The port numbers of a FTP server are well-known ports: 20, 21.
TFTP	UDP	1024-		N	TFTP server	-	-	-	-	-	-	*The port number of a TFTP server is a well-known port: 69.
DHCP	UDP	68		N	DHCP server	-	-	-	-	-	-	*The port numbers of a DHCP server are well-known ports: 67, 68.
DNS	UDP	1024-		N	DNS server	-	-	-	-	-	-	*The port number of a DNS server is a well-know port: 53.

[MG-SIP Initially-used Port Numbers to Send and Receive Packets]

A: Available, N: Not available, -: Not applicable

Initially-used port numbers by MG-SIP

Usage	TCP/UDP	Sending	Receiving	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
DRS (Registration)	UDP	3456		A	*1	1024-65535	1	Command *2	*LAN *1: Same as the “DRS (Registration)” in the table “Initially-used port numbers by TP (also communicates with SP in another system-side).” *2: SET REGISTRATION_PORT_NO
Internal PHI-BRI (Signaling)	UDP	61012		A	Internal PHI-BRI for TP of SV9500	1024-65535	1	Command *3	*LAN *3: SET SIGNALING_PORT_NO
SIP (Signaling)	UDP/TCP **Note 6**	5060		A	SIP server	1024-65535	1	Command *4	*WAN *4: SET SIP_PORT_NO
Prepared (Voice Control)	UDP	61014		A	*5	1024-65535	1	Command *6	*LAN *5: Same as the “SIPPHD (prepared)” in the table “Initially-used port numbers by SP (also communicates with TP in another system-side).” *6: SET PRE_NEGOTIATION_PORT_NO

Initially-used port numbers by MG-SIP

Usage	TCP/UDP	Sending	Receiving	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
H.245	TCP	40001-41024		A	*7	1024-64511	*8	Command *9	*LAN Note 3 *7: Same as the “SIPPHD (H.245)” in the table “Initially-used port numbers by SP (also communicates with TP in another system-side).” *8: Uses 1024 ports counting from the initial port + 1. *9: SET H245_BASE_PORT_NO (setting of initial port)

Initially-used port numbers by MG-SIP

Usage	TCP/UDP	Sending	Receiving	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
RTP for Voice (WAN)	UDP	Note 3		A	Terminal in SIP network	Note 3		Command *10	*WAN Note 1 Note 2 Note 3 Note 4 *10: SET SIP_RTP_PORT_NO (setting of initial port)
RTP for Video(WAN)	UDP							Command *11	*WAN Note 1 Note 2 Note 3 Note 4 *11: SET SIP_MEDIA_PORT_NO (setting of initial port)
RTP for Voice (LAN)	UDP				*12			Command *13	*LAN Note 2 Note 3 Note 4 *12: Same as the “RTP” in the table “Initially-used port numbers by DT800.” *13: SET IPX_RTP_PORT_NO (setting of initial port)
RTP for Video (LAN)	UDP				*14			Command *15	*LAN Note 2 Note 3 Note 4 *14: Same as the “RTP” in the table “Initially-used port numbers by DT800.” *15: SET IPX_MEDIA_PORT_NO (setting of initial port)
TELNET	TCP	23		N	PC	-	-	-	*The port number of a TFTP server is a well-known port: 23. Note 5
TFTP	UDP	1024-		N	TFTP server	-	-	-	*The port number of a TFTP server is a well-known port: 69.
FTP	TCP	1024-		N	FTP server	-	-	-	*The port number of a DNS server is a well-know port: 21. Note 5

Initially-used port numbers by MG-SIP

Usage	TCP/UDP	Sending	Receiving	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
DNS	UDP	1025		N	DNS server	-	-	-	*The port number of a DNS server is a well-know port: 53.
T.38 (WAN)	UDP	Note 3		A	Terminal in SIP network	Note 3		Command *16	*WAN **Note 3 Note 4** *16: SET SIP_MEDIA_PORT_NO (setting of initial port)
T.38 (LAN)	UDP				*17			Command *18	*LAN **Note 3 Note 4** *17: Same as the “RTP” in the table “Initially-used port numbers by DT800.” *18: SET IPX_MEDIA_PORT_NO (setting of initial port)

Note 1: The port numbers for RTP (WAN) and SIP (Signaling) must be different. For example, when the port number for SIP (Signaling) is 5060, if you set the initial port value for RTP (WAN) to 4868, you can use ports 4868 through 5059 for RTP (WAN). Usable RTP (WAN) ports are depending on each MG-SIP.

Note 2: The initial port number must be an even number.

Note 3: As shown below, initial port numbers and used port ranges are different between MG(SIP)s.

Device	Usage	TCP/UDP	Sending port No.	Receiving port No.	Port range to be consumed	Port range you can choose
Software-based MG-SIP [SP-4078 MGSIPVM PROG-B] [SP-4080 MGSIPVM PROG-D]	RTP (WAN)	UDP	50000-50255	50000-50255	256 ports counting from the initial port.	1024-64000
	RTP (LAN)	UDP	51000-51511	51000-51511	512 ports counting from the initial port.	1024-64000
	H.245	TCP	40001-41024	40001-41024	1024 ports counting from the initial port.	1024-64511

Device	Usage	TCP/UDP	Sending port No.	Receiving port No.	Port range to be consumed	Port range you can choose
Software-based MG-SIP [SP-4085 MGSIPVM PROG-E]	RTP for Voice (WAN)	UDP	50000-50507	50000-50507	508 ports counting from the initial port.	1024-64000
	RTP for Video (WAN)	UDP	53000-53507	53000-53507	508 ports counting from the initial port.	1024-64000
	RTP for Voice (LAN)	UDP	51000-52015	51000-52015	1016 ports counting from the initial port.	1024-64000
	RTP for Video (LAN)	UDP	55000-55507	55000-55507	508 ports counting from the initial port.	1024-64000
	H.245	TCP	40001-41024	40001-41024	1024 ports counting from the initial port.	1024-64511
	T.38 (WAN)	UDP	54000-54253	54000-54253	254 ports counting from the initial port.	1024-64000
	T.38 (LAN)	UDP	56000-56253	56000-56253	254 ports counting from the initial port.	1024-64000
MG-SIP128 [MG-128SIPMGG/MG-128SIPMGG-B] [MG-128SIPMGJ/MG-128SIPMGJ-B] [MG-128SIPMGL-A]	RTP for Voice (WAN)	UDP	50000-50255	50000-50255	256 ports counting from the initial port.	1024-64000
	RTP for Video (WAN)	UDP	53000-53255	53000-53255	256 ports counting from the initial port.	1024-64000
	RTP for Voice (LAN)	UDP	51000-51511	51000-51511	512 ports counting from the initial port.	1024-64000
	RTP for Video (LAN)	UDP	55000-55255	55000-55255	256 ports counting from the initial port.	1024-64000
	H.245	TCP	40001-41024	40001-41024	1024 ports counting from the initial port.	1024-64511
	T.38 (WAN)	UDP	54000-54127	54000-54127	128 ports counting from the initial port.	1024-64000
	T.38 (LAN)	UDP	56000-56127	56000-56127	128 ports counting from the initial port.	1024-64000

Device	Usage	TCP/UDP	Sending port No.	Receiving port No.	Port range to be consumed	Port range you can choose
MG-SIP96	RTP (WAN)	UDP	50000-50191	50000-50191	192 ports counting from the initial port.	1024-64000
	RTP (LAN)	UDP	51000-51383	51000-51383	384 ports counting from the initial port.	1024-64000
	H.245	TCP	40001-41024	40001-41024	1024 ports counting from the initial port.	1024-64511
MG-SIP16	RTP (WAN)	UDP	50000-50031	50000-50031	32 ports counting from the initial port.	1024-65024
	RTP (LAN)	UDP	51000-51031	51000-51031	32 ports counting from the initial port.	1024-65024
	H.245	TCP	40001-41024	40001-41024	1024 ports counting from the initial port.	1024-64511
MG-16SIPMGA, SCA-16SIPMGA, SCA-16SIPMG(US)	RTP (WAN)	UDP	50000-50031	50000-50031	32 ports counting from the initial port.	1024-64000
	RTP (LAN)	UDP	51000-51063	51000-51063	64 ports counting from the initial port.	1024-64000
	H.245	TCP	40001-41024	40001-41024	1024 ports counting from the initial port.	1024-64511

Note 4: Make sure of the following when you use MG-SIP128 [MG-128SIPMGG/MG-128SIPMGG-B], MG-SIP128 [MG-128SIPMGL-A], MG-SIP96, SCA-16SIPMG(US), MG/SCA-16SIPMGA, MG-SIP16, or Software-Based MG-SIP:
If IP addresses of LAN side and WAN side belong to the same segment, port ranges used by RTP (WAN) and RTP (LAN) must not be duplicated.

Note 5: Available for MG-SIP128 [MG-128SIPMGG/MG-128SIPMGG-B, MG-128SIPMGJ/MG-128SIPMGJ-B, MG-128SIPMGL-A], MG-SIP96, SCA-16SIPMG(US), MG/SCA-16SIPMGA and Software-Based MG-SIP.

Note 6: TCP is supported for SP-3987 MGSIP PROG-B Issue 3 or later.

[MC&MG-COT Initially-used Port Numbers to Send and Receive Packets]

A: Available, N: Not available, -: Not applicable

Initially-used port numbers by MC&MG-COT

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change Note 1	To narrow port range			Remarks
									Port range unit	Max. number of ports used simultaneously	Hunt rule	
DRS-MC (Registration)	UDP	3456		A	*1	1024-65535	1	Command *2	-	-	-	*1: Same as the “DRS (Registration)” in the table “Initially-used port numbers by TP (also communicates with SP in another system-side).” *2: SET VALUE IP DRS_RECV_PORT *3: The sending port number is common between MC and MG. *4: SET VALUE IP_MG DRS_RECV_PORT
DRS-MG (Registration)	UDP	3456 *3	3457	A		1024-65535	1	Command *4	-	-	-	
PHE-MC (Signaling)	UDP	50000		A	Internal PHE for TP/SP part of SV9500	1024-65535	1	Command *5	-	-	-	*Peer port: 60130 *5: SET VALUE IP LPPM_PORT
PHI-MG (Signaling)	UDP	50001		A	PHI for TP/SP part of SV9500	1024-65535	1	Command *6	-	-	-	*Peer port: 64000 *6: SET VALUE IP_MG LPPM_PORT

Initially-used port numbers by MC&MG-COT

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change Note 1	To narrow port range			Remarks
									Port range unit	Max. number of ports used simultaneously	Hunt rule	
Prepared-MC	UDP	10001		A	*7	1024-65535	1	Command *8	-	-	-	*7: Same as the “SIPPHD (prepared)” in the table “Initially-used port numbers by SP (also communicates with TP in another system-side).” *8: SET VALUE IP SWITCH_CTRL_PORT *9: SET VALUE IP_MG SWITCH_C-TRL_PORT
Prepared-MG	UDP	10002		A		1024-65535	1	Command *9	-	-	-	

Initially-used port numbers by MC&MG-COT

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change Note 1	To narrow port range			Remarks
									Port range unit	Max. number of ports used simultaneously	Hunt rule	
H.245-MC	TCP	1024-65535		*10	*11	1024-65535	*12	Commands *13	1/call	4	loop	*You can change the port range (START/END) since issue 8A (TCP cannot use the same port soon. Therefore, save a little more ports than necessary). But if a peer supports the new procedure, these ports are not used. *10: Available since issue 8A. *11: Same as the “SIPPHD (H.245)” in the table “Initially-used port numbers by SP (also communicates with TP in another system-side).” *12: Depends on OS by default/10 or more when narrowing the range. *13: SET VALUE IP H245_PORT_START SET VALUE IP H245_PORT_END

Initially-used port numbers by MC&MG-COT

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change Note 1	To narrow port range			Remarks
									Port range unit	Max. number of ports used simultaneously	Hunt rule	
H.245-MG	TCP	1024-65535		*14	*15	1024-65535	*16	Commands *17	1/call	2	loop	*You can change the port range (START/END) since issue 8A (TCP cannot use the same port soon. Therefore, save a little more ports than necessary). But if a peer supports the new procedure, these ports are not used. *14: Available since issue 8A. *15: Same as the “SIPPHD (H.245)” in the table “Initially-used port numbers by SP (also communicates with TP in another system-side).” *16: Depends on OS by default/10 or more when narrowing the range. *17: SET VALUE IP H245_PORT_START SET VALUE IP H245_PORT_END

Initially-used port numbers by MC&MG-COT

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change Note 1	To narrow port range			Remarks
									Port range unit	Max. number of ports used simultaneously	Hunt rule	
RTP-MC (Voice)	UDP	1024-2047		A	*18	1024-64510	*19	Command *20	2/call (RTP+ RTCP)	8	loop	*Assign an even number to the initial port number. *18: Same as the “RTP” in the table “Initially-used port numbers by DT800.” *19: Uses 1024 ports counting from the initial port. *20: SET STARTPORT
RTP-MG (Voice)	UDP	1024-2047		A		1024-64510			2/call (RTP+ RTCP)	4	loop	
Telnet	TCP	23		N	PC	-	-	-	-	-	-	

Initially-used port numbers by MC&MG-COT

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change Note 1	To narrow port range			Remarks
									Port range unit	Max. number of ports used simultaneously	Hunt rule	
FTP (Client)	TCP	1024-		N	FTP server	-	-	-	-	-	-	*The port numbers of a FTP server are well-known ports: 20, 21.
TFTP (Client)	UDP	1024-		N	TFTP server	-	-	-	-	-	-	*The port number of a TFTP server is a well-known port: 69.
DHCP (Client)	UDP	68		N	DHCP server	-	-	-	-	-	-	*The port numbers of a DHCP server are well-known ports: 67, 68.

Note 1: The command directly changes ConfigFile (SET VALUE).

[SCA-6COT (Proprietary Protocol) Initially-used Port Numbers to Send and Receive Packets]

A: Available, N: Not available, -: Not applicable

Initially-used port numbers by SCA-6COT (Proprietary Protocol)

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change Note 1	To narrow port range			Remarks
									Port range unit	Max. number of ports used simultaneously	Hunt rule	
DRS-MG (Registration)	UDP	3456	3457	A	*1	1024-65535	1	Command *2	-	-	-	*1: Same as the “DRS (Registration)” in the table “Initially-used port numbers by TP (also communicates with SP in another system-side).” *2: SET VALUE IP_MG DRS_RECV_PORT
PHI-MG (Signaling)	UDP	50001		A	PHI for TP/SP part of SV9500	1024-65535	1	Command *3	-	-	-	*Peer port: 64000 *3: SET VALUE IP_MG LPPM_PORT
Prepared-MG	UDP	10002		A	*4	1024-65535	1	Command *5	-	-	-	*4: Same as the “SIPPHD (prepared)” in the table “Initially-used port numbers by SP (also communicates with TP in another system-side).” *5: SET VALUE IP_MG SWITCH_CTRL_PORT

Initially-used port numbers by SCA-6COT (Proprietary Protocol)

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change Note 1	To narrow port range			Remarks
									Port range unit	Max. number of ports used simultaneously	Hunt rule	
H.245-MG	TCP	1024-65535		A	*6	1024-65535	*7	Commands *8	1/call	6	loop	*You can change the port range (START/END) (TCP cannot use the same port soon. Therefore, save a little more ports than necessary). But if a peer supports the new procedure, these ports are not used. *6: Same as the “SIPPHD (H.245)” in the table “Initially-used port numbers by SP (also communicates with TP in another system-side).” *7: Depends on OS by default/10 or more when narrowing the range. *8: SET VALUE IP H245_PORT_START SET VALUE IP H245_PORT_END

Initially-used port numbers by SCA-6COT (Proprietary Protocol)

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change Note 1	To narrow port range			Remarks
									Port range unit	Max. number of ports used simultaneously	Hunt rule	
RTP-MG (Voice)	UDP	1024-2047		A	*9	1024-64510	*10	Command *11	2/call (RTP+ RTCP)	12	loop	*9: Same as the “RTP” in the table “Initially-used port numbers by DT800.” *10: Uses 1024 ports counting from the initial port. *11: SET STARTPORT

Initially-used port numbers by SCA-6COT (Proprietary Protocol)

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change Note 1	To narrow port range			Remarks
									Port range unit	Max. number of ports used simultaneously	Hunt rule	
Telnet	TCP	23		N	PC	-	-	-	-	-	-	
FTP (Client)	TCP	1024-		N	FTP server	-	-	-	-	-	-	*The port numbers of a FTP server are well-known ports: 20, 21.
TFTP (Client)	UDP	1024-		N	TFTP server	-	-	-	-	-	-	*The port number of a TFTP server is a well-known port: 69.
DHCP (Client)	UDP	68		N	DHCP server	-	-	-	-	-	-	*The port numbers of a DHCP server are well-known ports: 67, 68.

Note 1: The command directly changes ConfigFile (SET VALUE).

[SCA-6COT (SIP) Initially-used Port Numbers to Send and Receive Packets]

A: Available, N: Not available, -: Not applicable

Initially-used port numbers by SCA-6COT (SIP)

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	To narrow port range			Remarks
									Port range unit	Max. number of ports used simultaneously	Hunt rule	
PHI (SIP Signaling)	UDP	5060		A	PHI for SP part of SV9500	1024-65535	1	Command *1	-	-	-	*1: SET SIGNALING_PORT_NO
RTP	UDP	1024-2047		A	*2	1024-64510	*3	Command *4	2/call (RTP+RTCP)	12	loop	*2: Same as the “RTP” in the table “Initially-used port numbers by DT800.” *3: Uses 1024 ports counting from the initial port. *4: SET STARTPORT
Telnet	TCP	23		N	PC	-	-	-	-	-	-	
FTP (Client)	TCP	1024-		N	FTP server	-	-	-	-	-	-	*The port numbers of a FTP server are well-known ports: 20, 21.

Initially-used port numbers by SCA-6COT (SIP)

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	To narrow port range			Remarks
									Port range unit	Max. number of ports used simultaneously	Hunt rule	
TFTP (Client)	UDP	1024-		N	TFTP server	-	-	-	-	-	-	*The port number of a TFTP server is a well-known port: 69.
DHCP (Client)	UDP	68		N	DHCP server	-	-	-	-	-	-	*The port numbers of a DHCP server are well-known ports: 67, 68.
DNS (Client)	UDP	1024		N	DNS server	-	-	-	-	-	-	*The port number of a DNS server is a well-known port: 53.

[8LC Card Initially-used Port Numbers to Send and Receive Packets]

A: Available, N: Not available, -: Not applicable

Initially-used port numbers by 8LC Card

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	To narrow port range			Remarks
									Port range unit	Max. number of ports used simultaneously	Hunt rule	
PHI (SIP Signaling)	UDP	5060		A	PHI for SP part of SV9500	1024-65535	1	Command *1	-	-	-	*1: SET SIGNALING_PORT_NO
RTP	UDP	1024-2047		A	*2	1024-64510	*3	Command *4	2/call (RTP+RTCP)	16	loop	*2: Same as the “RTP” in the table “Initially-used port numbers by DT800.” *3: Uses 1024 ports counting from the initial port. *4: SET STARTPORT
Telnet	TCP	23		N	PC	-	-	-	-	-	-	

Initially-used port numbers by 8LC Card

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	To narrow port range			Remarks
									Port range unit	Max. number of ports used simultaneously	Hunt rule	
FTP (Client)	TCP	1024-		N	FTP server	-	-	-	-	-	-	*The port numbers of a FTP server are well-known ports: 20, 21.
TFTP (Client)	UDP	1024-		N	TFTP server	-	-	-	-	-	-	*The port number of a TFTP server is a well-known port: 69.
DHCP (Client)	UDP	68		N	DHCP server	-	-	-	-	-	-	*The port numbers of a DHCP server are well-known ports: 67, 68.
DNS (Client)	UDP	1024		N	DNS server	-	-	-	-	-	-	*The port number of a DNS server is a well-known port: 53.

[MH250 Initially-used Port Numbers to Send and Receive Packets]

A: Available, N: Not available, -: Not applicable

Initially-used port numbers by MH250

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
MH-SIP (SIP Signaling)	UDP	5060		A	MH-SIP for SP part of SV9500	1024-65535 (excluding 5067, 5068, 5070)	Single port	*1	*1: Access from the tool; setting from the board
RTP RTCP	UDP	50000 *2	50000	A	*3	1024-65535	*4	*5	*2: RTP uses even numbers *3: Same as the “RTP” in the table “Initially-used port numbers by DT800.” *4: Uses Even numbers in the range you set. *5: Access from the tool; setting from the board
Instant message (IM)	UDP	5060		A	MH-SIP for SP part of SV9500	1024-65535 (excluding 5067, 5068, 5070)	Single port	*6	*6: Access from the tool; setting from the board
Presence	UDP	5060	6060	A	Presence server	1024-65535 (excluding 5067, 5068, 5070)	-	*7	*7: Access from the tool; setting from the board
DHCP	UDP	68		N	DHCP server	-	-	-	*Server: 67, Client: 68
DNS	UDP	1024-65535	53	N	DNS server	-	-	-	

Initially-used port numbers by MH250

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
Ping	-	-		N	PC	-	-	-	*Available to send and receive a ping.
HTTP	TCP	80		N	Maintenance terminal	-	-	-	*A maintenance terminal uses an unoccupied port.
FTP	-	-		-	-	-	-	-	
TFTP	-	-		-	-	-	-	-	
Telnet	-	-		-	-	-	-	-	
802.1X	-	-		-	-	-	-	-	*Uses no port number.
NTP	UDP	1024-65535	123	N	-	-	-	-	

[IPG (Digital) Initially-used Port Numbers to Send and Receive Packets]

A: Available, N: Not available, -: Not applicable

Initially-used port numbers by IPG (Digital)

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
DRS (Registration)	UDP	7001		A	* 1	1024-65535	32	WebPro	* 1: Same as the “DRS (Registration)” in the table “Initially-used port numbers by TP (also communicates with SP in another system-side).”
PHD (Signaling)	UDP	7201		A	* 2	1024-65535	Single port	WebPro	* 2: Same as the “PHD (Signaling)” in the table “Initially-used port numbers by DtermIP (Proprietary Protocol)/ INASET240G/INASET320XML.”
Prepared (Voice Control)	UDP	4000		A	* 3	1024-65535	Single port	WebPro	* 3: Same as the “SIPPHD (prepared)” in the table “Initially-used port numbers by SP (also communicates with TP in another system-side).”
H.245	UDP	1024-65535		N	* 4	1024-65535 (0 for any port. When 0 is set, the OS acquires a port between 1024-5000)	32	WebPro	* 4: Same as the “SIPPHD (H.245)” in the table “Initially-used port numbers by SP (also communicates with TP in another system-side).”
RTP	UDP	10020-10082		A	* 5	Even number between 1024-65535	32 × 2	WebPro	* 5: Same as the “RTP” in the table “Initially-used port numbers by DT800.”
Telnet	TCP	-		A	PC	1024-65535	Single port	WebPro	
WebPro	TCP	80		A	PC	1024-65535	Single port	WebPro	
DHCP	UDP	-		-	-	-	-	-	

Initially-used port numbers by IPG (Digital)

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
DNS	UDP	-		-	-	-	-	-	

[IPG (Analog) Initially-used Port Numbers to Send and Receive Packets]

A: Available, N: Not available, -: Not applicable

Initially-used port numbers by IPG (Analog)

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
DRS (Registration)	UDP	7001		A	* 1	1024-65535	32	WebPro	* 1: Same as the “DRS (Registration)” in the table “Initially-used port numbers by TP (also communicates with SP in another system-side).”
PHE (Signaling)	UDP	50000		A	* 2	1024-65535	Single port	WebPro	* 2: Same as the “PHE (Signaling)” in the table “Initially-used port numbers by TP.”
Prepared (Voice Control)	UDP	4000		A	* 3	1024-65535	Single port	WebPro	* 3: Same as the “SIPPHD (prepared)” in the table “Initially-used port numbers by SP (also communicates with TP in another system-side).”
H.245	UDP	1024-65535		N	* 4	1024-65535 (0 for any port. When 0 is set, the OS acquires a port between 1024-5000)	32	WebPro	* 4: Same as the “SIPPHD (H.245)” in the table “Initially-used port numbers by SP (also communicates with TP in another system-side).”
RTP	UDP	10020-10082		A	* 5	Even number between 1024-65535	32 × 2	WebPro	* 5: Same as the “RTP” in the table “Initially-used port numbers by DT800.”
Telnet	TCP	-		A	PC	1024-65535	Single port	WebPro	
WebPro	TCP	80		A	PC	1024-65535	Single port	WebPro	
DHCP	UDP	-		-	-	-	-	-	
DNS	UDP	-		-	-	-	-	-	

[UG50 Initially-used Port Numbers to Send and Receive Packets]

A: Available, N: Not available, -: Not applicable

Initially-used port numbers by UG50

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
DRS (Registration)	UDP	7001		A	* 1	1024-65439	96	WebPro	* 1: Same as the “DRS (Registration)” in the table “Initially-used port numbers by TP (also communicates with SP in another system-side).” -Ports for the consecutive 96 channels from the set port number will be reserved. [Communication] Between UG50 and Telephony Server (LAN 1)
DLC (Signaling)	UDP	7201		A	* 2	1024-65439	96	WebPro	* 2: Same as the “PHE (Signaling)” in the table “Initially-used port numbers by TP.” -Ports for the consecutive 96 channels from the set port number will be reserved. [Communication] Between UG50 and Telephony Server (LAN 1)

Initially-used port numbers by UG50

Usage	TCP/UDP	Sending port No. / Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
LC (Signaling)	UDP	50000	A	*3	1024-65439	96	WebPro	*3: Same as the “PHE (Signaling)” in the table “Initially-used port numbers by TP.” -Ports for the consecutive 96 channels from the set port number will be reserved. [Communication] Between UG50 and Telephony Server (LAN 1)
COT (Signaling)	UDP	51000	A	Internal PHI-BRI for TP of SV9500	1024-65439	96	WebPro	-Ports for the consecutive 96 channels from the set port number will be reserved. [Communication] Between UG50 and Telephony Server (LAN 1)
PRT (Signaling)	TCP	7500	A	Internal PHI-PRI for TP of SV9500	1024-65439	96	WebPro	-Ports for the consecutive 96 channels from the set port number will be reserved. [Communication] Between UG50 and Telephony Server (LAN 2)

Initially-used port numbers by UG50

Usage	TCP/UDP	Sending port No.	Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
SIP Signaling port NO.	UDP	5060		A	*4	1024-64574	96	WebPro	*4 Same as the “SIPPHD (prepared)” in the table “Initially-used port numbers by SP (also communicates with TP in another system-side).” -Ports for 96 channels from the set port NO. will be re-served per 10 channels. (e.g.) 5060, 5070, ...6110 [Communication] Between UG50 and Telephony Server (LAN 1)
DIM (Telnet)	TCP	-		A	PC	1024-65535 (e.g.) 56789	Single port	WebPro	-Only the set port NO. will be reserved. [Communication] Between UG50 and PC The following settings are required to enable Telnet connection: [System Data Menu] • 1-6-01: 01 TCP Port Enter a TCP port number. • 1-6-08: 01 Access Enabling Choose “1: Enabled.”

Initially-used port numbers by UG50

Usage	TCP/UDP	Sending port No. / Receiving port No.	Changing port No.	Destination device	Port range you can choose	Port range to be consumed	How to change	Remarks
Prepared (Voice Control)	UDP	10001	N	*4	-	Single port	-	*4: Same as the “SIPPHD (prepared)” in the table “Initially-used port numbers by SP (also communicates with TP in another system-side).” -Only the set port NO. will be reserved. [Communication] Between UG50 and Telephone Set
Web Programming TCP port No.	TCP	80	A	PC	1-65535	Single port	WebPro	-Only the set port NO. will be reserved. [Communication] Between UG50 and PC
RTP	UDP	10020	A	*5	1024-65344	192	WebPro	*5 Same as the “RTP” in the table “Initially-used port numbers by DT800.” -The first port must be an even number. Ports for the consecutive 192 (96 X 2) channels from the set port number will be reserved. [Communication] Between UG50 and Telephone Set
IPLD Debug (Telnet)	TCP	23	N	PC	-	Single port	-	[Communication] Between UG50 and PC

4. Transmission and Reception of DTMF

DTMF Support Quick Reference Table for Terminals and Gateways

Note: Only the supported protocols are described in this section.

DEVICE GROUP	TERMINAL/GATEWAY	REFER TO
SIP Multi-Functions (Pattern 1)	DT800/DT700 series	• For transmission and reception: [DTMF Transmission/Reception] table • For DTMF transmission between device groups: [DTMF Transmission/Reception Matrix] table
	DtermIP(SIP)	
SIP Multi-Functions (Pattern 2)	Soft Client SP350	
	DtermSP30 (SIP)	
Standard SIP/WLAN SIP	SP Controlled SIP Terminal	
	MH250	
Terminal/Trunk (Proprietary Pattern 1)	MG(BRI) (Proprietary Protocol) (SP-3709)	
	DtermIP (Proprietary Protocol)	
	IP Enabled Dterm	
	DtermSP30 (Proprietary Protocol)	
	IPPAD (PA-32IPDA)	
	IPPAD (CH-IPDA)	
	Analog 2MC	
	VS32 (Proprietary Protocol)	

DEVICE GROUP	TERMINAL/GATEWAY	REFER TO
Terminal/Trunk (Proprietary Pattern 2)	MCMG Card [SCA-4LC2COTA/MG-4LC2COTA]	• For transmission and reception: [DTMF Transmission/Reception] table • For DTMF transmission between device groups: [DTMF Transmission/Reception Matrix] table
	MG-COT Card [SCA-6COTA] (SP-3875)	
	MG(PRI) (Proprietary Protocol)	
	MG(SIP)	
	UG50 (COT-TYPE1)	
	UG50-4LC2COTA (COT)	
	UG50 (COT-TYPE2) [Proprietary Protocol]	
	UG50-6COT [Proprietary Protocol]	
	UG50 (PRT 1.5M) [Proprietary Protocol]	
	UG50 (PGT-TYPE1)	
	UG50-4LC2COTA (PGT)	
	UG50 (PGT-TYPE2) [Proprietary Protocol]	
	UG50-24PRIA [Proprietary Protocol]	
	UG50 (PRT 2M) [Proprietary Protocol]	
	UG50-30PRIA [Proprietary Protocol]	
	UG50 (LC) [Proprietary Protocol]	
	UG50 2MG	
Terminal/Trunk (Proprietary Pattern 3)	IPPAD (PA-32IPDB)	
Terminal/Trunk (SIP Pattern 1)	8LC	
	MG-COT Card [SCA-6COTB] (SP-3948) / MG-COT Card [SCA-6COTC] (SP-3948)	
	MG(BRI) (SIP)	
	MG(PRI) (SIP)	
	UG50 (LC) [SIP]	
	UG50-8LC	
	UG50 (COT-TYPE2) [SIP]	
	UG50-6COT [SIP]	
	UG50 (PGT-TYPE2) [SIP]	
	UG50 (PRT 1.5M) [SIP]	
	UG50-24PRIA [SIP]	
	UG50 (PRT 2M) [SIP]	
	UG50-30PRIA [SIP]	

DEVICE GROUP	TERMINAL/GATEWAY	REFER TO
Terminal/Trunk (SIP Pattern 2)	VS32 (SIP)	• For transmission and reception: [DTMF Transmission/Reception] table • For DTMF transmission between device groups: [DTMF Transmission/Reception Matrix] table
SIP Handler Controlled SIP Terminals	SIP Handler Controlled SIP Terminal	

[DTMF Transmission/Reception]

X: Supported, N: Not Supported, C: Supported with Conditions

DTMF Transmission/Reception Capability for Device Groups

Device Group	DTMF Method						Remarks
	TRANSMISSION			RECEPTION			
	G.711 Inband	RFC 2833	H.245 Note 1	G.711 Inband	RFC 2833	H.245 Note 1	
SIP Multi-Functions (Pattern 1)	X	X	X	X	X	X	In transmission, G.711 inband DTMF is supported but not used due to the configuration of Signaling Processor.
SIP Multi-Functions (Pattern 2)	N	N	X	X	N	X	
Standard SIP/WLAN SIP	X	X	N	X	X	N	
Terminal/Trunk (Proprietary Pattern 1)	N	N	X	X	N	X	
Terminal/Trunk (Proprietary Pattern 2)	X	N Note 2	X	X	N Note 2	X	In transmission, G.711 inband takes precedence over H.245.
Terminal/Trunk (Proprietary Pattern 3)	X	N	N	X	N	X	
Terminal/Trunk (SIP Pattern 1)	X	X	X	X	X	X	
Terminal/Trunk (SIP Pattern 2)	X	N	X	X	X	X	
SIP Handler Controlled SIP Terminals	C Note 3	C Note 3	C Note 3	C Note 3	C Note 3	C Note 3	When both the sending and receiving end points support RFC 2833 DTMF, H.245 DTMF tones are not transmitted despite the reception of a SIP-INFO message.

Note 1: "H.245" includes Signaling Processor (SP)-mediated H.245 control channels. For DTMF transmission between SP and devices, the Info-DTMF or SIP-INFO method is used.

Note 2: When the setting of RFC2833 packet transparency is enabled, RFC 2833 packets can be processed in the SV9500 network. For details, refer to command section (set rfc2833_pass) of each MG(SIP) in Peripheral Equipment Description (IP Devices). RFC2833 transparency is supported for the following MG-SIPs only.

- MG-SIP128 [MG-128SIPMGL-A].
- MG-SIP16 [SCA-16SIPMG (US)/SCA-16SIPMG (US)-B] with the firmware SP-3988 MGSIP PROG-G Issue 10 or later.
- Software-based MG-SIP with the firmware SP-4085 MGSIPVM PROG-E Issue 1 or later.

Note 3: Suitable transmission method and reception capability depend on the specifications of the terminal or the Config setting.

[DTMF Transmission/Reception Matrix]

N/A: Not available

DTMF Transmission/Reception Capability for Device Groups

Device Group		Receiver								
		SIP Multi-Functions (Pattern 1)	SIP Multi-Functions (Pattern 2)	Standard SIP/ WLAN SIP	Terminal/ Trunk (Proprietary Pattern 1)	Terminal/ Trunk (Proprietary Pattern 2)	Terminal/ Trunk (Proprietary Pattern 3)	Terminal/ Trunk (SIP Pattern 1)	Terminal/ Trunk (SIP Pattern 2)	SIP Handler Controlled SIP Terminals
Sender	SIP Multi-Functions (Pattern 1)	RFC 2833 H.245 (SP)	H.245 (SP)	RFC 2833	H.245 (SP)	H.245 (SP)	H.245 (SP)	RFC 2833 H.245 (SP)	RFC 2833 H.245 (SP)	RFC 2833 H.245 (INFO)
	SIP Multi-Functions (Pattern 2)	H.245 (SP)	H.245 (SP)	N/A	H.245 (SP)	H.245 (SP)	H.245 (SP)	H.245 (SP)	H.245 (SP)	H.245 (INFO)
	Standard SIP/WLAN SIP	RFC 2833 G.711	G.711	RFC 2833 G.711	G.711	G.711	G.711	RFC 2833 G.711 **Note 1**	RFC 2833 G.711	RFC 2833 G.711
	Terminal/Trunk (Proprietary Pattern 1)	H.245 (SP)	H.245 (SP)	N/A	H.245	H.245	H.245	H.245 (SP)	H.245 (SP)	H.245 (INFO)
	Terminal/Trunk (Proprietary Pattern 2)	G.711 H.245 (SP) **Note 2**, **Note 3**, **Note 4**, **Note 5**	G.711 H.245 (SP) **Note 2**, **Note 3**, **Note 4**, **Note 5**	G.711 **Note 2**, **Note 3**, **Note 4**, **Note 5**	G.711 H.245 **Note 2**, **Note 3**, **Note 4**, **Note 5**	G.711 H.245 **Note 2**, **Note 3**, **Note 4**, **Note 5**	G.711 H.245 **Note 2**, **Note 3**, **Note 4**, **Note 5**	G.711 H.245 (SP) **Note 2**, **Note 3**, **Note 4**, **Note 5**	G.711 H.245 (SP) **Note 2**, **Note 3**, **Note 4**, **Note 5**	G.711 H.245 (INFO) **Note 2**, **Note 3**, **Note 4**, **Note 5**
	Terminal/Trunk (Proprietary Pattern 3)	G.711	G.711	G.711	G.711	G.711	G.711	G.711	G.711	G.711
	Terminal/Trunk (SIP Pattern 1)	RFC 2833 H.245 (SP)	H.245 (SP)	RFC 2833	H.245 (SP)	H.245 (SP)	H.245 (SP)	RFC 2833 H.245 (SP)	RFC 2833 H.245 (SP)	RFC 2833 H.245 (INFO)
	Terminal/Trunk (SIP Pattern 2)	G.711 H.245 (SP)	G.711 H.245 (SP)	G.711	G.711 H.245 (SP)	G.711 H.245 (SP)	G.711 H.245 (SP)	G.711 H.245 (SP)	G.711 H.245 (SP)	G.711 H.245 (INFO)
	SIP Handler Controlled SIP Terminals	RFC 2833 G.711 INFO (H.245)	G.711 INFO (H.245)	RFC 2833 G.711	G.711 INFO (H.245)	G.711 INFO (H.245)	G.711 INFO (H.245)	RFC 2833 G.711 INFO (H.245)	RFC 2833 G.711 INFO (H.245)	RFC 2833 G.711 INFO (H.245)

Note 1: Until version 1.19 UG50 only supports RFC 2833. From version 1.20 UG50 supports both RFC 2833 and G.711.

Note 2: IPS (NEAX2000) can be configured with software or hardware switches to use H.245 or G.711 for conversion of DTMF transmission from TDM to IP networks.

Note 3: In case of using MG(PRI) (Proprietary Protocol), MCMG Card [SCA-4LC2COTA] and MG-COT Card [SCA-6COTA] (SP-3875) contact NEC maintenance personnel.

Note 4: When the setting of RFC2833 packet transparency is enabled, RFC 2833 packets can be processed in the SV9500 network. Therefore, DTMF conversion with RFC2833 between SV9500 network and SIP network is available. For details, refer to command section (set rfc2833_pass) of each MG(SIP) in Peripheral Equipment Description (IP Devices). RFC2833 transparency is supported for the following MG-SIPs only.

- MG-SIP128 [MG-128SIPMGL-A].
- MG-SIP16 [SCA-16SIPMG (US)/SCA-16SIPMG (US)-B] with the firmware SP-3988 MGSIP PROG-G Issue 10 or later.
- Software-based MG-SIP with the firmware SP-4085 MGSIPVM PROG-E Issue 1 or later.

Note 5: The following table shows the capability pattern of DTMF method for MG-SIP.

X: Supported N: Not supported

No.	DTMF Method Used in SV9500 Network	Direction of Conversion on MG(SIP)	DTMF Method Used in SIP Network	Support
1	H.245 (UII/Proprietary method)	→	RFC 2833	X
2	H.245 (UII/Proprietary method)	←	RFC 2833	X
3	H.245 (UII/Proprietary method)	→	G.711 inband	X
4	H.245 (UII/Proprietary method)	←	G.711 inband	N
5	G.711 inband	→	RFC 2833	N
6	G.711 inband	←	RFC 2833	N
7	G.711 inband	→	G.711 inband	X
8	G.711 inband	←	G.711 inband	X
9	RFC2833	→	RFC2833	X **Note 6**
10	RFC2833	←	RFC2833	X **Note 6**
11	RFC2833	→	G.711 inband	X **Note 6**
12	RFC2833	←	G.711 inband	N

Note 6: This pattern is supported for the following MG-SIPs only.

- MG-SIP128 [MG-128SIPMGL-A].
- MG-SIP16 [SCA-16SIPMG (US)/SCA-16SIPMG (US)-B] with the firmware SP-3988 MGSIP PROG-G Issue 10 or later.
- Software-based MG-SIP with the firmware SP-4085 MGSIPVM PROG-E Issue 1 or later.

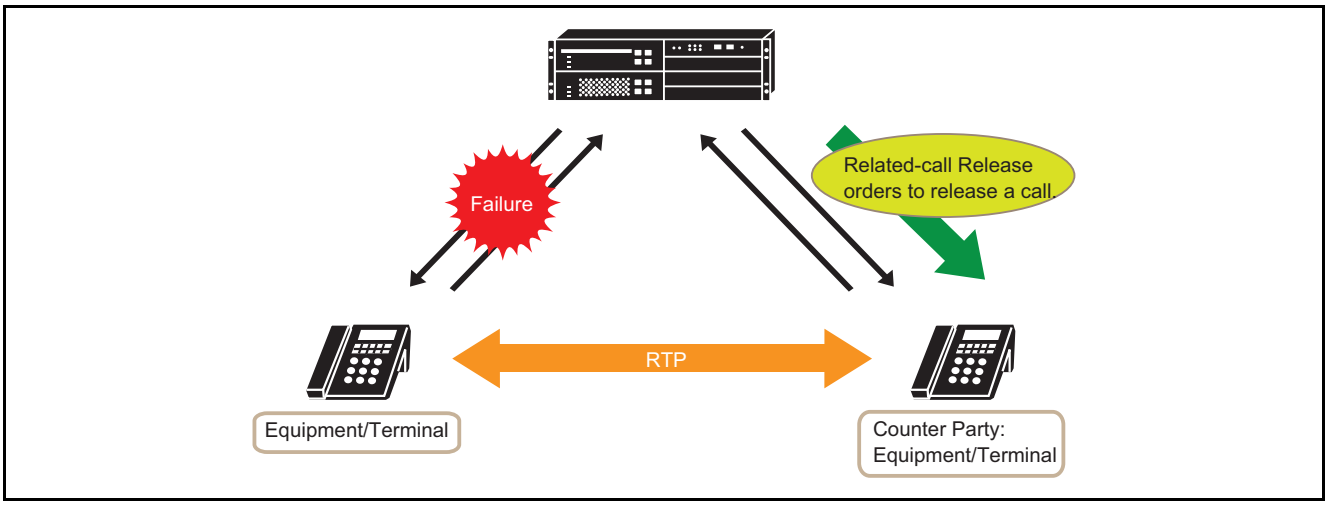
5. Operation of IP Equipment/Terminals when a Fault Occurs during a Conversation

A conversation can be retained even if a fault occurs during the conversation. This section explains operation of IP equipment/terminals when a fault occurs during a conversation.

5.1. Examples

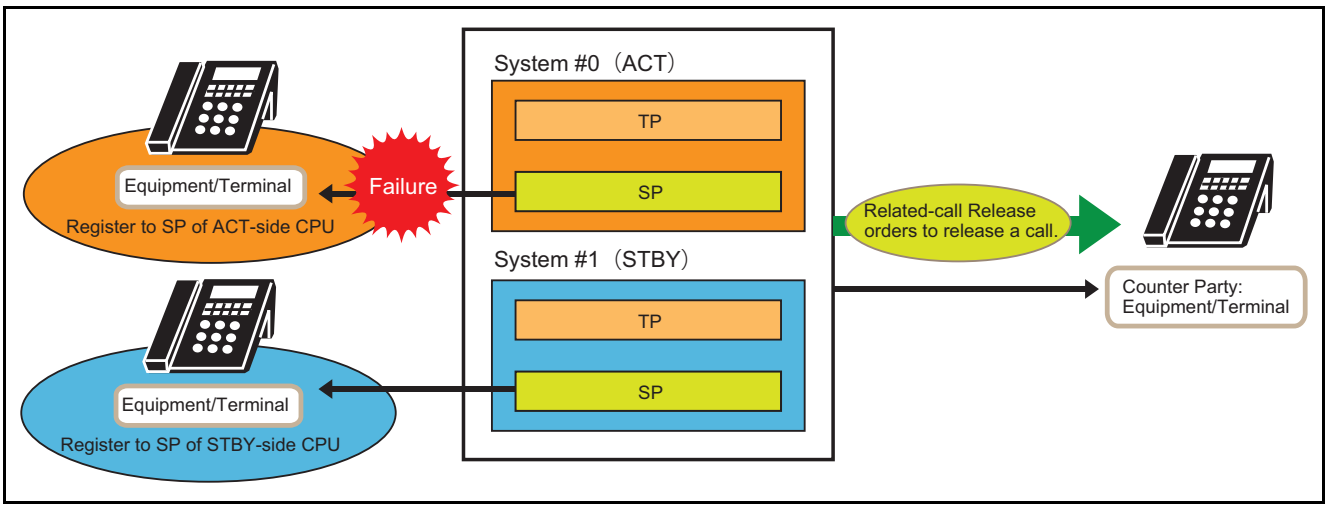
The following figures shows examples for operation of IP equipment/terminals when a fault occurs during a conversation.

Communication Failure between IP Equipment/Terminal and the Telephony Server



Note: Even if IP equipment/terminals have Call Retention function, the Telephony Server may order the counter party to release a call by Related-call Release. In this case, the call will not be retained.

Communication Failure by LAN cable link down at ACT-side CPU



Note: When IP equipment/terminals register to SP of STBY-side CPU, the Telephony Server may order the counter party to release a call by Related-call Release. In this case, the call will not be retained.

5.2. Call Retention Function Status in IP Equipment/Terminals

The following table shows the operation of IP equipment/terminals when a fault occurs during a conversation.
The table describes information when Call Retention function is activated in IP equipment/terminals. If IP equipment/terminals have particular conditions such as the case that Call Retention function becomes inactive, the conditions are noted below the table.

Note: Call Retention function is used to retain a conversation in progress if a fault occurs.

IP Equipment/Terminal **Note 1**, **Note 17**	Required Firmware **Note 2**	Time Duration Call can be retained **Note 3**	Event which causes the discontinuation of Call/Call Retention function	Remarks
DT800 Series/DT700 Series **Note 4**, **Note 5**	No Condition	No Limit	Handset: • When going on-hook • When receiving system reset signal Headset/Speaker: • Key operation on terminal • When receiving system reset signal **Note 8**	
DtermIP (Proprietary Protocol) **Note 4**	Ver. 2.00 or later **Note 7**	No Limit	Handset: • When going on-hook • Key operation on terminal • When receiving system reset signal Headset/Speaker: • Key operation on terminal • When receiving system reset signal **Note 8**	
DtermIP (SIP) **Note 4**, **Note 5**	Ver. 4.0.0.0 or later	No Limit	Handset: • When going on-hook • When receiving system reset signal Headset/Speaker: • Key operation on terminal • When receiving system reset signal **Note 8**	
	Ver. 4.0.0.0 or earlier	No Limit	Handset: • When going on-hook • Key operation on terminal • When receiving system reset signal Headset/Speaker: • Key operation on terminal • When receiving system reset signal **Note 8**	

IP Equipment/Terminal Note 1, Note 17		Required Firmware Note 2	Time Duration Call can be retained Note 3	Event which causes the discontinuation of Call/Call Retention function	Remarks
WLAN Handset (MH250) Note 4, Note 6		No Condition	Terminal: No Limit Telephony Server: Guard for 63 min.	Key operation on terminal	
SP Controlled Standard SIP terminal (Keep-alive through OPTIONS method) Note 6		No Condition	Terminal: No Limit Telephony Server: Guard for 63 min.	Key operation on terminal	
SP Controlled Standard SIP terminal (Keep-alive through Session Timer method) Note 6		No Condition	Terminal: Disconnect by Session Timer cycle Telephony Server: Guard for 63 min.	Key operation on terminal	
SIP Handler Controlled SIP terminal (Keep-alive through OPTIONS method) Note 6		No Condition	No Limit	Key operation on terminal	
SIP Handler Controlled SIP terminal (Keep-alive through Session Timer method) Note 6		No Condition	Terminal: Disconnect by Session Timer cycle	Key operation on terminal	
DtermSP30	Proprietary Protocol	Ver. 4 or later Note 9	No Limit	• Key operation on terminal, • When receiving system reset signal Note 8	
	SIP	Ver. 4 or later Note 9	No Limit	• Key operation on terminal, • When receiving system reset signal Note 8	
Soft Client SP350		No Condition	No Limit	• Key operation on terminal, • When receiving system reset signal Note 8	
Software-based VS32	Proprietary Protocol	No condition	Up to 2 minutes 30 seconds Note 12	When Health Check timeout occurs	
VS-32(Dual) Card [SCA-VS32VA]	Proprietary Protocol	No Condition	Up to 2 minutes 30 seconds Note 12	When Health Check timeout occurs	
	SIP	No Condition	Up to 2 minutes 30 seconds Note 12	When Health Check timeout occurs	
VS-32(Dual) Card [SCA-VS32VA-B]	Proprietary Protocol	No Condition	Up to 2 minutes 30 seconds Note 12	When Health Check timeout occurs	
	SIP	No Condition	Up to 2 minutes 30 seconds Note 12	When Health Check timeout occurs	

IP Equipment/Terminal Note 1, Note 17		Required Firmware Note 2	Time Duration Call can be retained Note 3	Event which causes the discontinuation of Call/Call Retention function	Remarks
VS-32(Dual) Box [MG-VS32VA]	Proprietary Protocol	No Condition	Up to 2 minutes 30 seconds Note 12	When Health Check timeout occurs	
	SIP	No Condition	Up to 2 minutes 30 seconds Note 12	When Health Check timeout occurs	
Analog 2MC		No Condition	Up to 2 minutes 30 seconds Note 12	When Health Check timeout occurs	
8LC Card [SCA-8LCC/SCA-8LCC-EMEA]		SP-3983 8MC PROG-B Issue 5.0 or later	No Limit	• When a loop is opened at counter party • When not receiving RTP from counter party for a certain period	
		Earlier than SP-3983 8MC PROG-B Issue 5.0		• When a loop is opened at counter party	
8LC Card [SCA-8LCA/SCA-8LCA-EMEA]		SP-3893 8MC PROG-A Issue 11.0 or later	No Limit	• When a loop is opened at counter party • When not receiving RTP from counter party for a certain period	
		Earlier than SP-3893 8MC PROG-A Issue 11.0		• When a loop is opened at counter party	
MG-COT Card [SCA-6COTA]	Proprietary Protocol	No Condition	No Limit	• When PSTN line is disconnected • When not receiving RTP from counter party for a certain period	
	SIP	No Condition	No Limit	• When PSTN line is disconnected • When not receiving RTP from counter party for a certain period	
MG-COT Card [SCA-6COTB]	Proprietary Protocol	No Condition	No Limit	• When PSTN line is disconnected • When not receiving RTP from counter party for a certain period	
	SIP	No Condition	No Limit	• When PSTN line is disconnected • When not receiving RTP from counter party for a certain period	
MG-COT Card [SCA-6COTC]	Proprietary Protocol	No Condition	No Limit	• When PSTN line is disconnected • When not receiving RTP from counter party for a certain period	
	SIP	No Condition	No Limit	• When PSTN line is disconnected • When not receiving RTP from counter party for a certain period	

IP Equipment/Terminal Note 1, Note 17		Required Firmware Note 2	Time Duration Call can be retained Note 3	Event which causes the discontinuation of Call/Call Retention function	Remarks
MCMG Card [SCA-4LC2COTA]	MC	SP-3927 MCMG PROG-B Issue 1 or later Note 11	No Limit	• When a loop is opened at counter party • When not receiving RTP from counter party for a certain period	
	MG (COT)	No Condition	No Limit	• When PSTN line is disconnected • When not receiving RTP from counter party for a certain period	Note 10
MCMG Box [MG-4LC2COTA]	MC	SP-3927 MCMG PROG-B Issue 1 or later Note 11	No Limit	• When a loop is opened at counter party • When not receiving RTP from counter party for a certain period	
	MG (COT)	No Condition	No Limit	• When PSTN line is disconnected • When not receiving RTP from counter party for a certain period	Note 10
MG(BRI) Card [SCA-2BRIA]		SP-3826 BRI MG SIP BSC PROG-A Issue 4 or later Note 11	No Limit	• When RTP communication stops • When the Disconnection message is received from the network • When Layer 2 Link is down	Note 10
MG(BRI) Card [SCA-2BRIA-B]		No Condition Note 11	No Limit	• When RTP communication stops • When the Disconnection message is received from the network • When Layer 2 Link is down	Note 10
MG(BRI) Box [MG-2BRIA]		SP-3826 BRI MG SIP BSC PROG-A Issue 4 or later Note 11	No Limit	• When RTP communication stops • When the Disconnection message is received from the network • When Layer 2 Link is down	Note 10
MG(PRI) Card [SCA-24PRIA]	Proprietary Protocol Note 13	SP-3884 MG PRI PROG-A Issue 8 or later Note 11	No Limit	• When RTP communication stops • When the Disconnection message is received from the network • When Layer 2 Link is down	Note 10
	SIP	SP-3884 MG PRI PROG-A Issue 8 or later Note 11	No Limit	• When RTP communication stops • When the Disconnection message is received from the network • When Layer 2 Link is down	Note 10

IP Equipment/Terminal Note 1, Note 17		Required Firmware Note 2	Time Duration Call can be retained Note 3	Event which causes the discontinuation of Call/Call Retention function	Remarks
MG(PRI) Box [MG-24PRIA]	Proprietary Protocol Note 13	SP-3884 MG PRI PROG-A Issue 8 or later Note 11	No Limit	• When RTP communication stops • When the Disconnection message is received from the network • When Layer 2 Link is down	Note 10
	SIP	SP-3884 MG PRI PROG-A Issue 8 or later Note 11	No Limit	• When RTP communication stops • When the Disconnection message is received from the network • When Layer 2 Link is down	Note 10
MG(PRI) Card [SCA-30PRIA]	Proprietary Protocol Note 13	SP-3884 MG PRI PROG-A Issue 8 or later Note 11	No Limit	• When RTP communication stops • When the Disconnection message is received from the network • When Layer 2 Link is down	Note 10
	SIP	SP-3884 MG PRI PROG-A Issue 8 or later Note 11	No Limit	• When RTP communication stops • When the Disconnection message is received from the network • When Layer 2 Link is down	Note 10
MG(PRI) Box [MG-30PRIA]	Proprietary Protocol Note 13	SP-3884 MG PRI PROG-A Issue 8 or later Note 11	No Limit	• When RTP communication stops • When the Disconnection message is received from the network • When Layer 2 Link is down	Note 10
	SIP	SP-3884 MG PRI PROG-A Issue 8 or later Note 11	No Limit	• When RTP communication stops • When the Disconnection message is received from the network • When Layer 2 Link is down	Note 10
Software-based MG-SIP		No condition	No Limit	• When RTP communication stops • When the Disconnection message is received from the network • When Ether Link is down	Note 20
MG-SIP128 [MG-128SIPMGL-A]		No Condition	No Limit	• When RTP communication stops • When the Disconnection message is received from the network • When Ether Link is down	
MG-SIP128 [MG-128SIPMGG-B/MG-128SIPMGG]		No Condition	No Limit	• When RTP communication stops • When the Disconnection message is received from the network • When Ether Link is down	

IP Equipment/Terminal Note 1, Note 17	Required Firmware Note 2	Time Duration Call can be retained Note 3	Event which causes the discontinuation of Call/Call Retention function	Remarks
MG-SIP128 [MG-128SIPMGJ-B/MG-128SIPMGJ]	No Condition	No Limit	• When RTP communication stops • When the Disconnection message is received from the network • When Ether Link is down	
MG-SIP96 [MG-96SIPMGB]	Earlier than SP-3987 MG-SIP PROG-B Issue 3	Up to 4 minutes	• When Health Check timeout occurs • When a communication failure occurs	Note 14
	Since SP-3987 MGSIP PROG-B Issue 3 Note 11	No Limit	• When RTP communication stops • When the Disconnection message is received from the network • When Ether Link is down	
MG-SIP16	No Condition	Up to 4 minutes	• When Health Check timeout occurs • When a communication failure occurs	Note 14
MG-SIP16 Card [SCA-16SIP-MG(US)]	Earlier than SP-3988 MG SIP(16) PROG-G Issue 3	Up to 4 minutes	• When Health Check timeout occurs • When a communication failure occurs	Note 14
	Since SP-3988 MG SIP(16) PROG-G Issue 3 Note 11	No Limit	• When RTP communication stops • When the Disconnection message is received from the network • When Ether Link is down	
MG-SIP16 Card [SCA-16SIP-MG(US)-B]	No Condition Note 11	No Limit	• When RTP communication stops • When the Disconnection message is received from the network • When Ether Link is down	
MG-SIP16 Card [SCA-16SIPM-GA]	Earlier than SP-3905 MG SIP (16) PROG-A Issue 5	Up to 4 minutes	• When Health Check timeout occurs • When a communication failure occurs	Note 14
	Since SP-3905 MG SIP (16) PROG-A Issue 5 Note 11	No Limit	• When RTP communication stops • When the Disconnection message is received from the network • When Ether Link is down	

IP Equipment/Terminal **Note 1**, **Note 17**	Required Firmware **Note 2**	Time Duration Call can be retained **Note 3**	Event which causes the discontinuation of Call/Call Retention function	Remarks
MG-SIP16 Box [MG-16SIPM-GA]	Earlier than SP-3905 MG SIP (16) PROG-A Issue 5	Up to 4 minutes	• When Health Check timeout occurs • When a communication failure occurs	**Note 14**
	Since SP-3905 MG SIP (16) PROG-A Issue 5 **Note 11**	No Limit	• When RTP communication stops • When the Disconnection message is received from the network • When Ether Link is down	
IPG Digital	No Condition	Up to 6 minutes 30 seconds	• When Health Check timeout occurs	
IPG Analog	No Condition	Up to 2 minutes 30 seconds	• When Health Check timeout occurs	
UG50-IPG (Digital) **Note 4**, **Note 16**	Since firmware version 2.00 or later	No Limit	Handset: • When going on-hook • Key operation on terminal • When receiving system reset signal Headset/Speaker: • Key operation on terminal • When receiving system reset signal **Note 8**	
	Before firmware version 2.00 **Note 15**	Up to 5 minutes 30 seconds	• When Health Check timeout occurs	
UG50-IPG (Analog)	No Condition	No Limit	• When a loop is opened in the self-office • When RTP communication stops	
UG50 (DLC) **Note 4**, **Note 16**	Since firmware version 2.00 or later	No Limit	Handset: • When going on-hook • Key operation on terminal • When receiving system reset signal Headset/Speaker: • Key operation on terminal • When receiving system reset signal **Note 8**	
	Before firmware version 2.00 **Note 15**	Up to 5 minutes 30 seconds	• When Health Check timeout occurs	

IP Equipment/Terminal Note 1, Note 17		Required Firmware Note 2	Time Duration Call can be retained Note 3	Event which causes the discontinuation of Call/Call Retention function	Remarks
UG50 (LC)	Proprietary Protocol	No Condition	No Limit	• When a loop is opened in the self-office • When RTP communication stops	
	SIP	No Condition	No Limit	• When a loop is opened in the self-office • When RTP communication stops	
UG50 (COT-TYPE 1/ TYPE2)	Proprietary Protocol	No Condition	No Limit	• When PSTN line is disconnected • When RTP communication stops	
	SIP	No Condition	No Limit	• When PSTN line is disconnected • When RTP communication stops	
UG50 (PGT-TYPE 1/ TYPE2)	Proprietary Protocol	No Condition	No Limit	• When RTP communication stops	
	SIP	No Condition	No Limit	• When RTP communication stops	
UG50 (PRT 1.5M)	Proprietary Protocol	No Condition	No Limit	• When RTP communication stops • When the Disconnection message is received from the network • When Layer 2 Link is down	Note 10
	SIP	No Condition	No Limit	• When RTP communication stops • When the Disconnection message is received from the network • When Layer 2 Link is down	
UG50 (PRT 2M)	Proprietary Protocol	No Condition	No Limit	• When RTP communication stops • When the Disconnection message is received from the network • When Layer 2 Link is down	Note 10
	SIP	No Condition	No Limit	• When RTP communication stops • When the Disconnection message is received from the network • When Layer 2 Link is down	
UG50-2MC		No Condition	No Limit	• When a loop is opened in the self-office • When RTP communication stops	
UG50-8LC		No Condition	No Limit	• When a loop is opened in the self-office • When RTP communication stops	
UG50-24PRIA	Proprietary Protocol	No Condition	No Limit	• When RTP communication stops • When the Disconnection message is received from the network • When Layer 2 Link is down	
	SIP	No Condition	No Limit	• When RTP communication stops • When the Disconnection message is received from the network • When Layer 2 Link is down	

IP Equipment/Terminal Note 1, Note 17		Required Firmware Note 2	Time Duration Call can be retained Note 3	Event which causes the discontinuation of Call/Call Retention function	Remarks
UG50-30PRIA	Proprietary Protocol	No Condition	No Limit	• When RTP communication stops • When the Disconnection message is received from the network • When Layer 2 Link is down	
	SIP	No Condition	No Limit	• When RTP communication stops • When the Disconnection message is received from the network • When Layer 2 Link is down	
UG50-4LC2CO-TA (COT)	MC	No Condition	No Limit	• When a loop is opened in the self-office • When RTP communication stops	
	MG			• When PSTN line is disconnected • When RTP communication stops	
UG50-4LC2CO-TA (PGT)	MC	No Condition	No Limit	• When a loop is opened in the self-office • When RTP communication stops	
	MG			• When RTP communication stops	

Note 1: No office data setting is required to use Call Retention function.

Note 2: This column provides no information when equipment does not have firmware conditions.

Note 3: For IP equipment/terminals which do not support the Call Retention function, the time duration until Health Check timeout occurs is listed in the table.
For IP equipment/terminals which do not support the Call Retention function, if a fault occurs, a call will be retained for the time duration listed in the table unless any event which becomes a cause of call disconnection occurs.
For IP equipment/terminals which support the Call Retention function, if a fault occurs, a call will be retained until any event which becomes a cause of call disconnection occurs.

Note 4: If the counter party is disconnected while the call is retained, RTP Warning Tone may be provided. For details on RTP Warning Tone, see RTP Information Output [R-58] in the Data Programming Manual - Business. Also, if a fault occurs while a station is calling a trunk, Call Retention function will be activated. For details on Call Retention function, see “MG Based Call Retention” on Chapter 2 in the Data Programming Manual - Business.

Note 5: When the Call Retention function is inactivated or when any key on the terminal such as Line/Feature key is pressed during a conversation using a headset/speaker, a call will be disconnected in 60 to 90 seconds (Call can be retained until the key operation.).

Note 6: When the Call Retention function is inactivated, if the terminal starts to communicate with the Telephony Server, a call will be disconnected after the SIP timeout.

Note 7: If the firmware version below 2.00 is equipped to the terminal, a call will be disconnected within two minutes regardless of the key operation.

Note 8: The call can be retained if the Telephony Server does not send the reset signal to each terminal. However, in the following cases, call cannot be retained because the Telephony Server sends the reset signal.
- If only one-way link (from terminal to the Telephony Server).
- If Health Check error occurs between the Telephony Server and terminal, and Reset signal is sent to the terminal.

Note 9: For DtermSP30 with Software Version 2, a call can be retained up to two minutes.

Note 10: Configuration command setting is required on each equipment side. For more details, see “MG Based Call Retention” on Chapter 2 of Data Programming Manual - Business.

Note 11: The Call can be retained by MG Based Call Retention. For more details, see “MG Based Call Retention” on Chapter 2 of Data Programming Manual - Business.

Note 12: For IP equipment/terminals which cannot use Call Retention function, a call can be retained until Health Check timeout occurs.

Note 13: Call Protected Re-Registration [C-203] is available since SP-3884 MG PRI PROG-A Issue 10 or later.

Note 14: A release signal may not be sent to the network when a terminal on the Telephony Server side is released after the occurrence of a temporary communication failure with the Telephony Server during a call.

Note 15: When terminal key operation is executed, the call will be disconnected after the Call Retention (up to two minutes.)

Note 16: When terminal key such as Line/Feature key operation is executed while the Call Retention is activated, a call will be disconnected after two minutes (Calls are retained until a key operation is executed.)

Note 17: The following table shows status for IP equipment/terminals when the Call Retention function is in active.

Available	A call can be retained. It can be retained even after the status of call changes such as changing to a call on hold or a forwarded call.
Restricted	A call can be retained. It cannot be retained after the status of call changes such as changing to a call on hold or a forwarded call.
Not Available	A call cannot be retained.

IP Equipment/Terminal		Telephony Server/IP Equipment/Terminal Status				
		No Control Signals between Telephony Server and IP Equipment/Terminal		Telephony Server Mode Change by LAN Cable Link Down at ACT-side CPU	Telephony Server Mode Change Manually by CMOD Command	CPU Restart associated with New ACT-side TP Memory Clear (Ex: ACT-side CPU Reset)
		Viewpoint				
		IP Equipment/ Terminal	Telephony Server			
DT800 Series/DT700 Series		Restricted	Available	Available **Note 18**	Available	Restricted
DtermIP (Proprietary Protocol)		Restricted	Available	Available **Note 18**	Available	Restricted
DtermIP (SIP)		Restricted	Available	Available **Note 18**	Available	Restricted
WLAN Handset (MH250)		Restricted	Restricted	Restricted **Note 19**	Restricted	Restricted
SP Controlled Standard SIP terminal (Keep-alive through OPTIONS method)		Restricted	Restricted	Restricted **Note 19**	Restricted	Restricted
SP Controlled Standard SIP terminal (Keep-alive through Session Timer method)		Not Available	Restricted	Not Available	Not Available	Not Available
SIP Handler Controlled SIP terminal (Keep-alive through OPTIONS method)		Restricted	Available	Available **Note 18**	Available	Restricted
SIP Handler Controlled SIP terminal (Keep-alive through Session Timer method)		Not Available	Available	Available **Note 18**	Available	Not Available
DtermSP30	Proprietary Protocol	Restricted	Available	Available **Note 18**	Available	Restricted
	SIP	Restricted	Available	Available **Note 18**	Available	Restricted
Soft Client SP350		Restricted	Available	Available **Note 18**	Available	Restricted
Software-based VS32	Proprietary Protocol	Not Available	Not Available	Available **Note 19**	Available	Not Available

IP Equipment/Terminal		Telephony Server/IP Equipment/Terminal Status				
		No Control Signals between Telephony Server and IP Equipment/Terminal		Telephony Server Mode Change by LAN Cable Link Down at ACT-side CPU	Telephony Server Mode Change Manually by CMOD Command	CPU Restart associated with New ACT-side TP Memory Clear (Ex: ACT-side CPU Reset)
		Viewpoint				
		IP Equipment/ Terminal	Telephony Server			
VS-32(Dual) Card [SCA-VS32VA]	Proprietary Protocol	Not Available	Not Available	Available **Note 19**	Available	Not Available
	SIP	Not Available	Not Available	Available **Note 18**	Available	Not Available
VS-32(Dual) Card [SCA-VS32VA-B]	Proprietary Protocol	Not Available	Not Available	Available **Note 19**	Available	Not Available
	SIP	Not Available	Not Available	Available **Note 18**	Available	Not Available
VS-32(Dual) Box [MG-VS32VA]	Proprietary Protocol	Not Available	Not Available	Available **Note 19**	Available	Not Available
	SIP	Not Available	Not Available	Available **Note 18**	Available	Not Available
Analog 2MC		Not Available	Not Available	Available **Note 19**	Available	Not Available
8LC Card [SCA-8LCC/SCA-8LCC-EMEA]		Restricted	Not Available	Available **Note 18**	Available	Restricted
8LC Card [SCA-8LCA/SCA-8LCA-EMEA]		Restricted	Not Available	Available **Note 18**	Available	Restricted
MG-COT Card [SCA-6COTA]	Proprietary Protocol	Restricted	Not Available	Available **Note 19**	Available	Restricted
	SIP	Restricted	Not Available	Available **Note 18**	Available	Restricted
MG-COT Card [SCA-6COTB]	Proprietary Protocol	Restricted	Not Available	Available **Note 19**	Available	Restricted
	SIP	Restricted	Not Available	Available **Note 18**	Available	Restricted
MG-COT Card [SCA-6COTC]	Proprietary Protocol	Restricted	Not Available	Available **Note 19**	Available	Restricted
	SIP	Restricted	Not Available	Available **Note 18**	Available	Restricted
MCMG Card [SCA-4LC2COTA]	MC	Restricted	Not Available	Available **Note 19**	Available	Restricted
	MG (COT)	Restricted	Not Available	Available **Note 18**	Available	Restricted

IP Equipment/Terminal		Telephony Server/IP Equipment/Terminal Status				
		No Control Signals between Telephony Server and IP Equipment/Terminal		Telephony Server Mode Change by LAN Cable Link Down at ACT-side CPU	Telephony Server Mode Change Manually by CMOD Command	CPU Restart associated with New ACT-side TP Memory Clear (Ex: ACT-side CPU Reset)
		Viewpoint				
		IP Equipment/ Terminal	Telephony Server			
MCMG Box [MG-4LC2COTA]	MC	Restricted	Not Available	Available **Note 19**	Available	Restricted
	MG (COT)	Restricted	Not Available	Available **Note 18**	Available	Restricted
MG(BRI) Card [SCA-2BRIA]		Restricted	Not Available	Available **Note 18**	Available	Restricted
MG(BRI) Card [SCA-2BRIA-B]		Restricted	Not Available	Available **Note 18**	Available	Restricted
MG(BRI) Box [MG-2BRIA]		Restricted	Not Available	Available **Note 18**	Available	Restricted
MG(PRI) Card [SCA-24PRIA]	Proprietary Protocol	Restricted	Not Available	Available **Note 19**	Available	Restricted
	SIP	Restricted	Not Available	Available **Note 18**	Available	Restricted
MG(PRI) Box [MG-24PRIA]	Proprietary Protocol	Restricted	Not Available	Available **Note 19**	Available	Restricted
	SIP	Restricted	Not Available	Available **Note 18**	Available	Restricted
MG(PRI) Card [SCA-30PRIA]	Proprietary Protocol	Restricted	Not Available	Available **Note 19**	Available	Restricted
	SIP	Restricted	Not Available	Available **Note 18**	Available	Restricted
MG(PRI) Box [MG-30PRIA]	Proprietary Protocol	Restricted	Not Available	Available **Note 19**	Available	Restricted
	SIP	Restricted	Not Available	Available **Note 18**	Available	Restricted
Software-based MG-SIP		Not Available	Not Available	Available **Note 19**	Available	Not Available
MG-SIP128 [MG-128SIPMGL-A]		Not Available	Not Available	Available **Note 19**	Available	Not Available
MG-SIP128 [MG-128SIPMGG-B/ MG-128SIPMGG]		Not Available	Not Available	Available **Note 19**	Available	Not Available
MG-SIP128 [MG-128SIPMGJ-B/ MG-128SIPMGJ]		Not Available	Not Available	Available **Note 19**	Available	Not Available
MG-SIP96 [MG-96SIPMGB]		Not Available	Not Available	Available **Note 19**	Available	Not Available

IP Equipment/Terminal		Telephony Server/IP Equipment/Terminal Status				
		No Control Signals between Telephony Server and IP Equipment/Terminal		Telephony Server Mode Change by LAN Cable Link Down at ACT-side CPU	Telephony Server Mode Change Manually by CMOD Command	CPU Restart associated with New ACT-side TP Memory Clear (Ex: ACT-side CPU Reset)
		Viewpoint				
		IP Equipment/ Terminal	Telephony Server			
MG-SIP16		Not Available	Not Available	Available **Note 19**	Available	Not Available
MG-SIP16 Card [SCA-16SIP-MG(US)]		Not Available	Not Available	Available **Note 19**	Available	Not Available
MG-SIP16 Card [SCA-16SIP-MG(US)-B]		Not Available	Not Available	Available **Note 19**	Available	Not Available
MG-SIP16 Card [SCA-16SIPM-GA]		Not Available	Not Available	Available **Note 19**	Available	Not Available
MG-SIP16 Box [MG-16SIPMGA]		Not Available	Not Available	Available **Note 19**	Available	Not Available
IPG Digital		Restricted	Not Available	Available **Note 18**	Available	Restricted
IPG Analog		Restricted	Not Available	Available **Note 19**	Available	Restricted
UG50 (DLC)		Restricted	Not Available	Available **Note 18**	Available	Restricted
UG50 (LC)	Proprietary Protocol	Restricted	Not Available	Available **Note 19**	Available	Restricted
	SIP	Restricted	Not Available	Available **Note 18**	Available	Restricted
UG50 (PRT 1.5M)	Proprietary Protocol	Restricted	Not Available	Available **Note 19**	Available	Restricted
	SIP	Restricted	Not Available	Available **Note 18**	Available	Restricted
UG50 (PRT 2M)	Proprietary Protocol	Restricted	Not Available	Available **Note 19**	Available	Restricted
	SIP	Restricted	Not Available	Available **Note 18**	Available	Restricted
UG50 (COT-TYPE 1/ TYPE2)	Proprietary Protocol	Restricted	Not Available	Available **Note 19**	Available	Restricted
	SIP	Restricted	Not Available	Available **Note 18**	Available	Restricted
UG50 (PGT-TYPE 1/ TYPE2)	Proprietary Protocol	Restricted	Not Available	Available **Note 19**	Available	Restricted
	SIP	Restricted	Not Available	Available **Note 18**	Available	Restricted

IP Equipment/Terminal		Telephony Server/IP Equipment/Terminal Status				
		No Control Signals between Telephony Server and IP Equipment/Terminal		Telephony Server Mode Change by LAN Cable Link Down at ACT-side CPU	Telephony Server Mode Change Manually by CMOD Command	CPU Restart associated with New ACT-side TP Memory Clear (Ex: ACT-side CPU Reset)
		Viewpoint				
		IP Equipment/ Terminal	Telephony Server			
UG50-IPG (Digital)		Restricted	Not Available	Available **Note 18**	Available	Restricted
UG50-IPG (Analog)		Restricted	Not Available	Available **Note 19**	Available	Restricted
UG50-2MC		Restricted	Not Available	Available **Note 19**	Available	Restricted
UG50-8LC		Restricted	Not Available	Available **Note 18**	Available	Restricted
UG50-24PRIA	Proprietary Protocol	Restricted	Not Available	Available **Note 19**	Available	Restricted
	SIP	Restricted	Not Available	Available **Note 18**	Available	Restricted
UG50-30PRIA	Proprietary Protocol	Restricted	Not Available	Available **Note 19**	Available	Restricted
	SIP	Restricted	Not Available	Available **Note 18**	Available	Restricted
UG50-4LC2COTA (COT)	MC	Restricted	Not Available	Available **Note 19**	Available	Restricted
	MG	Restricted	Not Available	Available **Note 19**	Available	Restricted
UG50-4LC2COTA (PGT)	MC	Restricted	Not Available	Available **Note 19**	Available	Restricted
	MG	Restricted	Not Available	Available **Note 19**	Available	Restricted

Note 18: If communication fails between the SP and the TP ACT-sides, then when the IP equipment/terminal registers to the SP, the call will not be retained. The Telephony Server orders the counter party to release the call by Related-call Release.

Note 19: If communication fails between the SP and the TP ACT-sides, then when the IP equipment/terminal registers to the SP, the call will be retained. However, the call status cannot be changed.

Note 20: Since Software-based MG-SIP runs on a virtual machine, it cannot detect an Ethernet link down. Therefore, it does not provide alternative routing of MULTIPLE NUMBER SERVICE [M-113] when the link is down on the Ethernet interface to SIP network.

6. Bandwidth Required for Each Equipment

The following shows approximate value of bandwidth required for carrying control signal.

Relationship between Equipment and Bandwidth Required for Control Signal

Equipment		Bandwidth Required [Kbps] Note 1,Note 2	Remarks
Analog MC	Analog 2MC	35	per unit
	8LC Card [SCA-8LCA/SCA-8LCA-EMEA/SCA-8LCC/SCA-8LCC-EMEA]	320	per unit (40 Kbps/ch)
MG(PRI)	MG-PRI(PRI) (1.5M) Card [SCA-24PRIA]	65	per unit
	MG-PRI(PRI) (1.5M) Box [MG-24PRIA]	65	per unit
	MG-PRI(PRI) (1.5M) Card [SCA-24PRIA] (SIP)	95	per unit
	MG-PRI(PRI) (1.5M) Box [MG-24PRIA] (SIP)	95	per unit
	MG-PRI(PRI) (2M) Card [SCA-30PRIA]	65	per unit
	MG-PRI(PRI) (2M) Box [MG-30PRIA]	65	per unit
	MG-PRI(PRI) (2M) Card [SCA-30PRIA] (SIP)	95	per unit
	MG-PRI(PRI) (2M) Box [MG-30PRIA] (SIP)	95	per unit
MG(BRI)	MG(BRI) Card [SCA-2BRIA]	30	per unit
	MG(BRI) Card [SCA-2BRIA-B]	30	per unit
	MG(BRI) Box [MG-2BRIA]	30	per unit
MC&MG-COT	MCMG Card [SCA-4LC2COTA]	60	per unit
	MCMG Box [MG-4LC2COTA]	60	per unit
MG-COT	MG-COT Card [SCA-6COTA/SCA-6COTB/SCA-6COTC]	30	per unit
	MG-COT Card [SCA-6COTB/SCA-6COTC] (SIP)	180	per unit

Equipment		Bandwidth Required [Kbps] Note 1,Note 2	Remarks
MG(SIP)	MG-SIP16	See Remarks.	{10% of bandwidth for call} per unit Note 3
	MG-SIP16 Card [SCA-16SIPMGA]	See Remarks.	{10% of bandwidth for call} per unit Note 3
	MG-SIP16 Box [MG-16SIPMGA]	See Remarks.	{10% of bandwidth for call} per unit Note 3
	MG-SIP16 Card [SCA-16SIPMG(US)]	See Remarks.	{10% of bandwidth for call} per unit Note 3
	MG-SIP96	See Remarks.	{10% of bandwidth for call} per unit Note 3
	MG-SIP128 [MG-128SIPMGL-A]	See Remarks.	{10% of bandwidth for call} per unit Note 3
	MG-SIP128 [MG-128SIPMGG-B/MG-128SIP-MGG]	See Remarks.	{10% of bandwidth for call} per unit Note 3
	MG-SIP128 [MG-128SIPMGJ-B/MG-128SIP-MGJ]	See Remarks.	{10% of bandwidth for call} per unit Note 3
MG(SIP)	Software-based MG-SIP	See Remarks.	{10% of bandwidth for call} per unit Note 3
MG-T1 (SIP)	MG-T1(SIP) Card [SCA-24DTIA]	95	per unit
	MG-T1(SIP) Card [SCA-24DTIA-B]	95	per unit
Softphone	Proprietary Protocol	5	per unit (When using voice traffic only)
	SIP	8	per unit (When using voice traffic only)
WLAN Handset (MH Series)		16	per unit
Standard SIP Voice Terminal		8	per unit
Standard SIP Video Terminal		32	per unit
DtermIP	Proprietary Protocol	5	per unit
	SIP	8	per unit
DT800 Series/DT700 Series		16	per unit
SR-MGC		40	per unit (The bandwidth is required for making a copy of office data.)

Equipment			Bandwidth Required [Kbps] Note 1,Note 2	Remarks
VS32	Software-based VS32	Proprietary Protocol	480	per unit (15 Kbps/ch)
	VS-32(Dual) Card [SCA-VS32-VA]	Proprietary Protocol	480	per unit (15 Kbps/ch)
		SIP	1200	per unit (37.5 Kbps/ch)
	VS-32(Dual) Card [SCA-VS32-VA-B]	Proprietary Protocol	480	per unit (15 Kbps/ch)
		SIP	1200	per unit (37.5 Kbps/ch)
	VS-32(Dual) Box [MG-VS32VA]	Proprietary Protocol	480	per unit (15 Kbps/ch)
		SIP	1200	per unit (37.5 Kbps/ch)
IPG Digital			5	per unit
IPG Analog			20	per unit
UG50-IPG (Digital)			5	per channel
UG50-IPG (Analog)			20	per channel
UG50 Multi-slot mode • UG50 (DLC) UG50 IPG mode • UG50-IPG (Digital)			5	per channel
Proprietary Protocol Mode			18	per channel
UG50 Multi-slot mode • UG50 (LC) UG50 IPG mode • UG50-IPG (Analog) UG50 Retrofit mode • UG50-2MC • UG50-4LC2COTA (COT) (MC part) • UG50-4LC2COTA (PGT) (MC part)				
SIP Mode			40	per channel
UG50 Multi-slot mode • UG50 (LC) [SIP] UG50 Retrofit mode • UG50-8LC				

Equipment	Bandwidth Required [Kbps] Note 1,Note 2	Remarks
Proprietary Protocol Mode UG50 Multi-slot mode • UG50 (COT-TYPE1) • UG50 (COT-TYPE2) [Proprietary Protocol] • UG50 (PGT-TYPE1) • UG50 (PGT-TYPE2) [Proprietary Protocol] UG50 Retrofit mode • UG50-4LC2COTA (COT) (MG part) • UG50-4LC2COTA (PGT) (MG part) • UG50-6COT [Proprietary Protocol]	5	per channel
Proprietary Protocol Mode UG50 Multi-slot mode • UG50 (PRT 1.5M) [Proprietary Protocol] • UG50 (PRT 2M) [Proprietary Protocol] UG50 Retrofit mode • UG50-24PRIA [Proprietary Protocol] • UG50-30PRIA [Proprietary Protocol]	3	per channel
SIP Mode UG50 Multi-slot mode • UG50 (PRT 1.5M) [SIP] • UG50 (PRT 2M) [SIP] UG50 Retrofit mode • UG50-24PRIA [SIP] • UG50-30PRIA [SIP]	5	per channel

Note 1: All values listed are approximate.

Note 2: The bandwidth noted above is worst case. The layer 2 infrastructure between the end points will determine the final bandwidth of the algorithm integrated.

Note 3: Bandwidth for call: Bandwidth to be used per voice channel × the number of contracted channels.

7. Payload Setting for Each IP Device

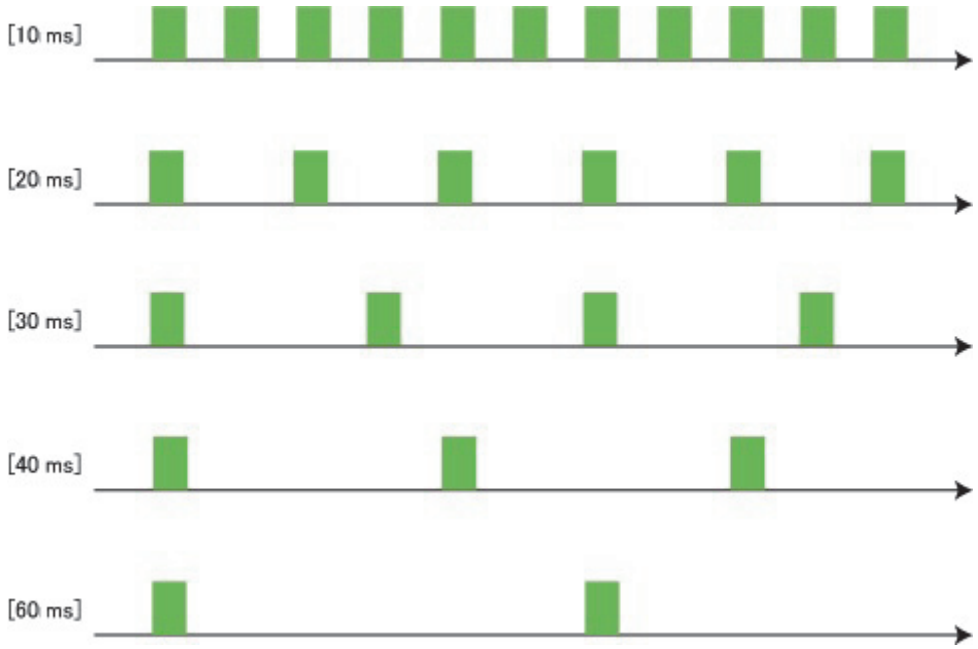
In this section, the codecs that can be used in each IP device are explained.

Note: In PCPro, codecs are called [Payload Type].

A codec compresses and decompresses video and audio data and converts it from analog to digital and vice versa. Preventing the loss of packets and sound quality and adjusting the transmission speed are achieved by limiting the type of packets sent and the transmission speed based on the bandwidth of the circuits through which data and audio are transmitted.

To avoid an excessive delay of the audio, the cycle for voice and packet conversion (**Note 1**) is limited from 20 ms to 60 ms. The packets to which data is converted include three headers (RTP, UDP and IP) (**Note 2**). The smaller the value of payload cycle is, the bigger the part of the packet occupied by the header becomes, and therefore the worse the data transmission efficiency becomes. On the other hand, the larger the value of the payload cycle is, the better the data transmission becomes, but also the longer the delay (the time needed to send and receive the packets) becomes.

Example: The bigger the payload size becomes (10 ms < 60 ms), the slower the transmission speed becomes.

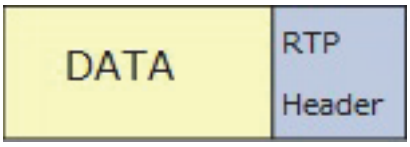


One block is sent per payload size.

Note 1: In an IP Station, the voice is converted to IP packets. First, the analog signal of the voice is converted to digital (Pulse Code Modulation). The digital data is converted into an RTP packet and before being transmitted through an IP network, the RTP packet is converted to a UDP packet and finally an IP packet.

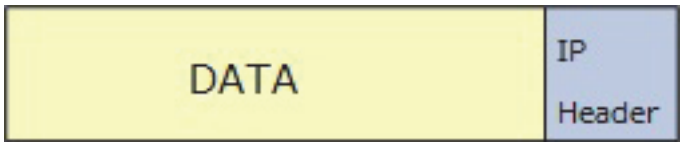
Note 2: Each packet structure is as follows:

- RTP Packet Header (protocol for real-time data transmission):



- UDP Packet Header (protocol for data transmission control):

- IP Packet Header (protocol for data transmission addressing):



The following shows available Payload Type/Payload Size.

Available: X, Not Available: -

Payload Type	Bit rate	Payload Size (Packets sending Cycle)					Remarks
		10 ms	20 ms	30 ms	40 ms	60 ms	
G.711	64 Kbps	x	x	x	x	-	
G.723.1	6.3 Kbps	-	-	x	-	x	MP-MLQ
	5.3 Kbps	-	-	x	-	x	ACELP
G.729a	8 Kbps	x	x	x	x	-	CS-ACELP
G.722		-	x	-	x	-	
AMR-NB		-	x	-	x	-	
AMR-WB		-	x	-	x	-	
G.711 μ-Law Redundant	64 Kbps	-	x	-	x	-	
G.711 A-Law Redundant	64 Kbps	-	x	-	x	-	
G.729a Redundant	8 Kbps	-	x	-	x	-	
G.722 Redundant		-	x	-	x	-	
AMR-NB Redundant		-	x	-	x	-	
AMR-WB Redundant		-	x	-	x	-	
T.30	13.6 Kbps	-	-	-	-	-	No indication of sending cycle
T.38		-	-	-	-	-	No indication of sending cycle

The following shows available Payload Type/Payload Size for each equipment.

Payload Type and Payload Size for each Equipment

Equipment			Payload Type	Payload Size	Remarks
IPPAD Card	CH-IPDA		G.711, G.729a	20 ms, 30 ms, 40 ms	
			T.38 UDP (for FAX)	-	
			T.30 (for FAX)	-	
			G.726 (for FAX)	10 ms, 20 ms, 30 ms, 40 ms	
	PA-32IPDA		G.711, G.729a	20 ms, 30 ms, 40 ms	
			G.723.1 (5.3k→6.3k) G.723.1 (6.3k→5.3k)	30 ms **Note 3**	
			T.30 (for FAX)	-	
			G.726 (for FAX)	10 ms, 20 ms, 30 ms, 40 ms	
	PA-32IPDB		G.711	20 ms, 30 ms, 40 ms	
IP terminal	DtermIP, DtermIP INASET, IP Enabled Dterm		G.711, G.729a	10 ms, 20 ms, 30 ms, 40 ms	
			G.723.1 (5.3k→6.3k), G.723.1 (6.3k→5.3k)	30 ms, 60 ms	**Note 4**
SIP Multiple Line terminal	DT800 Series	DT830, DT830G, DT820	G.711, G.729a	10 ms, 20 ms, 30 ms, 40 ms	
			G.722 **Note 5**	20 ms, 40 ms	
	DT700 Series	DT750, DT730, DT730G, DT770G	G.711, G.729a	10 ms, 20 ms, 30 ms, 40 ms	
			G.722 **Note 5**	20 ms, 40 ms	
		DT710	G.711, G.729a	10 ms, 20 ms, 30 ms, 40 ms	
	DtermIP(SIP)		G.711, G.729a	10 ms, 20 ms, 30 ms, 40 ms	
SIP terminal **Note 6**	WLAN Handset (MH250)		G.711, G.729a	20 ms, 40 ms	
IP-DTG **Note 7**	Software Tone Generator		G.711 μ-law G.711 A-law G.729a **Note 8**	20 ms, 40 ms	

Equipment		Payload Type	Payload Size	Remarks
Analog MC	Analog 2MC	G.711, G.729a	10 ms, 20 ms, 30 ms, 40 ms	
		G.723.1 (5.3k→6.3k), G.723.1 (6.3k→5.3k)	30 ms, 60 ms	
		T.30 (for Fax)	-	
		G.726 (for Fax)	-	
	SCA-8LCC, SCA-8LCC-EMEA	G.711, G.729a	10 ms, 20 ms, 30 ms, 40 ms	
		G.723.1 (5.3k→6.3k), G.723.1 (6.3k→5.3k)	30 ms, 60 ms	
		T.30 (for Fax)	-	
		G.726 (for Fax)	10 ms, 20 ms, 30 ms, 40 ms	
		T.38 UDP (for Fax) **Note 9**	-	
	SCA-8LCA, SCA-8LCA-EMEA	G.711, G.729a	10 ms, 20 ms, 30 ms, 40 ms	
		G.723.1 (5.3k→6.3k), G.723.1 (6.3k→5.3k)	30 ms, 60 ms	
		T.30 (for Fax)	-	
		G.726 (for Fax)	-	
MG(PRI)	MG-24PRIA, MG-30PRIA, SCA-24PRIA, SCA-30PRIA	G.711, G.729a **Note 10**	10 ms, 20 ms, 30 ms, 40 ms	
		G.723.1 (5.3k→6.3k), G.723.1 (6.3k→5.3k) **Note 10**	30 ms, 60 ms	
		T.30 (for Fax)	-	
		G.726 (for Fax)	10 ms, 20 ms, 30 ms, 40 ms	
		T.38 UDP (for Fax)	-	
MG(BRI)	MG-2BRIA, SCA-2BRIA, SCA-2BRIA-B	G.711, G.729a	10 ms, 20 ms, 30 ms, 40 ms	
		G.723.1 (5.3k→6.3k), G.723.1 (6.3k→5.3k)	30 ms, 60 ms	
		T.30 (for Fax)	-	
		G.726 (for Fax)	10 ms, 20 ms, 30 ms, 40 ms	
MC&MG-COT	MG-4LC2COTA, SCA-4LC2COTA,	G.711, G.729a	10 ms, 20 ms, 30 ms, 40 ms	
		G.723.1 (5.3k→6.3k), G.723.1 (6.3k→5.3k)	30 ms, 60 ms	
		T.30 (for Fax)	-	
		G.726 (for Fax)	10 ms, 20 ms, 30 ms, 40 ms	
MG-COT	SCA-6COTA, SCA-6COTB, SCA-6COTC	G.711, G.729a	10 ms, 20 ms, 30 ms, 40 ms	
		G.723.1 (5.3k→6.3k), G.723.1 (6.3k→5.3k)	30 ms, 60 ms	
		T.30 (for Fax)	-	
		G.726 (for Fax)	10 ms, 20 ms, 30 ms, 40 ms	

Equipment			Payload Type	Payload Size	Remarks
MG-T1(SIP)	SCA-24DTIA, SCA-24DTIA-B		G.711, G.729a	10 ms, 20 ms, 30 ms, 40 ms	
			G.723.1 (5.3k→6.3k), G.723.1 (6.3k→5.3k)	30 ms, 60 ms	
			T.30 (for Fax)	-	
			G.726 (for Fax)	10 ms, 20 ms, 30 ms, 40 ms	
MG(SIP)	MG-SIP16, MG-SIP16 [MG-16SIPMGA/SCA-16SIPMGA], MG-SIP16 [SCA-16SIPMG(US)/ SCA-16SIPMG(US)-B]		G.711, G.729a	20 ms, 30 ms, 40 ms	Note 11
	MG-SIP96		G.711, G.729a	20 ms, 30 ms, 40 ms	
	MG-SIP128 [MG-128SIPMGL-A]		G.711, G.729a	20 ms, 30 ms, 40 ms	
			T.38	-	Note 12
	MG-SIP128 [MG-128SIPMGG-B/ MG-128SIPMGG]		G.711, G.729a	20 ms, 30 ms, 40 ms	Note 11
	MG-SIP128 [MG-128SIPMGJ-B/ MG-128SIPMGJ]		G.711	20 ms	
	Software-based MG-SIP	SP-4078 MGSIPVM PROG-B	G.711, G.729a	20 ms, 30 ms, 40 ms	Note 11
		SP-4080 MGSIPVM PROG-D	G.711	20 ms	
		SP-4085 MGSIPVM PROG-E	G.711, G.729a	20 ms, 30 ms, 40 ms	Note 11
			T.38	-	Note 12
Softphone	DtermSP30		G.711, G.729a, G.722 Note 5, AMR-NB, AMR-WB, G.711 μ-law (FEC), G.711 A-law (FEC), G.729a (FEC), G.722 (FEC), AMR-NB (FEC), AMR-WB (FEC)	20 ms, 30 ms Note 13, 40 ms	Note 14
	Soft Client SP350		G.711, G.729a, G.722 Note 5, AMR-NB, AMR-WB, G.711 μ-law (FEC), G.711 A-law (FEC), G.729a (FEC), G.722 (FEC), AMR-NB (FEC), AMR-WB (FEC)	20 ms, 40 ms	Note 15 Note 16

Equipment		Payload Type	Payload Size	Remarks
VS32	Software Based VS32 SCA-VS32VA, SCA-VS32VA-B, MG-VS32VA	G.711, G.729a	10 ms, 20 ms, 30 ms, 40 ms	Note 17
		G.723.1 (5.3k→6.3k), G.723.1 (6.3k→5.3k)	30 ms, 60 ms	
IPG Digital IPG Analog		G.711, G.729a	10 ms, 20 ms, 30 ms, 40 ms	
		G.723.1 (5.3k→6.3k), G.723.1 (6.3k→5.3k)	30 ms, 60 ms	
UG50 (common in any mode)		G.711, G.729a	20 ms, 30 ms, 40 ms	
		G.723.1 (5.3k→6.3k), G.723.1 (6.3k→5.3k)	30 ms, 60 ms	
		G.726 (for Fax)	20 ms, 30 ms, 40 ms	
		T.38 UDP (for Fax)	-	Note 18

Note 3: “60 milliseconds” cannot be specified as Payload Size.

Note 4: For DtermIP 8 button-type (ITR-8D), G.723.1 cannot be used.

Note 5: Payload type G.722 can be used for DT800 Series(DT830/DT830G), DT700 Series (DT730/DT730G/DT750/DT770G), Soft Client SP350 and DtermSP30 (Software version 15 or later).

Note 6: The payload type/payload size depends on the connecting SIP terminals.

Note 7: For G.711, the Payload Type is decided depending on the value for ASYD, SYS1, Index 64, Bit 0=0 (G.711 μ-law)/1 (G.711 A-law).

Note 8: Available since FP95-114 V4.

Note 9: T.38 UDP is available when the counter IP equipment is set to T.38 UDP. T.38 UDP cannot be set by 8MC.

Note 10: The number of channels that can be used depends on the Payload size and VoIP Encryption settings. For an explanation, see VoIP ENCRYPTION [V-27] in Data Programming Manual - Business.

Note 11: When connecting to public SIP network, assign the following payload type and payload size. FAX connection is not available when any payload types except “G.711” are assigned for voice or FAX communication.

Payload Type	Payload Size
G.711	20 ms

Note 12: For an explanation, see IP Control-FAX [I-44] in Data Programming Manual - Business.

Note 13: Payload size 30 ms is available when PROTIMS over IP mode is selected. For SIP mode, Payload size 30 ms is not available.

Note 14: When DtermSP30 is used as an ACD terminal, assign the following payload type and payload size.

Payload Type	Payload Size
G.711	20 ms, 30 ms, 40 ms
G.729a	

Following payload type and payload size are effective only for the connection to DtermSP30 (Software version 15 or later).

Payload Type	Payload Size
AMR-NB	20 ms, 40 ms
AMR-WB	
G.711 μ-law (FEC)	
G.711 A-law (FEC)	
G.729a (FEC)	
G.722 (FEC)	
AMR-NB (FEC)	
AMR-WB (FEC)	

Note 15: Soft Client SP350 version R4 or earlier cannot be used as an ACD terminal.

Note 16: When Soft Client SP350 is used as an ACD terminal, assign the following payload type and payload size.

Payload Type	Payload Size
G.711	20 ms, 30 ms, 40 ms
G.729a	

Note 17: When VS32 that has no Voice Compression feature is used, assign “G.711” as payload type.

Note 18: Only the following types of the equipment can be used.

UG50 Mode	
Retrofit mode	UG50-8LC **Note 19**
	UG50-24PRIA [Proprietary Protocol]
	UG50-24PRIA [SIP]
Multi-slot mode	UG50 (LC) [SIP] **Note 19**
	UG50 (PRT 1.5M) [Proprietary Protocol]
	UG50 (PRT 1.5M) [SIP]

Note 19: UG50 functions if T.38 UDP is set on the connected FAX. The payload size cannot be set on the UG50 side.

8. IP Address

Be careful not to overlap any IP address when assigning IP address to each devices.

When the IP addresses are not unique, the operation may become unsteady and malfunctions such as an operation or a restart of IP device becoming disabled may be caused.

Note: If an IP address conflict occurs, reset the IP device after reassigning a different IP address for normal operation.

9. DHCP Server Setup

This section explains Dynamic Host Configuration Protocol (DHCP) Server Installation, Setup and the Optional Setting Procedure. By installing a DHCP server, IP addresses listed below can be automatically set for IP Terminals on the LAN.

- IP Address, Default Gateway, Subnet Mask of the IP terminals
- IP Address of Telephony Server assigned by ADTM
- DNS Server IP Address

Note: When DHCP clients on a different LAN also need to be served by the DHCP server, DHCP Relay Agent must be configured on each segment.

The following topics are covered in this section.

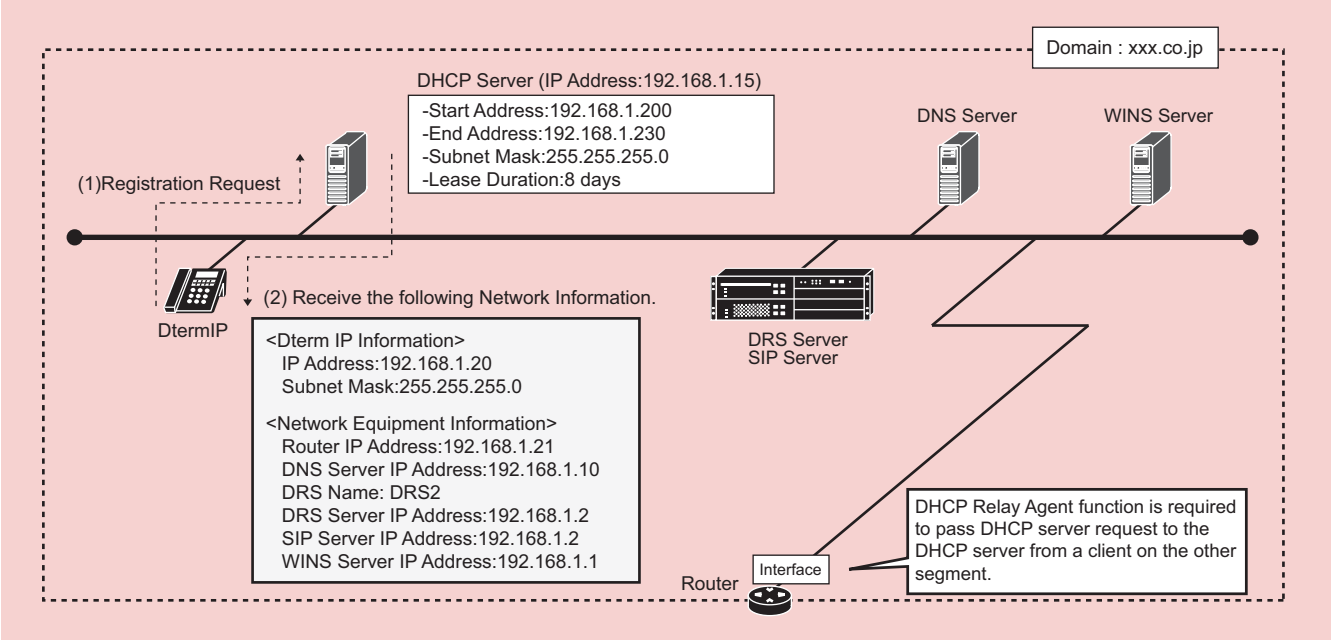
Items	Notes
9.1. DHCP Server Installation and Setup	Required if it has not been installed on the PC
9.2. DHCP Server Optional Setting	Optional: Required when you want DHCP server to send DRS IP Address to IP terminals.
9.3. DHCP Address Conflict Detection Setting	Required when installing the DHCP server
9.4. DHCP Address Static Setting	Optional: Required when IP address is assigned statically by the DHCP server

The procedures in this section is described using Microsoft Windows Server 2008 R2 as an example.

Note: Be sure to install the latest version of Service Pack.

The figure below is an example of the network configuration that is used in this section.

Network Configuration



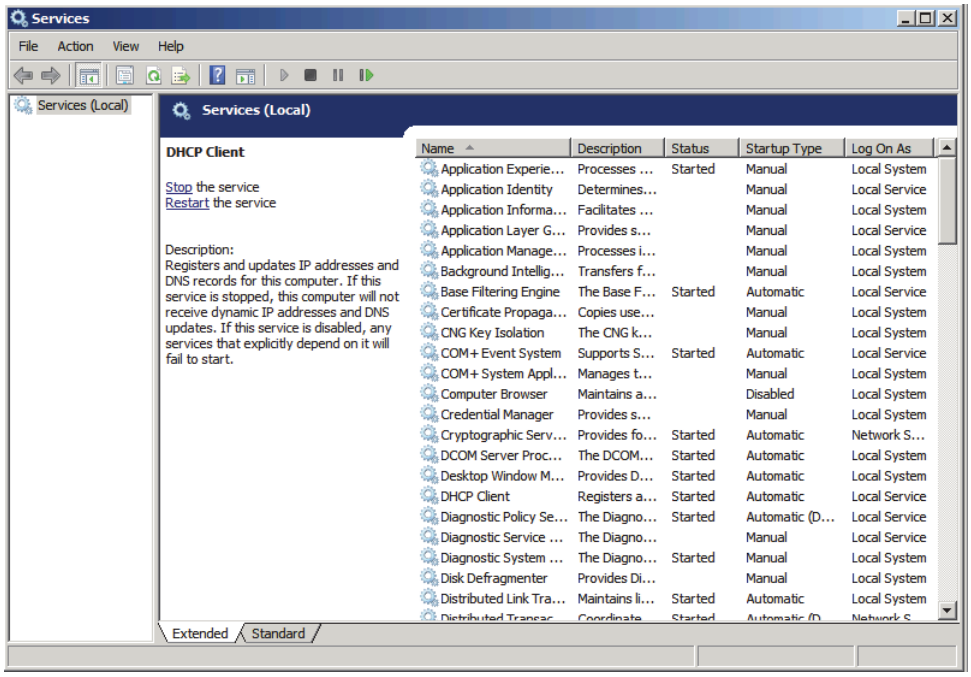
Note: "DRS (Device Registration Server)" used in this section refers to Telephony Server. Telephony Server acts as DRS where IP device/terminal is registered.

Note: "SIP server" used in this section refers to Telephony Server. Telephony Server acts as SIP server where IP device/terminal is registered.

9.1. DHCP Server Installation and Setup

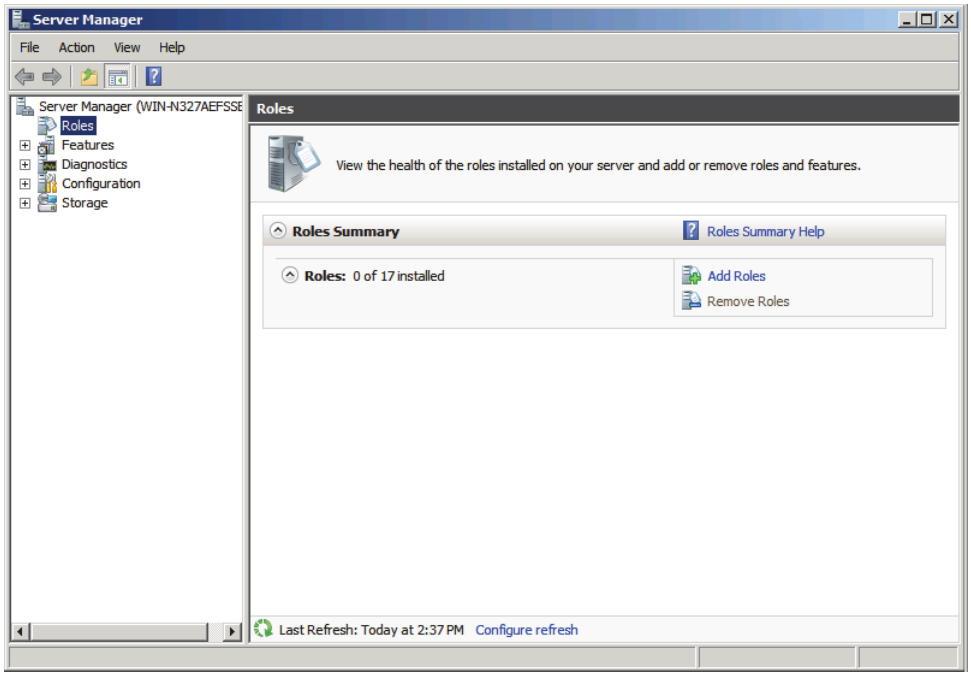
Step1: Start the Microsoft Windows Server 2008.

Step2: Check whether Microsoft® DHCP Server is installed on the PC.
Select **Start** -> **Administrative Tools** -> **Services**. The **Services** window appears.
See if "DHCP Server" is listed under Services. If so, go to "9.2. DHCP Server Optional Setting".

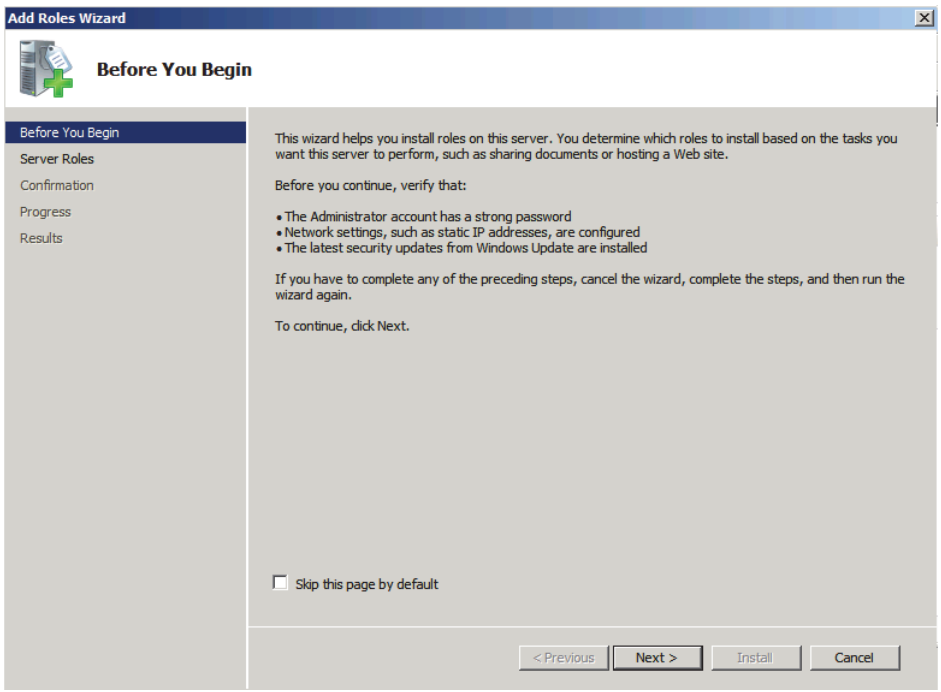


Step3: Select **Start** -> **Administrative Tools** -> **Server Manager**. The **Server Manager** window appears.

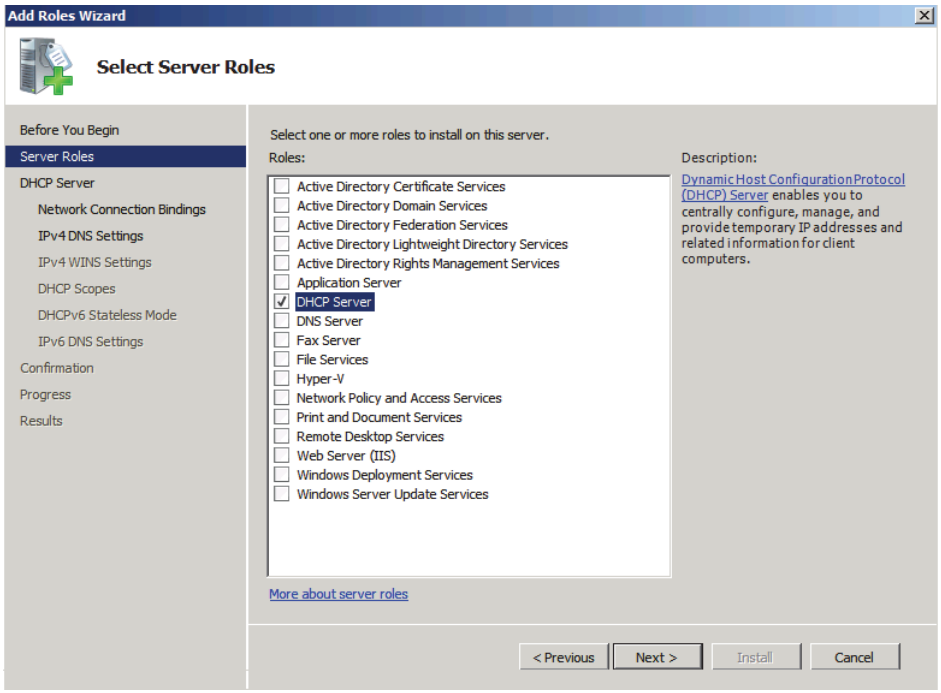
Select **Roles** in the left panel and then click **Add Roles**.



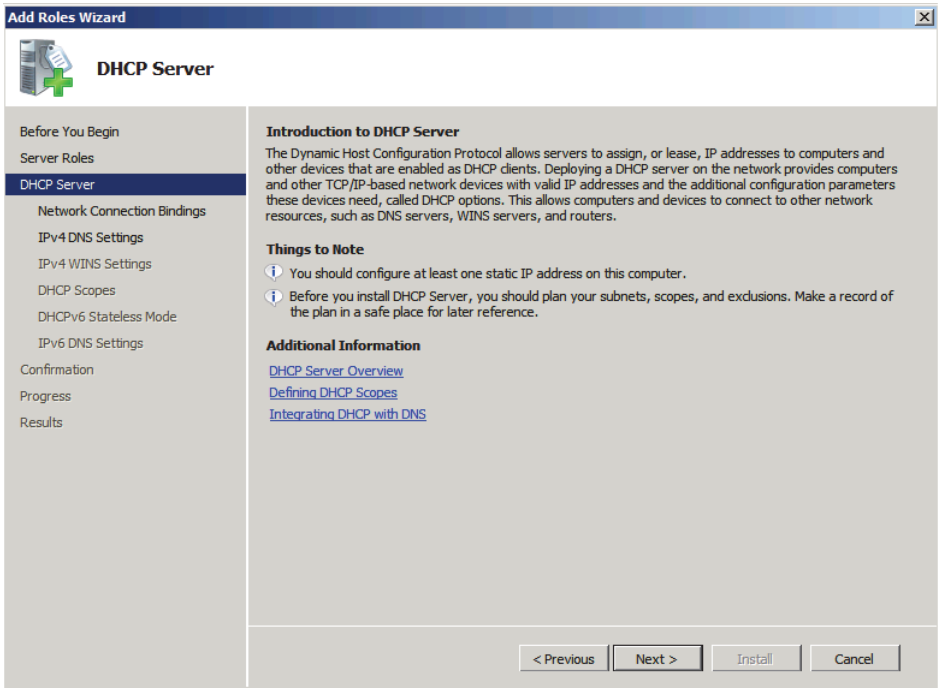
Step4: As **Add Roles Wizard** starts, the **Before You Begin** window appears. Click the **Next** button.



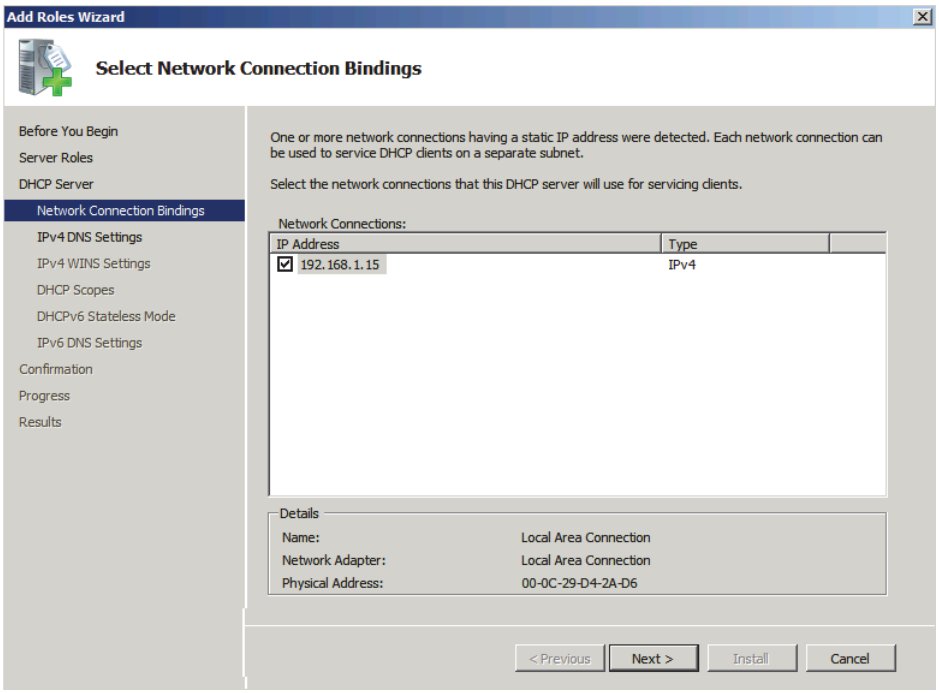
Step5: The **Server Roles** window appears. Place a check mark on **DHCP Server** and then click the **Next** button.



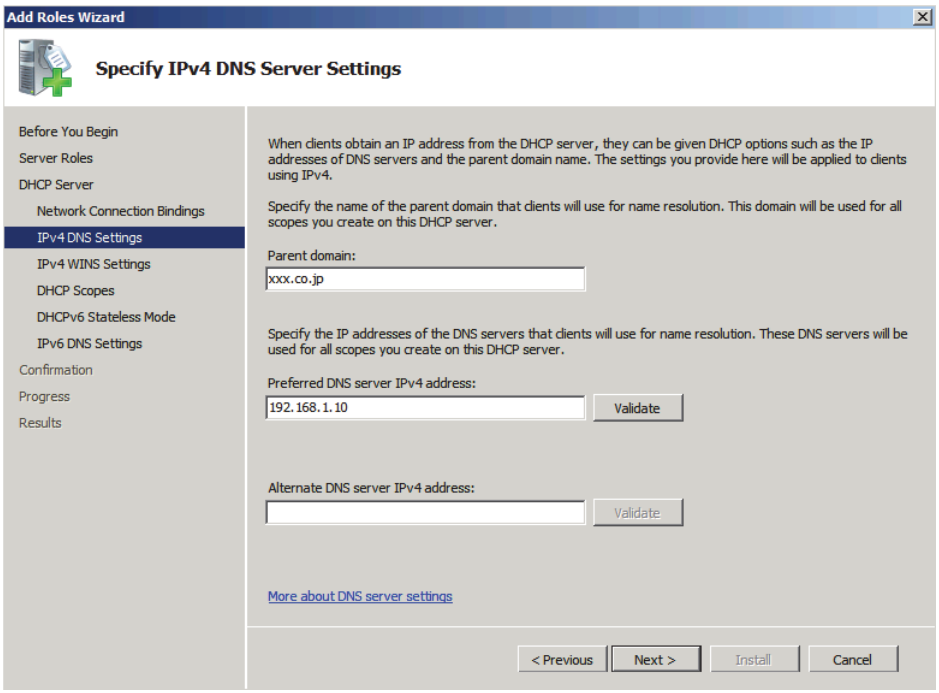
Step6: The **DHCP Server** window appears. Click the **Next** button.



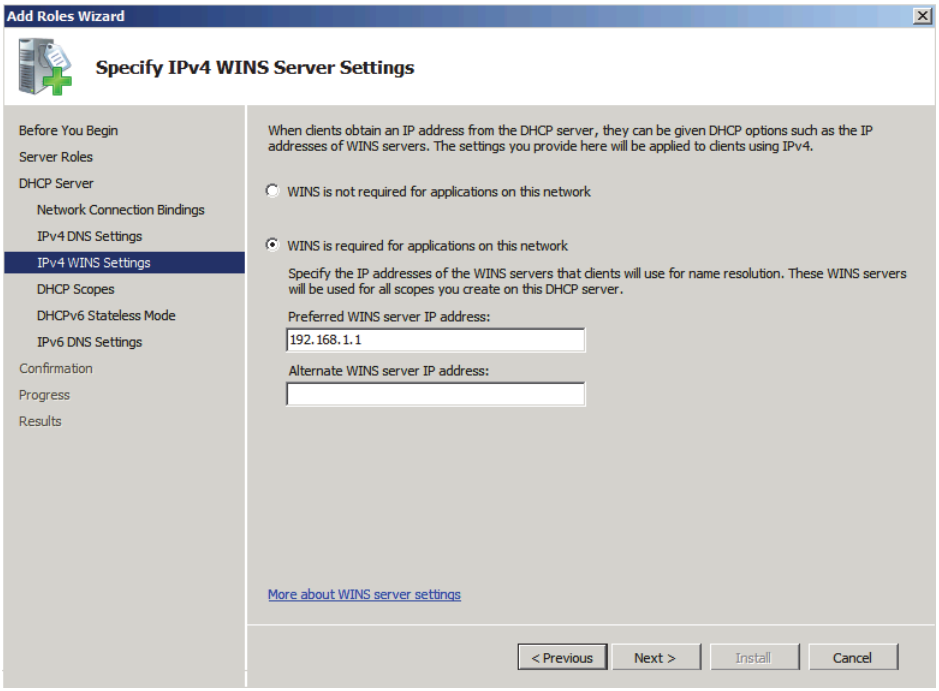
Step7: The **Network Connection Bindings** window appears. Place a check mark on the IP address of DHCP server and then click the **Next** button.



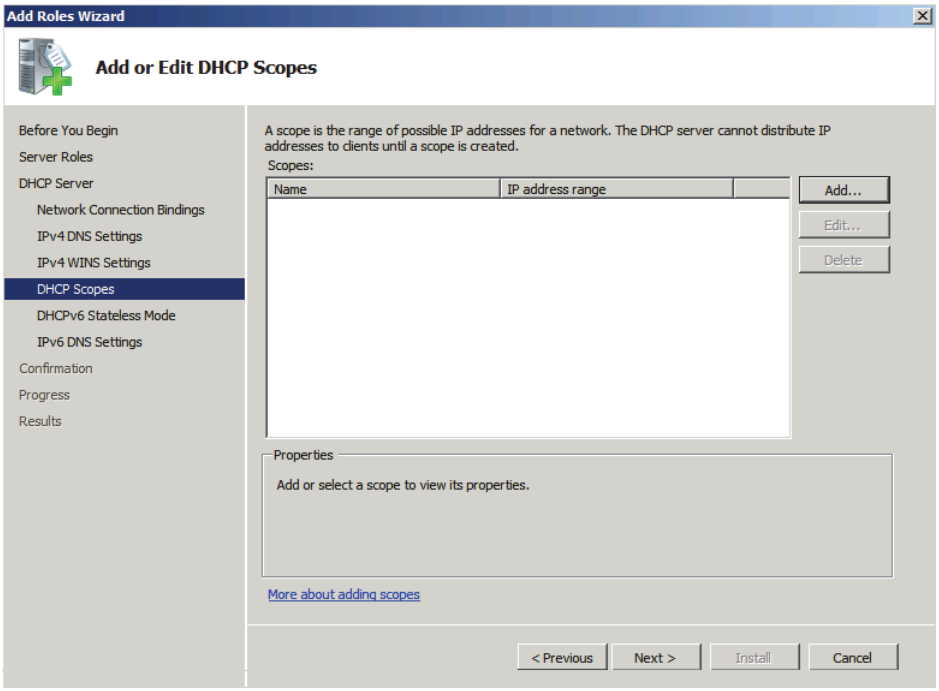
Step8: The **IPv4 DNS Settings** window appears. Specify the domain name and IP address of DNS server. Click the **Next** button.



Step9: The **IPv4 WINS Settings** window appears. If Microsoft Windows Internet Name Service (WINS) Servers are needed in the network (When NetBIOS comes into effect in IP network), select **WINS is required for applications on this network** and specify the IP address. Then click the **Next** button.

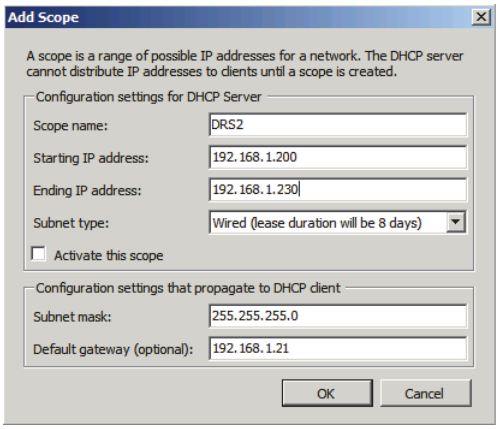


Step10: The **DHCP Scopes** window appears. Click the **Add** button.

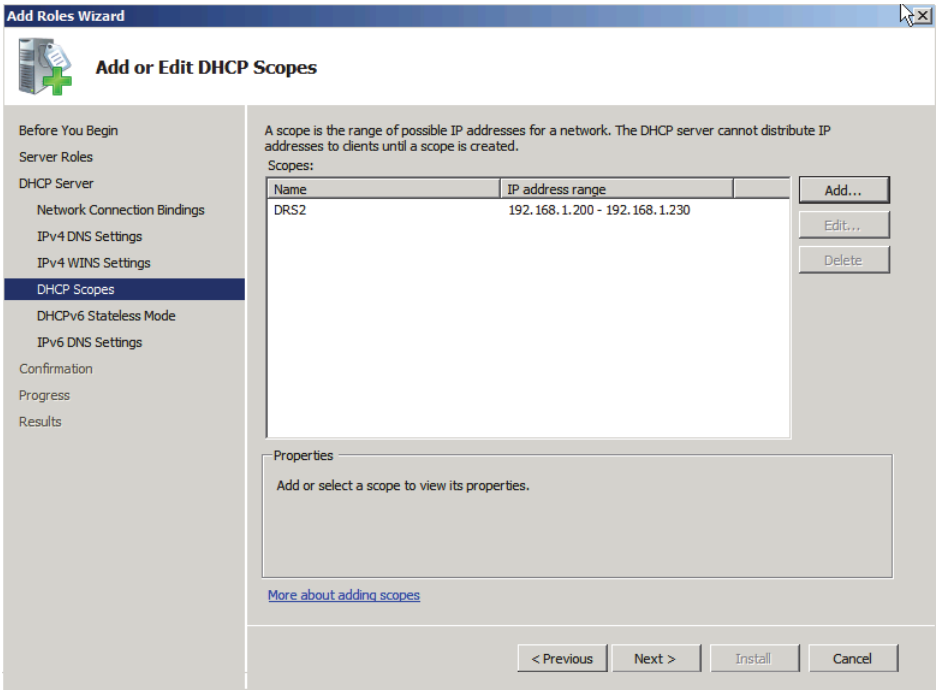


Step11: The **Add Scope** dialog box appears. Specify **Scope name**, **Starting IP address**, **Ending IP address**, and **Subnet type** in the upper field. Specify **Subnet mask** and **Default gateway (optional)** in the lower field. Make sure that **Activate this scope** check box is cleared. Then click **OK**.

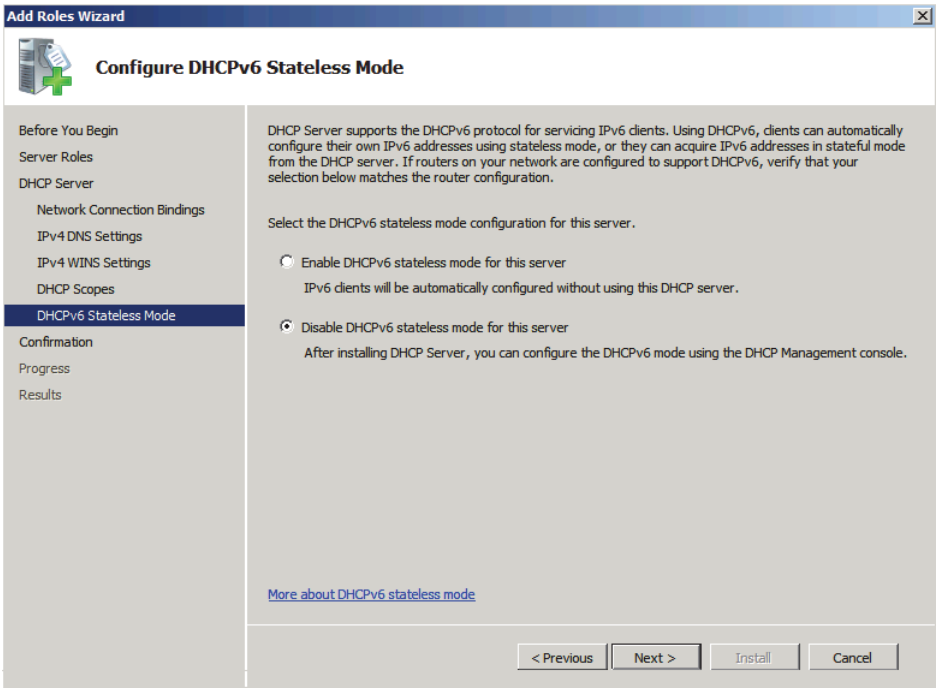
Note : Default Gateway setting is optional and is only required when notifying the IP address of the Default Gateway to IP terminals.



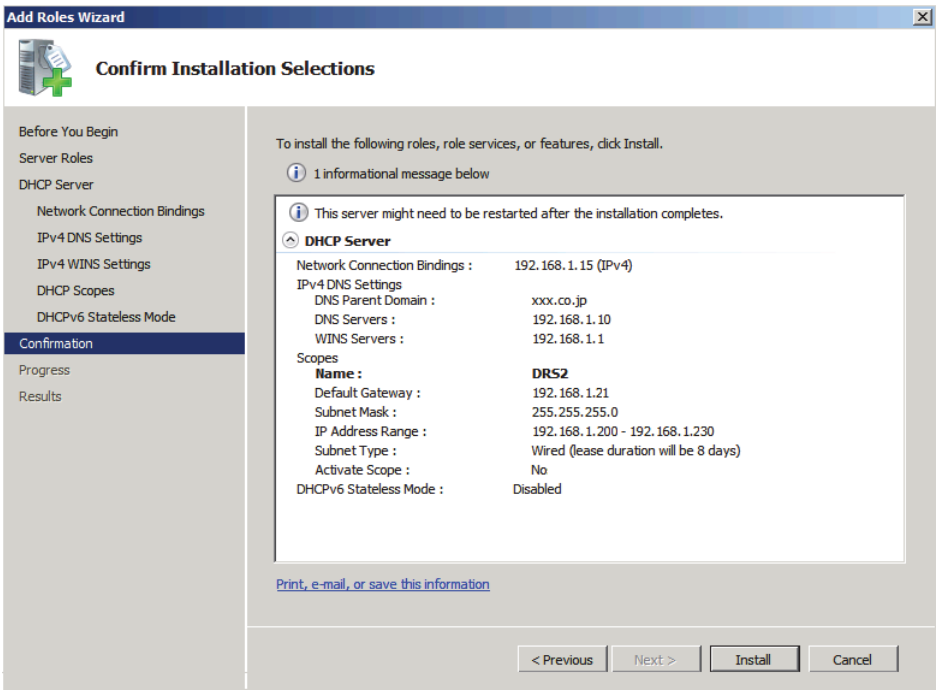
Step12: The **DHCP Scopes** window appears again. Check whether the IP address range for DRS2 is listed and then click the **Next** button.



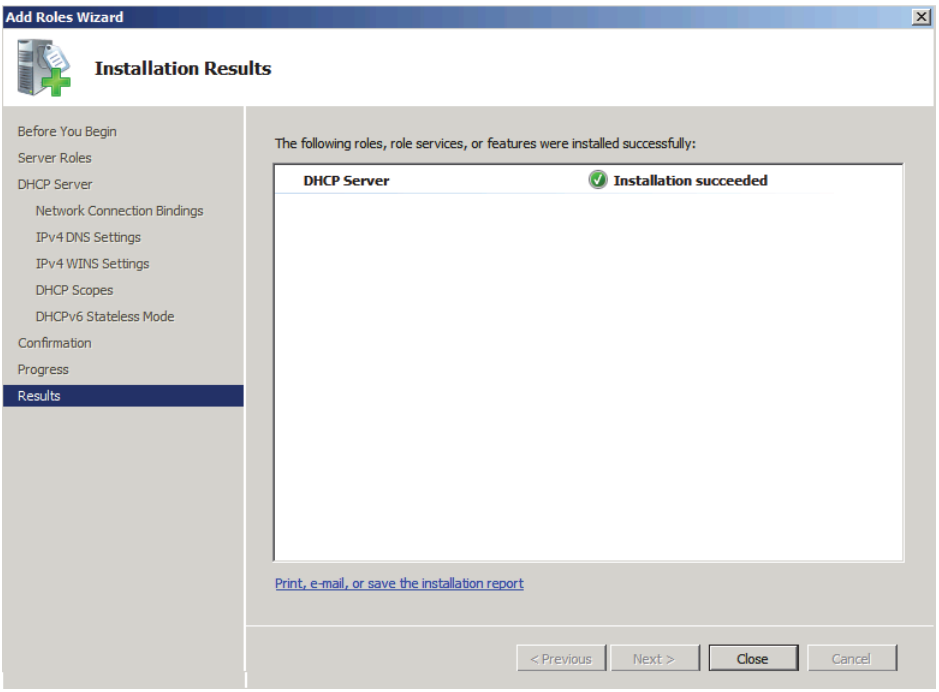
Step13: The **DHCPv6 Stateless Mode** window appears. Select **Disable DHCPv6 stateless mode for this server** and then click the **Next** button.



Step14: The **Confirmation** window appears. Check whether the installation settings for DHCP server are correct and then click the **Install** button.



Step15: Wait until the installation is completed and the **Results** window appears. Check the results to see whether the installation has been completed successfully and then click the **Close** button.



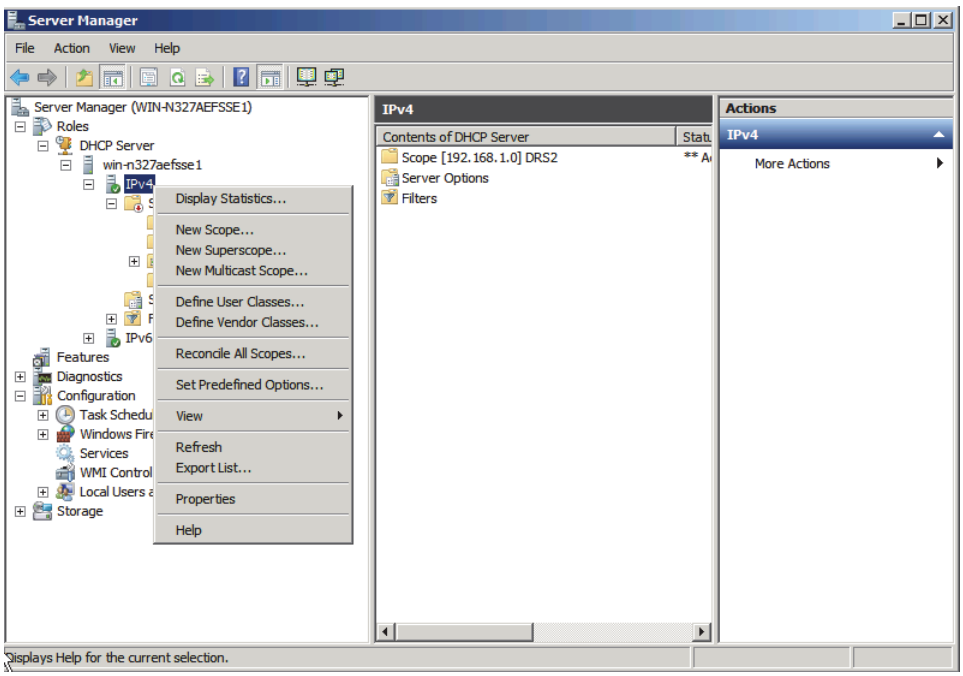
9.2. DHCP Server Optional Setting

Note: "DRS (Device Registration Server)" used in this section refers to Telephony Server. Telephony Server acts as DRS where IP device/terminal is registered.

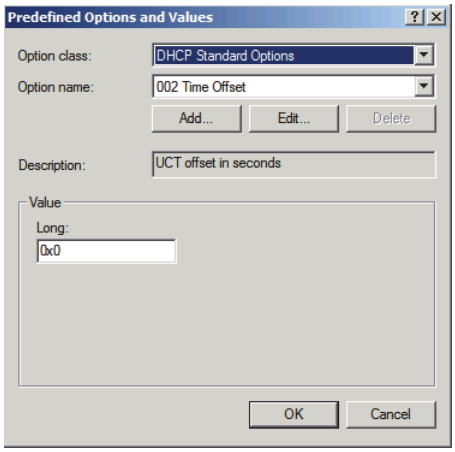
Note: "SIP server" used in this section refers to Telephony Server. Telephony Server acts as SIP server where IP device/terminal is registered.

Note: DRS setting is optional and is only required when you want DHCP server to send DRS IP Address to IP terminals.

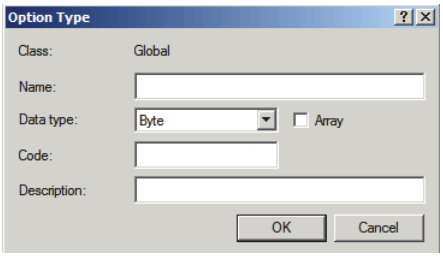
Step1: Select **Start** -> **Administrative Tools** -> **Server Manager**. The **Server Manager** window appears.
Select **IPv4** under **DHCP Server** and then select **Set Predefined Options** from the right click menu.



Step2: The **Predefined Options and Values** dialog box appears. Click the **Add** button.



Step3: The **Option Type** dialog box appears. Specify **Name**, **Data type**, **Code**, and place a check mark on **Array**. After specifying all the items, click **OK**.



The following DHCP Options (CODE) are available.

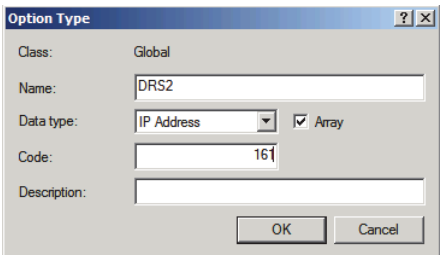
CODE	REMARKS
120	This option is used when DHCP Server distributes the IP Address of SIP server to IP devices/terminals, or when DHCP Server distributes the IP Address of SIP server to IP devices/terminals using Method 1 (for the terminals not supporting IP Address Acquisition function) in Location Diversity.
161	Common use (when Location Diversity is not used in a network)
162	This option is used when DHCP Server distributes the IP Address of DRS to IP terminals using Method 2 (for the terminals supporting IP Address Acquisition function) in Location Diversity.

Note : Tips for specifying DHCP Options for SIP Multiple Line terminals.

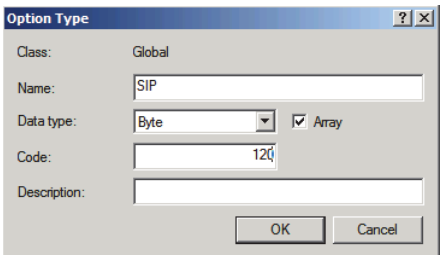
For DtermIP(SIP): Earlier than firmware version 3.0.0.0, select Option 120.

For DT800 Series, DT700 Series, and DtermIP(SIP): Firmware version 3.0.0.0 or later, select Option according to the following priorities:
1st priority is option 162.
If there is no option 162, 2nd priority is option 120.
If there is no option 120, 3rd priority is terminal local setting.

Point: When assigning IP Address with DHCP Options (120/161/162);
The following is an example using IP address when **Name** (DRS2) and **Code** (161) are specified. Select **IP Address** in **Data type** and place a check mark in the **Array** check box.



Point: When assigning IP address/FQDN with DHCP Options (120 only);
The following is an example using IP address/Fully Qualified Domain Name when **Name** (SIP) and **Code** (120) are specified. Select **Byte** in **Data type** and place a check mark in the **Array** check box.

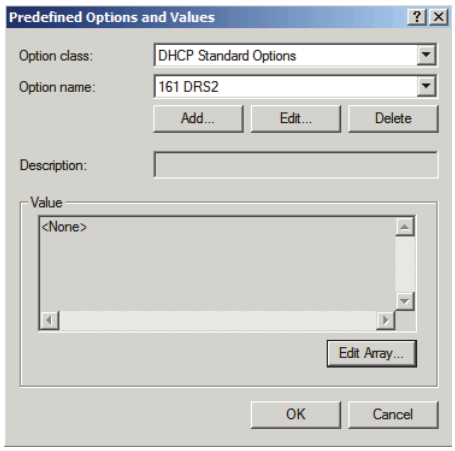


Note : When DHCP Options “120” and “162” are assigned in the same DHCP Server, the DtermIP(SIP) installed firmware version 3.0.0.0 or later prefers to use 162 in the DHCP Options.

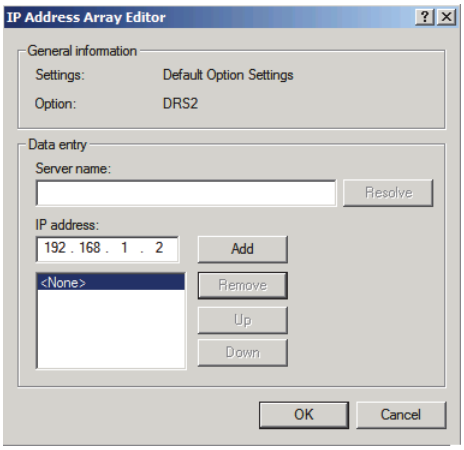
Note : In the case when DHCP Option “120” is set in the DHCP Server, when MH250s, Standard SIP terminals, and DtermIP(SIP)s coexist in a network using SIP WIRELESS TERMINAL BACKUP [S-154]:
- MH250 and the Standard SIP terminal use the virtual IP address created by SIP WIRELESS TERMINAL BACKUP
- DtermIP(SIP) uses Telephony Server’s IP address

Because of the above, two DHCP Servers need to be prepared to distribute two types of IP addresses. Divide it into multiple networks (such as using VLANs), and then arrange the terminals on the network to connect to the DHCP Server that provides the appropriate IP address.
If the above cannot be accomplished in your environment, stop using the DHCP Server and assign the appropriate static IP addresses to the terminals by configuring the terminal setting in each device.

Step4: Confirm that option type has been registered. Then click the **Edit Array** button. Option type you specified is displayed in the “Code + Name” format. The following screen is the case that Code (161) and Name (DRS2) are specified.

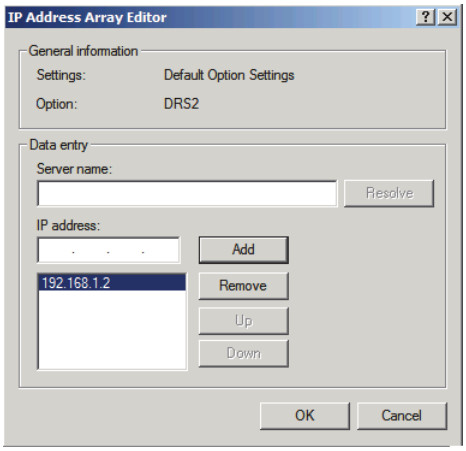


Step5: Enter IP address of DRS (192.168.1.2) and click the **Add** button.

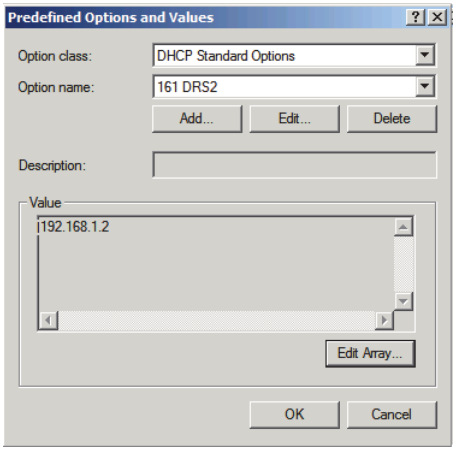


Step6: After confirming the IP address is added to the bottom field, click **OK**.

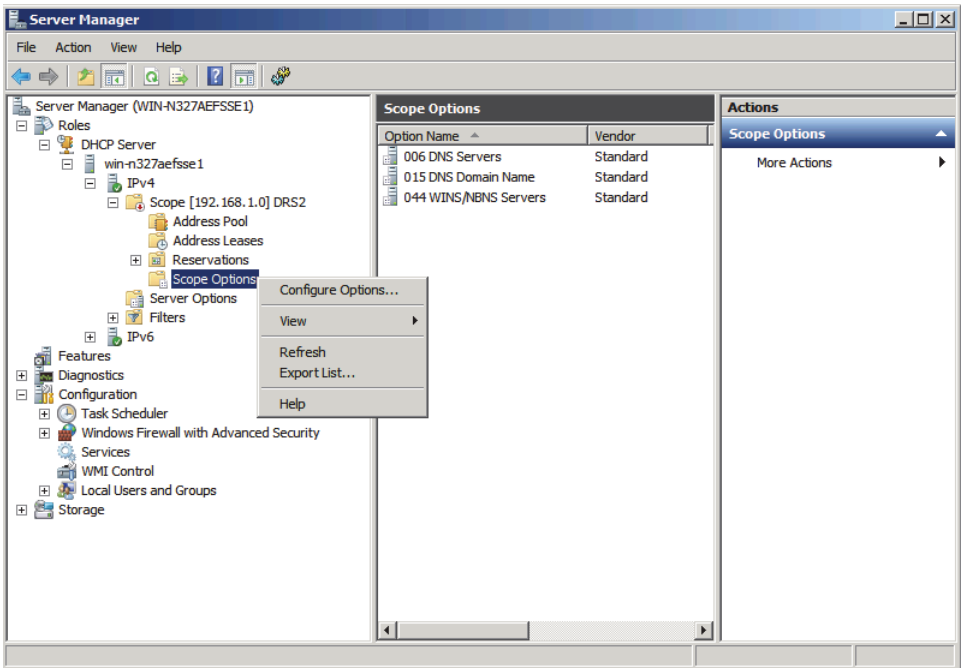
Note : When setting two IP addresses, the first one in the column indicates IP address of the primary DRS, and the second one indicates the secondary DRS.



Step7: Confirm that IP address assigned in STEP5 is displayed in the **Value** field of the dialog. Then click **OK**.

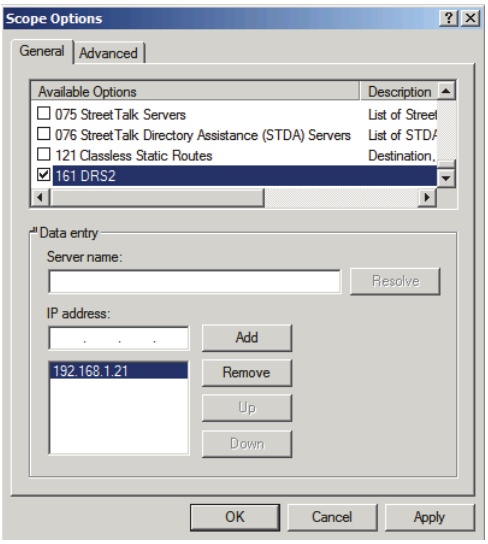


Step8: After completing the DRS setting, go back to the **Server Manager** window. Select **Scope Options** in the tree, and then select **Configure Options** from the right click menu.

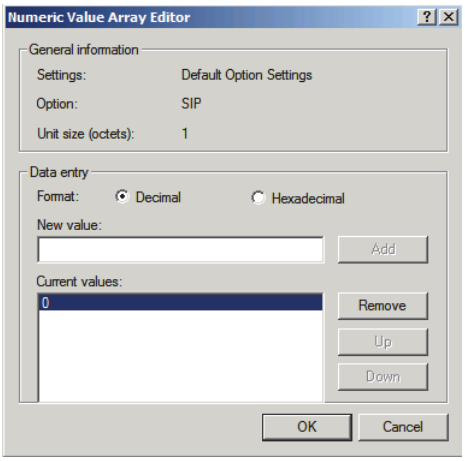


Step9: The **Scope Options** window appears. Click the check box of an appropriate option. The data entry field becomes available. Specify the settings and then click **OK**. Refer to the Points below for details.

Point: When IP Address used with DHCP Options (161/162) is assigned; Specify an IP Address and click the **Add** button. After all the settings are done, click **OK**. The following is an example when an IP address (192.168.1.21) is added to 161 DRS2 [name (DRS2) and code (161)].



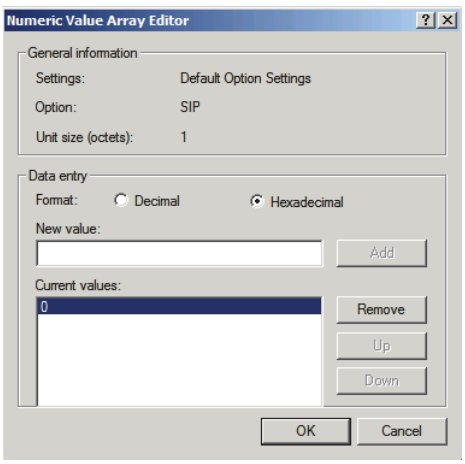
Point: When IP address used with DHCP Options (120) is assigned;
Select **Decimal**, and click the **Add** button after specifying a value per octet of the **New value** field. After all the settings are done, click **OK**.



For example, when SIP Server's IP address in the network is "192.168.1.2", the following numbers have to be specified. Note that you have to click "Add" after specifying each of the number set.

1: Start with "1" (fixed)
192: Indicates the first octet.
168: Indicates the second octet.
1: Indicates the third octet.
2: Indicates the forth octet.

Point: When Fully Qualified Domain Name used with DHCP Options (120) is assigned.
Select **Hexadecimal**, and click the **Add** button after specifying a value per character of the domain name. After all the settings are done, click **OK**.



For example, when SIP Server name (host name) in the network is “sp0.nec.co.jp”, the following numbers have to be specified. Note that you have to click the **Add** button after specifying each of the number set into New value.

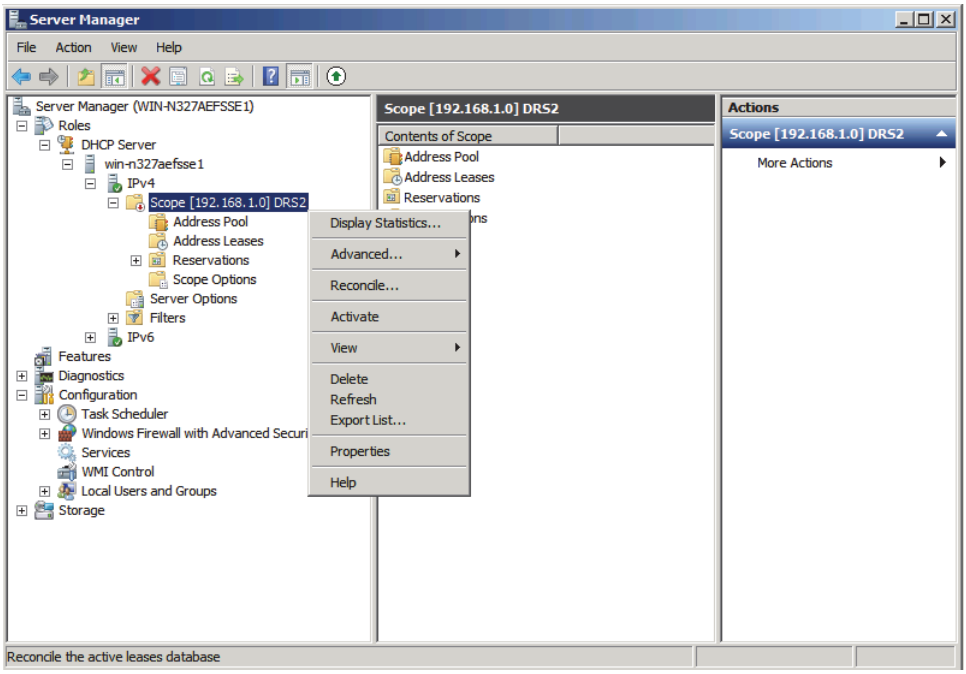
0x0: Start with “0” (fixed)
0x3: Declares three characters to be used for the first character string (***sp0***).
0x73: Indicates “s” in ASCII format.
0x70: Indicates “p” in ASCII format.
0x30: Indicates “0” in ASCII format.
0x3: Declares three characters to be used for the second character string (***nec***).
0x6e: Indicates “n” in ASCII format.
0x65: Indicates “e” in ASCII format.
0x63: Indicates “c” in ASCII format.
0x2: Declares two characters to be used for the forth character string (***co***).
0x63: Indicates “c” in ASCII format.
0x6f: Indicates “o” in ASCII format.
0x2: Declares two characters to be used for the fifth character string (***jp***).
0x6a: Indicates “j” in ASCII format.
0x70: Indicates “p” in ASCII format.
0x0: End with “0” (fixed)

Use the following ASCII spread sheet for specifying a SIP domain name. Note that available characters to be used for the domain name are different, depending on countries.

0x20: Space 0x21-0x7e: Graphic Characters					
CHAR.	CODE	CHAR.	CODE	CHAR.	CODE
SP	0x20	@	0x40	`	0x60
!	0x21	A	0x41	a	0x61
"	0x22	B	0x42	b	0x62
#	0x23	C	0x43	c	0x63
$	0x24	D	0x44	d	0x64
%	0x25	E	0x45	e	0x65
&	0x26	F	0x46	f	0x66
'	0x27	G	0x47	g	0x67
(	0x28	H	0x48	h	0x68
)	0x29	I	0x49	i	0x69
*	0x2a	J	0x4a	j	0x6a
+	0x2b	K	0x4b	k	0x6b
,	0x2c	L	0x4c	l	0x6c
-	0x2d	M	0x4d	m	0x6d

0x20: Space 0x21-0x7e: Graphic Characters					
CHAR.	CODE	CHAR.	CODE	CHAR.	CODE
.	0x2e	N	0x4e	n	0x6e
/	0x2f	O	0x4f	o	0x6f
0	0x30	P	0x50	p	0x70
1	0x31	Q	0x51	q	0x71
2	0x32	R	0x52	r	0x72
3	0x33	S	0x53	s	0x73
4	0x34	T	0x54	t	0x74
5	0x35	U	0x55	u	0x75
6	0x36	V	0x56	v	0x76
7	0x37	W	0x57	w	0x77
8	0x38	X	0x58	x	0x78
9	0x39	Y	0x59	y	0x79
:	0x3a	Z	0x5a	z	0x7a
;	0x3b	[	0x5b	{	0x7b
<	0x3c	\	0x5c	|	0x7c
=	0x3d	]	0x5d	}	0x7d
>	0x3e	^	0x5e	~	0x7e
?	0x3f	_	0x5f		

Step10: Return to the **Server Manager** window and select the Scope you have just configured. Select **Activate** from the right click menu.

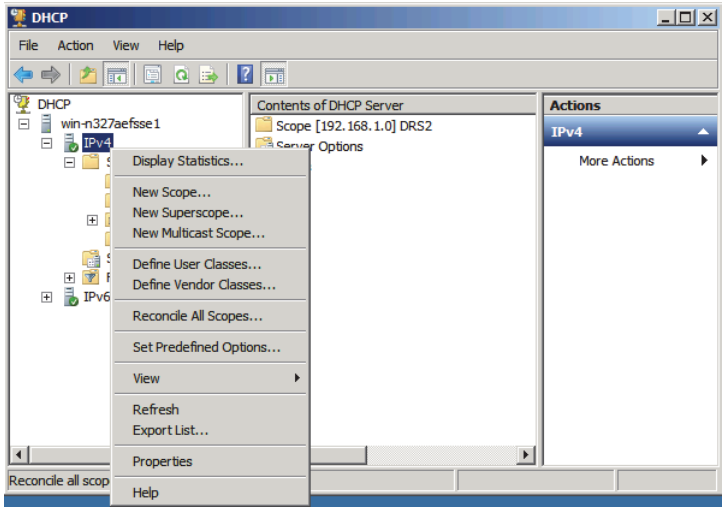


9.3. DHCP Address Conflict Detection Setting

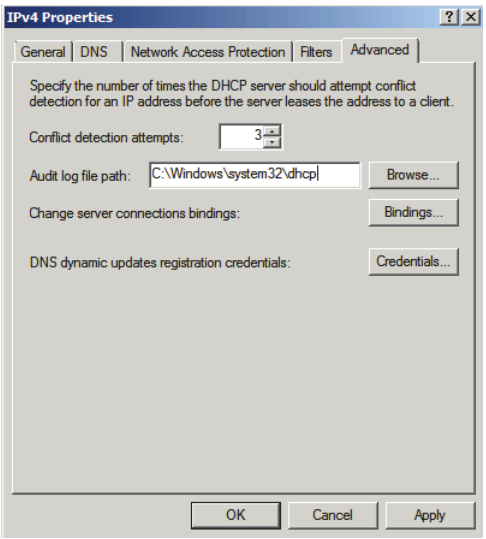
Set the number of times the DHCP Server executes the Ping Command for the detection of IP address conflict. Follow the procedure below. Be sure to perform this setting.

Note: DHCP Server must be installed in advance.

Step1: Select **Start** -> **Administrative Tools** -> **DHCP**. The **DHCP** window appears. Select **IPv4** under **DHCP** and then select **Properties** from the right click menu.



Step2: The **IPv4 Properties** window appears. Click the **Advanced** tab. Set the number of times the DHCP Server executes the Ping Command for the detection of IP address conflict and then click **OK**. In the following example, “3” is specified as the number of times Ping is carried out.

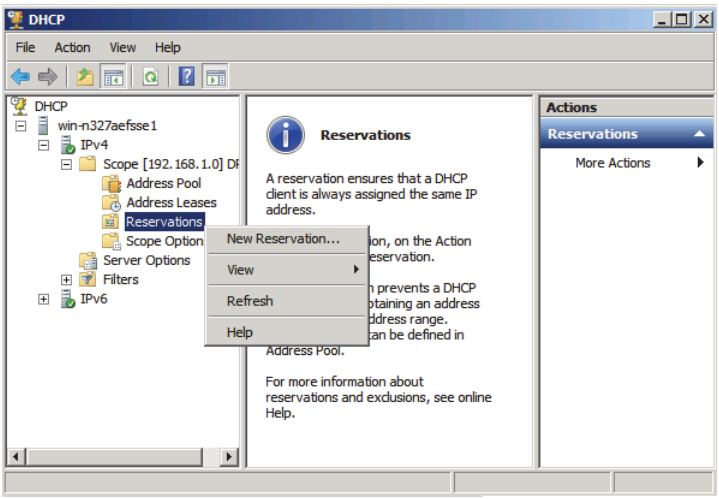


9.4. DHCP Address Static Setting

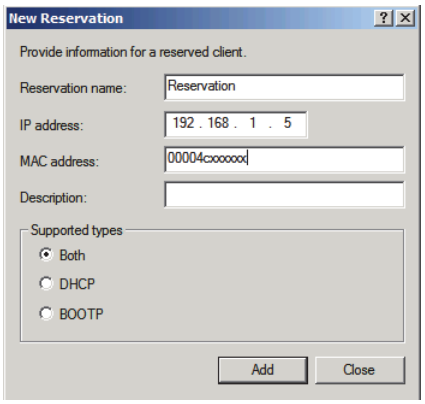
The following steps show how to configure a DHCP server to assign the fixed IP address to a DHCP client. In consideration of network security, etc., follow the procedure below if necessary.

Note: DHCP Server must be installed in advance.

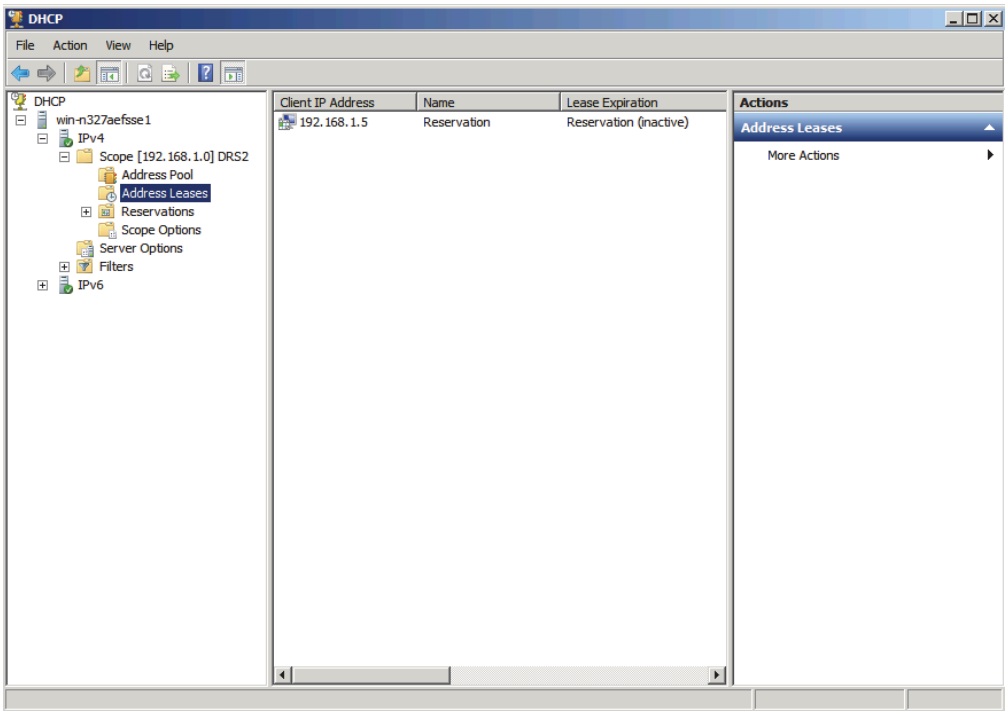
Step1: Select **Start** -> **Administrative Tools** -> **DHCP**. The **DHCP** window appears. Select **Reservation** under the activated scope in the tree and then select **New Reservation** from the right click menu.



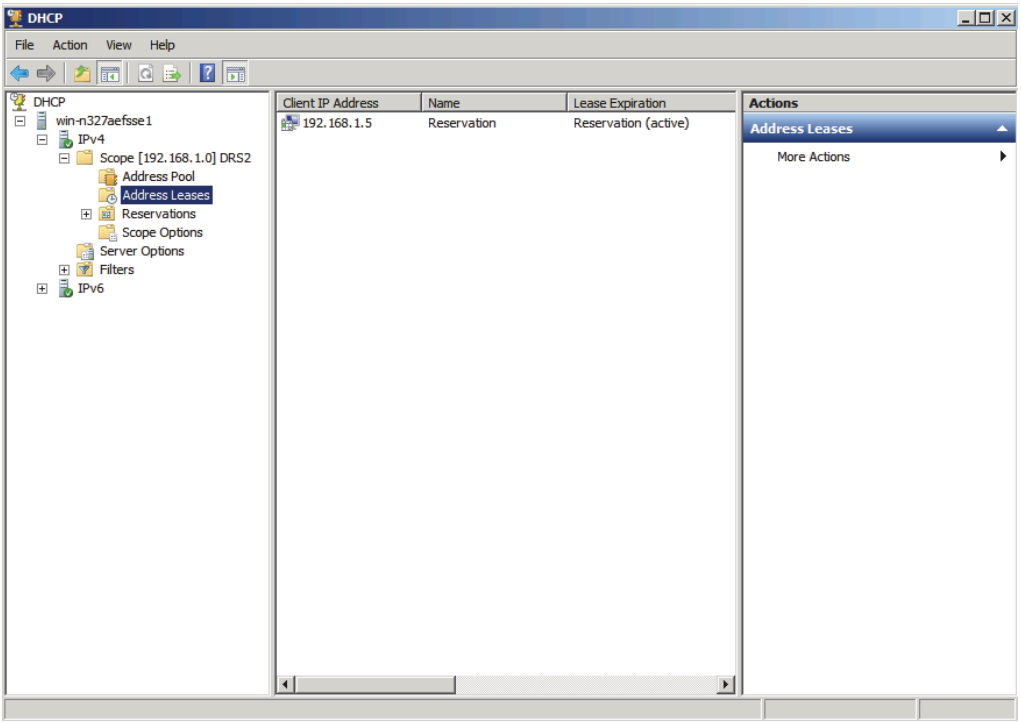
Step2: The **New Reservation** dialog box appears. Enter the appropriate **IP address** and **MAC address**. Then click the **Add** button. After all the necessary IP addresses are set, click the **Close** button.



Step3: Return to the **DHCP** window and click **Address Leases** in the tree. The display changes as follows. The Lease Expiration column displays “Reservation (inactive)” until the DHCP server receives the address request from the target client.



Step4: When the DHCP server reserves the address request from the target client, the status changes to “Reservation (active)” as shown in the following figure.



UNIVERGE SV9500
System Description

NWD-165793-001

Revision Sheet

V5: DATE OCTOBER, 2017

CHAPTER 2
32

V4: DATE MARCH, 2017

CHAPTER 2
27,28,33,40,41

CHAPTER 3
55,56,67,68,69,70,79,88,89,101, 102,103,104,167,179,180,181, 182,186,187,190,191

V4: DATE OCTOBER, 2016

CHAPTER 1
2,3,4,5,6,7,8,10,11,12,13,14,15, 16

CHAPTER 2
21,22,24,26,27,30,36,37,38,43

CHAPTER 3
50,54,56,57,59,60,68,69,82,135, 136,137,138,164,165,166,169, 172,173,176,178,182,183,186, 187,189,190

V3: DATE APRIL, 2016

REGULATORY NOTICE
6

CHAPTER 1
2,3,4,5,6,7,8,9,10,11,12,13

CHAPTER 2
16,18,19,20,21,22,23,24,25,27, 28,32,36,37,40,41

CHAPTER 3
55,58,59,61,63,76,87,89,91,92, 93,94,95,96,97,98,99,102,103, 105,108,110,114,117,129,135, 174,175,177,178,179,184,185, 187,192,.195,197,202,.204,205, 206

V2: DATE OCTOBER, 2015

CHAPTER 1
2,3,4,5,6,7,8, 9,10,11,12

CHAPTER 2
13,14,15,16, 17,20, 23,24,25,27, 28,31,33,34,35,37,38,39

CHAPTER 3
42,43,44,45,46,47,48,49,50,52, 54,55,56,57,59,65,66,72,73,75, 81,82,83,84,85,86,87,88,89,90, 93,95,96,97,98,99,100,101,102, 103,104,105,106,107,109,112, 114,116,118,120,121,123,124, 125,130,134,136,138,140,141, 142,144,146,147,148,149,150, 151,152,153,154,155,156,157, 158,159,160,161,162,163,164, 165,166,167,168,169,170,171, 172,173,174,175,176,177,178, 179,181,192,193,195,197,198

V2: DATE MARCH, 2015

REGULATORY NOTICE
2,9,10,11,12

CHAPTER 1
2,3,4,5,6,7,8, 9,10,11,12

CHAPTER 2
13,14, 15,16,17,18,20, 23,24,26, 27,28,30,31,33, 35,37,38, 39

CHAPTER 3
42,43,44,l45,46, 47,48,49, 50
54,55,56,57,65,66,72,73,75,81, 82,83,84,85,86,87,88,89,90,93, 95,96,97,98,99,100,101,102,103, 104,105,106,107,109,112,114, 116,118,120,121,123, 124,125, 130,134,136,138,140,142,144, 146,147,148,149,151,152,153, 154,155,156,157,158,159, 160, 161,162,163,164,165,166,167, 168,169,170,171,172,173,174, 175,177,188,189,191,193,194

V1: DATE MAY, 2014

Chapter 1
2,3,4,5,6,7,8,9,10,11,12

Chapter 2
13,14,15,16,17,20,23,25,26,31, 33,35,37,38,39

Chapter 3
43,44,45,46,47,48,49,50,51,55, 56,57,58,59,67,68,74,75,77,85, 86,87,88,126,146,148,149,150, 151,152,153,154,155,156,157, 158,159,160,161,162,163,165, 166,169,171,174