UNIVERGE SV9500

FP95-115 V5

Software Model Peripheral Equipment Description

GVT-016673-001
ISSUE 3.0

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CHAPTER 1
INTRODUCTION

1. Introduction

1.1 What is This Manual?

In this manual, the process from install to setup for peripheral equipment accommodated in SV9500 is explained.

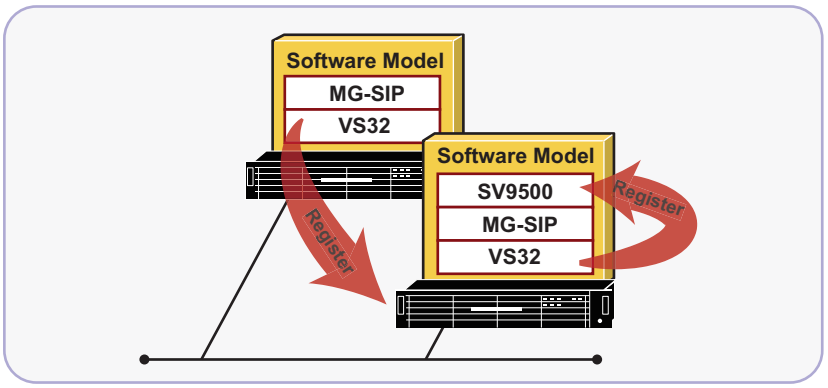
Note: Refer also to UNIVERGE SV9500 Software Model Installation Manual when using peripheral equipment of Software Model.

1.2 Peripheral Equipment of Software Model

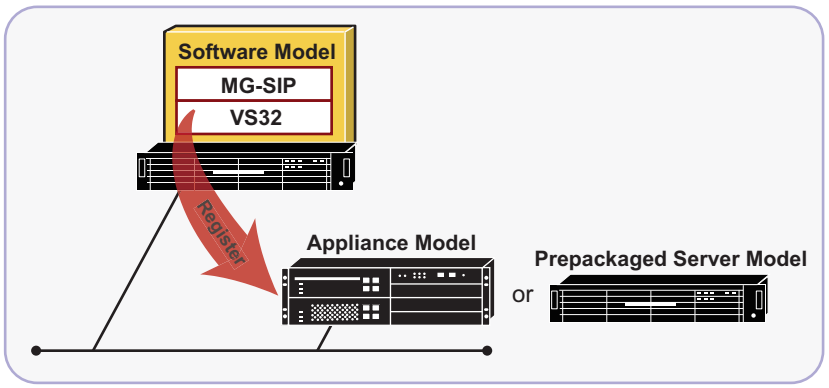
Because peripheral equipment of Software Model are virtual machines, the user virtual environment can be used for accommodation and equipment can be used without the installation requirements and other limitations of hardware. Also, the Telephony Server to which equipment is registered is not only SV9500 Software Model, equipment can be registered as a peripheral device of SV9500 Appliance Model or SV9500 Prepackaged Server Model, allowing several environments for operations.

Note: Software Model is available from FP95-114 V4.

When Registered to SV9500 Software Model



When Registered to SV9500 Appliance Model/Prepackaged Server Model



1.3 How to Follow This Manual

The contents of each chapter for this manual is as follows.

CHAPTER		DESCRIPTION
1	Introduction	In this chapter, an explanation about the way of using this manual and peripheral equipment of Software Model is given.
2	Software-based MG-SIP **Note 1**	In this chapter, Software-based MG-SIP installation and setup is explained.
3	Software-based VS32 **Note 1**, **Note 2**	In this chapter, Software-based VS32 installation and setup is explained.

Note 1: Available from FP95-114 V4.

Note 2: It only provides announcement (DAT) feature.

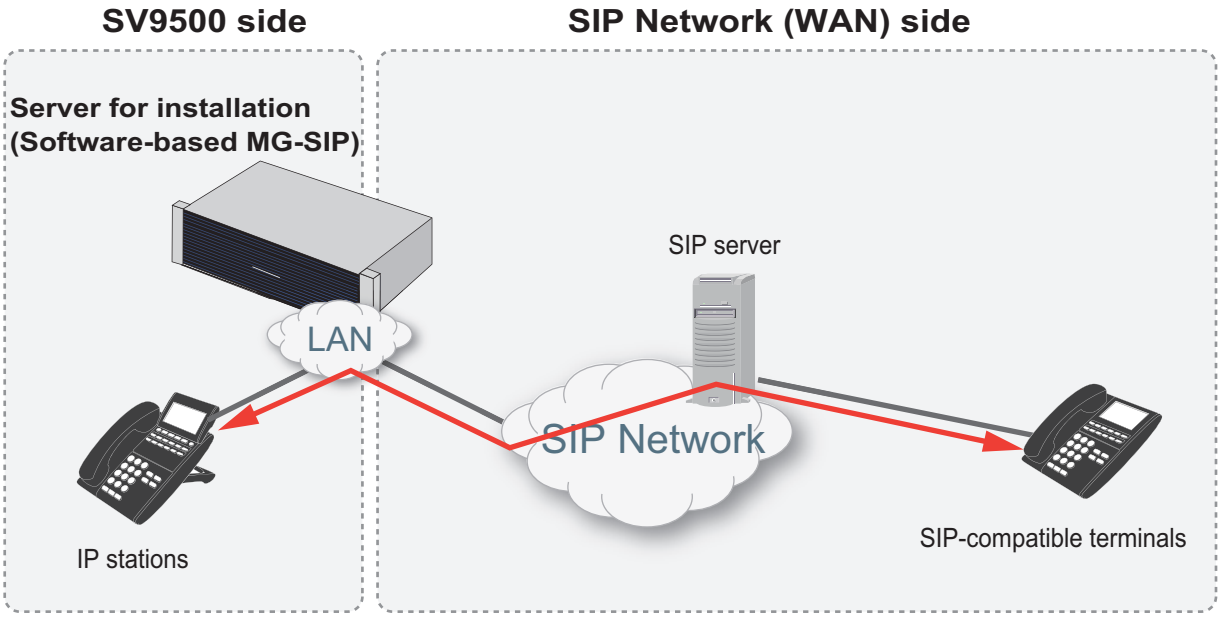
CHAPTER 2 SOFTWARE-BASED MG-SIP

1. What is Software-based MG-SIP?

The software-based MG-SIP is an application to be installed as a virtual machine on a server.

It is a software-based SIP-compatible media gateway to realize communication with service networks. MG-SIP provides VoIP devices supporting SIP (Session Initiation Protocol, based on RFC3261) with peer-to-peer VoIP services. MG-SIP also connects an IP station located on LAN with a SIP terminal (based on RFC3261) located on the WAN-side (SIP network) and maintain voice quality.

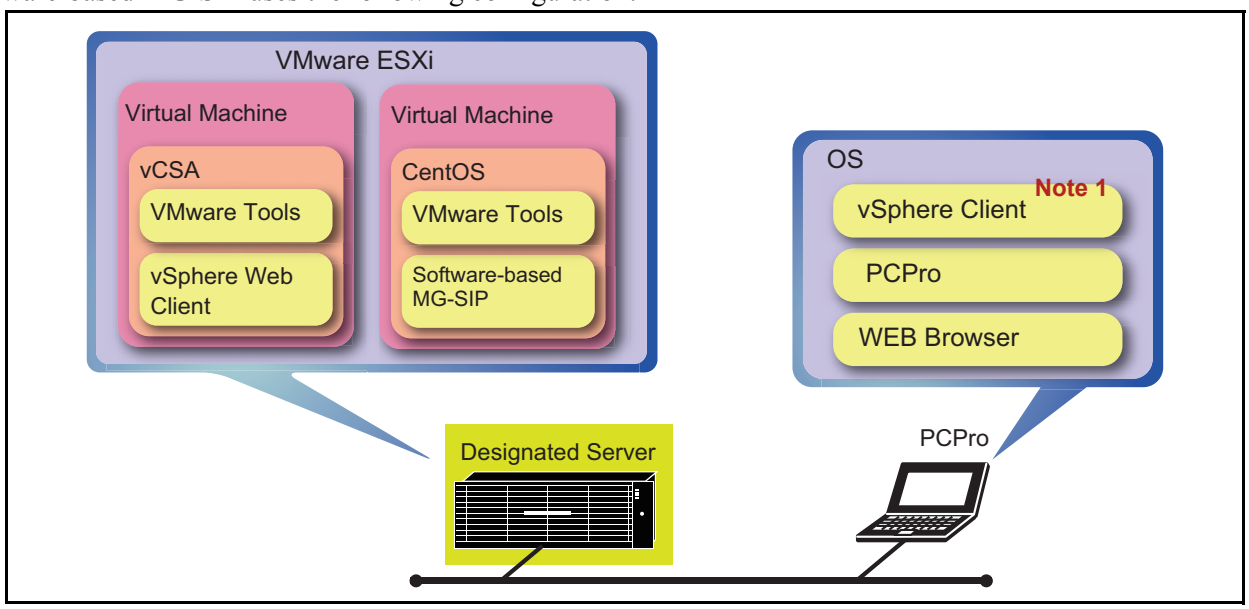
Note: Software-based MG-SIP is available from FP95-114 V4.



Note: When using video call feature (available from FP95-114 V4), refer to VIDEO CALL [V-31] in the Data Programming Manual - Business for MCU usage.

1.1 Software-based MG-SIP Configuration

Software-based MG-SIP uses the following configuration:



Note: In the configuration given above vCSA and Software-based MG-SIP are in the same server but they can also be installed in different servers.

The configuration of the server is as follows:

Name	Description
VMware ESXi	It is the software that controls the virtual machines.
vCenter Server Appliance (vCSA)	It provides integrated management service for vSphere infrastructure (virtual machines, VMware ESXi, etc).
VMware Tools	It operates on the virtual machines and receives instructions from VMware ESXi. Executes shutdown control of the guest OS and time synchronization between VMware ESXi and the guest OS.
Software-based MG-SIP	It is installed as a virtual machine in the server and provides the MG-SIP feature.

The configuration of the maintenance PC is as follows:

Name	Description
vSphere Client	It is an interface that can be used for managing vCenter Server and VMware ESXi. **Note 1**
PCPro	It is used for data settings of SV9500 (For more details, refer to PCPro Setup Manual).
Web Browser	It is used for vSphere Web Client and Telephony Server Maintenance Menu. vSphere Web is a browser-based interface for configuring and managing virtual machines.

Note 1: In a virtual platform that uses VMware ESXi 6.0, when operating Software-based MG-SIP, configure and manage the virtual machine with vSphere Client. Do not use vSphere Web Client.

2. Conditions

Service conditions of the software-based MG-SIP are as follows:

Note: This section only describes conditions specific to the software-based MG-SIP. For general conditions on MG-SIP, see [Data Programming Manual - Business] -> [MEDIA GATEWAY SIP [M-111]].

(1) Software-based MG-SIP can register to SV9500 Software Model, SV9500 Prepackaged Server Model and SV9500 Appliance Model.

(2) The firmware version of Software-based MG-SIP is SP-4085 Issue 1.0 or later.

(3) As a tool for configuring the command data of the software-based MG-SIP, the virtual console of the guest OS (CentOS) is used instead of the conventional serial console. Though there are 6 virtual consoles (No.1 to No.6), the MG-SIP can only use a console No.1.

Note: To change the virtual console, press the Alt + F1-F6 key. For example, when the Alt + F2 key is pressed, the screen of the virtual console No.2 is displayed. This operation is used when you want to display a new screen while the original screen is being displayed. (virtual consoles No.2 to No.6 cannot be used)

(4) SV9500 cannot detect an Ethernet link down because the software-based MG-SIP runs on the virtual machine. Alternate routing due to an Ethernet link down in the SIP network is not available.

(5) Available operation mode of the virtual console is auto negotiation only. Therefore, set “0=auto-negotiation” for the “set interface” command.

(6) Since software-based MG-SIP does not have any lamp, unlike the existing hardware-based MG-SIP, the state of the unit such as power-on/off cannot be indicated by a lamp. MG-SIP registration status can be checked with “1=IPX Status” of the “show status” command or ONLINE START/OFFLINE START message displayed on the virtual console.

(7) Software-based MG-SIP acquires clock information from the SV9500 server when registering to the server. When the clock information is changed on the host (if VMware environment is used, VMware ESXi), the MG-SIP needs to perform re-registration.

(8) When the SV9500 in the same server is initialized or reset, the Software-based MG-SIP will be rebooted by the health check timeout. After the rebooting, the Software-based MG-SIP can become operative.

3. Telephony Server Data Settings

Follow the steps below for Telephony Server data settings.

1 Connect to PCPro using the connection account (e.g. NewOffice#1) assigned for the IP address of LAN2 connector. Enter the user ID and the password that have been previously assigned to connect to PCPro.

2 Assign the Route Class Data for Virtual Speech Channel through the **ARTD/ARTDN** command.

(1) Enter a Route Number (1-255).
(2) Choose “MG-SIP” for Template Type.
(3) Assign the following data.

CDN	FUNC	DATA
66	DC	1-15

(4) Also, assign the following data to the dummy route.

CDN	FUNC	DATA
111	ADVPRA	1

Note: To change the data for existing route (RT), initialize or reboot the MG-SIP.

3 Assign the trunk application data for Virtual Speech Channel through the **ARTI/ARTIN** command.

(1) Assign the following data.

CDN	FUNC	DATA
47	INTD	2
68	VIR	2
77	RA_RT	0/1

(2) When using a FAX communication, assign the following data.

CDN	FUNC	DATA
71	FXD	0/1
72	FXJS	1-30
73	FXPT	0-6
74	FXPS	1-4

4 Assign a trunk data to the Virtual Speech Channel through the **ATRK** command.

RT: Specify Route Number (1-255).
PC: Specify Trunk Number (1-255).
LENS: Specify Accommodated Location (Six digits).

[Example]

RT (1-255)	TK (1-255)	LENS			
		MG 00-07	U 0-3	G 00-23	LV 0-7
10	1	01	0	00	0
:	:	:	:	:	:
10	192	01	0	23	7
10	193	01	1	00	0
:	:	:	:	:	:
10	254	01	1	07	5

Virtual Communication Channel

Note: The conditions when this command is assigned are as follows.

- Be sure to register the virtual communication channel per four groups.
- Other than MG-SIP virtual communication channel cannot be registered for HW (4 group) that is registered one or more MG-SIP virtual communication channels.
- The virtual communication channel is assigned by using the **AMGIL** command.
- Do not assign the LENS that belongs to even-numbered module group, Unit=0 and Group=0 to a trunk, because not supported by MG-SIP.

5 Assign a Point Code on the Virtual Speech Channel through the **ADPC** command.

RT: Specify Route Number (1-255).
PC: Specify unused Point Code (1-16383).

6 Assign the top number of 32-channel LENS through the **ACSC** command.
CSCG: Specify the CSC Group Number (an even number from 130 to 255).
GROUP: Specify the CIC Group Number.
CCH: Specify the lead LENS of a unit.

[Example]

CSCG	CICG	CCH		
		MG 00-07	U 0-3	G 00-23
130	0	01	0	00
	1	01	0	04
	2	01	0	08
	3	01	0	12
	4	01	0	16
	5	01	0	20
	6	01	1	00
	7	01	1	04

Note: Be sure to register the accommodation position of the LENS of Virtual Signal Channel to CIC Group Number 0.

Note: If there are only two lead LENS in the CIC Group (channels 33~64), register LENS of the Virtual Signal Channel in the remaining fields.

7 Activate the **ACIC1** command. Specify the accommodated location of Virtual Signal Channel on Point Code as follows:
PC: Enter Point Code specified by ADPC.
CSCG: Enter CSC group specified by ACSC.

8 Activate the **ACIC2** command. Specify the accommodated location of Virtual Control Channel on Point Code as follows:
PC: Enter Point Code specified by the **ADPC** command.
CIC: Enter CIC numbers in sequential number.
LENS: Enter accommodated locations of Speech Channel and B-Channel.

Note: Assign CIC numbers in order from “1.”

9 Execute the **MBTK** command to cancel Make Busy state of the Virtual Speech Channel.

10 Assign the necessary information data regarding to the Virtual MG-SIP through the **AMGIL** command.

MG-ID: Enter MAC Address (6 bytes).
FUNCTION = Setting
KIND = SIP-MG
LINE = 0 (fixed)
CH = 0 (fixed)
LENS: Enter Basic Accommodated Location (the first number of HW).
RETRY = 0
Service Type: Specify QoS settings of Signaling that is used when Internal PHI-BRI connects MG-SIP.
Usable CH Num: Enter the number of channels to be used per MG-SIP.
Service of Authentication exists: Select the check box if registration is required per number.
MG Group: Enter MG-SIP Group Number 1-15 to make an alternate route for redundancy configuration. **Note 1**
MG Number: Enter MG-SIP Number 1-15 belonging to the MG-SIP Group. **Note 1**

Note1: This parameter only appears if “Service of Authentication exists” check box is selected.

Note: Assign the MAC address of the Software-based MG-SIP server (LAN side) to the MG-ID parameter.

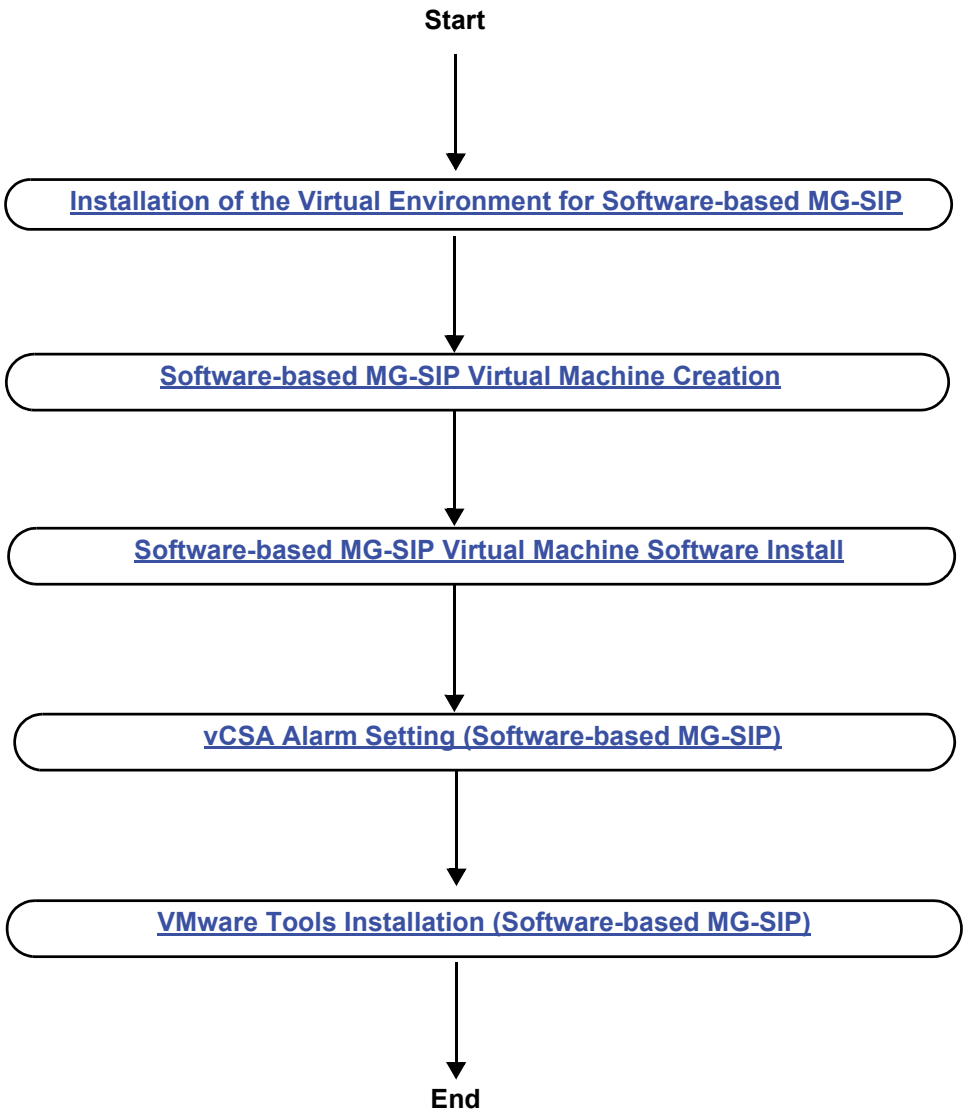
Note: Whether to use Service of Authentication is determined by the carrier’s selected services. For more information about this feature, refer to Multiple Number Service (MG-SIP) [M-113] in the Data Programming Manual - Business.

4. Software-based MG-SIP Installation

The following explanation is an example of installation of Software-based MG-SIP. Before start the installation, see Software Model Installation Manual for the data used as example in such installation process.

4.1 Software-based MG-SIP Installation

The installation of the Software-based MG-SIP follows the flowchart below.



4.1.1 Installation of the Virtual Environment for Software-based MG-SIP

Software-based MG-SIP needs to be installed in a server configured with the software mentioned in **1.1 Software-based MG-SIP Configuration**. The order of installation is as follows:

(1) Install and set up VMware ESXi. **Note 1**

(2) Install and set up vCSA Manual. **Note 1**

(3) Create a Datacenter and add VMware ESXi Server. **Note 1**

(4) Create the network settings as explained in the section VMware ESXi Network Settings of Software Model Installation Manual.

Note 1: For VMware software, consult the installation process in the VMware manuals.

4.1.2 Software-based MG-SIP Virtual Machine Creation

Create the virtual machine of MG-SIP using as model Virtual Machine Creation section explained in Software Model Installation Manual.

4.1.3 Software-based MG-SIP Virtual Machine Software Install

Install the software for Software-based MG-SIP virtual machine using as model Virtual Machine Software Install section of Software Model Installation Manual.

4.1.4 vCSA Alarm Setting (Software-based MG-SIP)

Set an alarm for the MG-SIP virtual machine using as model vCSA Alarm Setting section of Software Model Installation Manual.

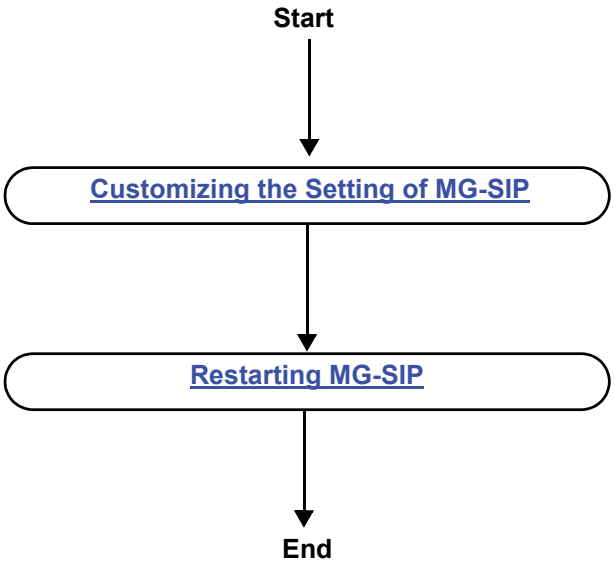
4.1.5 VMware Tools Installation (Software-based MG-SIP)

Install VMware Tools using as model Virtual Machine Startup section of Software Model Installation Manual.

When installing, skip the part about setting an IP address. (for the IP address setting, see 4.2.1 Customizing the Setting of MG-SIP.)

4.2 Software-based MG-SIP Setup

This section describes the setup procedure of software-based MG-SIP. Follow the flow chart below.



4.2.1 Customizing the Setting of MG-SIP

Follow the steps below to customize the settings of MG-SIP virtual machine.

1 From the web browser of the maintenance PC, enter the IP address of vCSA (https://192.168.1.2:9443/). (192.168.1.2 is the example vCSA IP address).

Note: If VMware ESXi 6.0 is used, log in with vSphere Client, click **Inventory**, and continue this procedure from STEP4.

2 Check that the Caps Lock and the Num Lock lamps are not lit. Log in to vSphere Web Client with the user name and password set when creating the vCSA.

3 In the displayed **Home** screen, click **Hosts and Clusters**.

4 Right-click the MG-SIP virtual machine from the menu on the left side of the screen. Choose **Open Console**.

Note: The Software-based MG-SIP machine needs to be on a power on state (the green triangle is displayed in the icon of the machine). If needed, right-click on the machine and choose Power -> Power On.

5 "mgsip login:" appears on the console screen.

```
mgsip login:
```

6 After starting the MG-SIP virtual machine, type "config" as login name and press Enter key.

```
mgsip login:config
```

7 The prompt "MG(SIP) >" appears on the screen.

```
mgsip login:config
MG(SIP)>
```

8 Execute the "show version" command to verify that there is not any mistake in the software version.

```
MG(SIP)> show version
Firmware Information   | SPNo     | Issue
-----------------------+------+--------------------
Base System Version    | -------  | VerX.X.XX ddd MMM
DD hh:mm:ss JST YYYY
SP-XXXX XXXXXX PROG-X |SP-XXXX   | Ver01.00.00.00
```

9 Execute the “set default” command to initialize the settings. Type “y” for “Are you sure? Y/N=”.

```
MG(SIP)> set default
Are you sure? Y/N=y
Config data default set.
```

10 Execute the “set config _template” command to collectively set the standard data. For details on the parameters to be set by this operation, see 4.3.4 MG-SIP for SIP Trunk config_template Data.

(1) Select the pattern of template for “Input template pattern. (0-255)”.
(2) Enter “y” for “Are you sure? Y/N=”.

```
MG(SIP)> set config_template
Input template pattern. (0-255)  : 1
Are you sure? Y/N=y
Selected template is set.
```

Note: When there is no template data for the entered number, “Not used” is displayed.

11 Execute the “set ipaddress” command to set an IP address of the MG-SIP.

(1) When using 2 ports, enter “n” for “Do you use one-port only? Y/N=”.

(2) Enter IP addresses and subnet masks of Ether1 and Ether2.

```
MG(SIP)> set ipaddress
Do you use one-port only? Y/N= n
Ether[1]
Input IP Address. (default=0.0.0.0)
          : 192. 168. 0. 16
Input Subnet mask. (default=0.0.0.0)
          : 255. 255. 255. 0
Ether[2]
Input IP Address. (default=0.0.0.0)
          : 192. 168. 0. 17
Input Subnet mask. (default=0.0.0.0)
          : 255. 255. 255. 0
```

Note:

- When using Ether1 (LAN side) only, enter "y" for “Do you use one-port only? Y/N=”.
- With “one-port only” enabled, Ethernet Port Redundancy function can be used. For an explanation of the Ethernet Port Redundancy function, see (28) ipaddress in the Configuration Commands section.
- When using PPPoE, be sure to use 2 ports. In this case, an IP address obtained from the PPPoE server is automatically set as Ether2 IP address.
- If you set a non-default port number, be careful not to choose the same number set in other port numbers (set by "set sip_rtp_port_no", "set ipx_rtp_port_no", "set sip_media_port_no", "set ipx_media_port_no", "set registration_port_no", "set signaling_port_no", "set pre_negotiation_port_no", "set sip_port_no" commands).
  When the same port number is set, a warning message is displayed.
  Set the routing information data through the “ipx_route” command as necessary.

12 Execute the “set drsaddress” command to set IP address of the SV9500 server LAN1.

(1) Enter an IP address of the SV9500 server LAN1 for "Input IP address. (default=0.0.0.0)".

(2) Enter a port number for "Input Port Number. (1024-65535 (default=3456)".

```
MG (SIP) > set drsaddress
[Primary DRS Setting]
Input IP address. (default=0.0.0.0)
          : 192.168.1.11
Input Port Number. (1024-65535 (default=3456)
          : 3456
[Secondary DRS Setting]
Input IP address. (default=0.0.0.0)
          : 0.0.0.0
Input Port Number. (1024-65535 (default=3456)
          : 3456
[Tertiary DRS Setting]
Input IP address.  (default=0.0.0.0)
          : 0.0.0.0
Input Port Number.  (1024-65535 (default=3456)
          : 3456
[Quaternary DRS Setting]
Input IP address.  (default=0.0.0.0)
          : 0.0.0.0
Input Port Nunber.  (1024-65535 (default=3456)
          : 3456
```

13 Execute the “set sip_server” command to set an IP address of the SIP server or FQDN.

(1) When "0" is entered in the above step, enter IP address and port number.

(2) When "1" is entered in the above step, enter FQDN and port number.

```
MG(SIP) > set sip_server
Select SIP server type.
0=IPAddress(default)
1=FQDN
Input:0
Input SIP server IP Address.(default=0.0.0.0)
                          :192.168.100.100
Input SIP server Port Number.
(1024-65535(default=5060)):5060
```

(3) Enter "0" or "1" for “Select SIP server Router type”.
When proxy server is a strict router, enter “0”. When using loose router, enter "1".

```
Select SIP server Router type.
0=Strict(default)
1=Loose
Input:0
```

(4) If rport (RFC3581) is used, enter “1” for the setting of rport (RFC3581) function.

```
Select the setting of rport(RFC3581) function.
0=disable (default)
1=enable
Input: 0
```

(5) Input a string that specifies the service provider in maximum of 128 characters.

```
Input Domain Name.(default=0, MAX128(strings))
```

Note: If you have set a character string to specify the service provider, the character string is used as the SIP domain name.

Note: Be sure not to enter a blank character to the end of the FQDN (with the Copy and Paste features of your personal computer), and be careful not to mistype a character. (“0”(zero) or “O” (alphabetical O), for example.)

14 Execute the “set keynumber” command to set a pilot number of the MG-SIP.

```
MG(SIP)> set keynumber
Input Keynumber.(default=0, MAX32(strings))
              :0
```

4.2.2 Restarting MG-SIP

Follow the steps below to restart the MG-SIP virtual machine.

1 Execute the reboot command to restart the MG-SIP after saving the configuration data.

(1) Enter “y” for “Do you want to save Config data? Y/N=”.

(2) Enter “y” for “Do you want to reboot MG(SIP)? Y/N=”.

```
MG(SIP)> reboot
Do you want to save Config data? Y/N=y
Do you want to reboot MG(SIP)? Y/N=y
Config data File write start.
Config data File write end.
MG(SIP)reboot start...
```

Note: Before selecting “y” to save the running configuration data to the flash memory, be sure to execute the following commands:

- set ipaddress (Assign the IP addresses for LAN network side and SIP network side)
- set drsaddress (Assign the IP address of the SV9500 server)
- set sip_server (Assign the IP address of the SIP proxy server)
- set keynumber (Assign a pilot number)

If any of these items have not been assigned when saving the running configuration data, the following message will be displayed to the unassigned item. When these messages are displayed, you can select if you want to set the default configuration data or not. If you select “y” here, the default values are applied to the configuration data.

```
The following setting commands are not perfect.
“set ipaddress” command.(IPX side)
“set ipaddress” command.(SIP side)
“set drsaddress” command.
“set sip_server” command.
“set keynumber” command.
So, Config data is made a default setup.
Is it all right? Y/N=y
```

- “set ipaddress” command.(IPX side)
  The IP address for the Telephony Server side of the MG-SIP is not set.
- “set ipaddress” command.(SIP side)
  The IP address for the SIP network side of the MG-SIP is not set.
- “set drsaddress” command.
  The IP address of the Telephony Server is not set.
- “set sip_server” command.
  The IP address of SIP server is not set.
- “set keynumber” command.
  The pilot number of the MG-SIP is not set.

2 After the MG-SIP is rebooted, the following message appears on the screen.

```
mgsip login:
```

4.3 Maintenance

4.3.1 Connecting Software-based MG-SIP to Virtual Console

Follow the steps below to connect the virtual console to the Software-based MG-SIP.

1 Launch the web browser from the maintenance PC and enter the IP address of vCSA (https://192.168.1.2:9443/). (192.168.1.2 is the example vCSA IP address).

Note: If VMware ESXi 6.0 is used, log in with vSphere Client, click **Inventory**, and continue this procedure from STEP4.

2 Check that the Caps Lock and the Num Lock lamps are not lit. Log in to vSphere Web Client with the user name and password set when creating the vCSA.

3 In the displayed **Home** screen, click **Hosts and Clusters**.

4 Right-click the MG-SIP virtual machine from the menu on the left side of the screen. Choose **Open Console**.

Note: The Software-based MG-SIP machine needs to be on a power on state (the green triangle is displayed in the icon of the machine). If needed, right-click on the machine and choose Power -> Power On.

5 "mgsip login:" appears on the console screen.

```
mgsip login:
```

6 After starting the Software-based MG-SIP virtual machine, type "config" as login name and press Enter key.

```
mgsip login:config
```

7 The prompt "MG (SIP)>" appears on the screen.

```
mgsip login:config
MG (SIP)>
```

Connecting Software-based MG-SIP to the virtual console has been completed.

4.3.2 Rebooting MG-SIP

Basically, when rebooting the MG-SIP virtual machine, use virtual console. When virtual console cannot be used, use vSphere Web Client.

Note: When restarting the MG-SIP using vSphere Web Client, the configuration data will not be saved. When the data saving is necessary, be sure to use virtual console to save the data.

Note: During restarting of the MG-SIP, an alarm “Stop Guest OS(MGSIP)” may be detected. In that case, after an elapse of one minute of the restarting, update the display of vSphere Web Client and confirm that the alarm disappears.

4.3.2.1 Rebooting MG-SIP with Virtual Console

1 Log in with config user.

2 Execute the reboot command and save the configuration data.
Reboot the MG-SIP.
(1) Enter “y” for “Do you want to save Config data? Y/N=”.
(2) Enter “y” for “Do you want to reboot MG(SIP)? Y/N=”.

```
MG(SIP)> reboot
Do you want to save Config data? Y/N=y
Do you want to reboot MG(SIP)? Y/N=y
Config data File write start.
Config data File write end.
MG(SIP)reboot start...
```

3 After the reboot, the following prompt appears.

```
mgsip login:
```

4 Enter “config” as login name and press the Enter key.

```
mgsip login : config
```

Check that the prompt “MG(SIP) >” appears on the screen.

```
mgsip login : config
MG(SIP)>
```

4.3.2.2 Rebooting MG-SIP with vSphere Web Client

1. Launch the web browser from the maintenance PC and enter the IP address of vCSA (https://192.168.1.2:9443/). (192.168.1.2 is the example vCSA IP address).

   Note: If VMware ESXi 6.0 is used, log in with vSphere Client, click **Inventory**, and continue this procedure from STEP4.

2. Check that the Caps Lock and the Num Lock lamps are not lit. Log in to vSphere Web Client with the user name and password set when creating the vCSA.

3. In the displayed **Home** screen, click **Hosts and Clusters**.

4. Right-click the MG-SIP virtual machine from the menu on the left side of the screen. Choose **Power** -> **Restart Guest OS**.

5. Transmit a Ping command from the maintenance console to IP addresses of Ether1 and Ether2 of the MG-SIP. Confirm its response.

6. Right-click the MG-SIP virtual machine from the menu on the left side of the screen. Choose **Open Console**.

7. After the reboot, the following prompt appears.

```
mgsip login:
```

8. Enter “config” as login name and press the Enter key.

```
mgsip login : config
```

   Check that the prompt “MG(SIP) >” appears on the screen.

```
mgsip login : config
MG(SIP)>
```

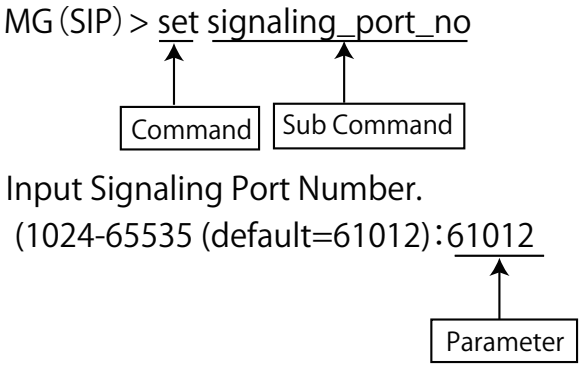
4.3.3 Configuration Commands

Configuration commands are basically used to change the default settings. Therefore, change the settings only where it is necessary.

[Commands]

A command interface prompt is displayed on a screen waiting for a user input. When a user inputs a character string, the system analyzes the input data, and displays a reply message. Inputting commands and sub commands are necessary, but whether inputting a parameter is necessary or not depends on commands. (Some commands do not have any parameters.) The following figure shows an example of inputting a command, a sub command, and a parameter.

Note: If you press CTRL + S on the Console, you may not be able to input any more character strings on the screen. In that case, press CTRL + Q to go back to the prompt.



Commands other than “ping” cannot be set within a single line; use interactive mode to input values. The following figure shows an example of data setting using the interactive mode.

```
MG(SIP)> set drs_qos

Input type:(1=IP Precedence/2=DiffServ/
3=ToS):1

Input following parameters.

Precedence (default=5, 0-7):5

Delay (default=0, 0/1):0

Throughput (default=0, 0/1):0

Reliability (default=0, 0/1):0

Cost (default=0, 0/1):0
```

When "IP PRECEDENCE (=1)" is selected:

Specify the precedence in an IP network (Default: 5). 0-7 (Low - High)

Specify the low delay priority in an IP network.
0: Not specified (Default)
1: Specified

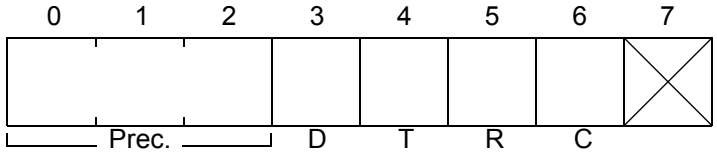
Specify the throughput priority in an IP network.
0: Not specified (Default)
1: Specified

Specify the reliability in an IP network.
0: Not specified (Default)
1: Specified

Specify the low cost priority in an IP network.
0: Not specified (Default)
1: Specified

* The example of the screen below the above example is omitted here.

Note: IP Precedence - ToS field is allocated as shown below.



Prec.=Precedence (3bits)
D=Delay (1bit)
T=Throughput (1bit)
R=Reliability (1bit)
C=Cost (1bit)

4.3.3.1 List of Configuration Console Commands

Note: DRS (Device Registration Server) used in this section refers to a control function of the Telephony Server. Set the IP address of the Telephony Server (TP).

R: Required
C: Not required, but configurable

set: Commands to Set Configuration Data

Note: Consider the following points when setting the configuration data.

- If you go out of the configuration mode by using “logout” command without saving the setting information using “reboot” command, the changed settings are discarded. To save the settings, execute “reboot” command, and exit the configuration mode.
- When you input a command, the current setting is displayed. If you change the setting, the changed data is displayed. For “ipx_route” and “sip_route” commands, the changed settings and “Are you sure?” message are displayed.
- Pressing the Enter key can skip each item.

	SUB COMMAND	MUST?	FUNCTION
1	183rbt	C	Assigns whether to enable/disable local RBT when 183 message without SDP is received.
2	184toprivacy	C	Assigns whether to display/block the Caller ID to SIP network when dialing 184/186.
3	another_keynumber	C	Assigns additional three pilot numbers other than the one registered by “set keynumber” command.
4	auth	C	Assigns Digest authentication information.
5	auth_header	C	Assigns whether to enable/disable the cache function of authentication header.
6	call_hold	C	Assigns whether to enable/disable MG Based Call Retention.
7	call_id_relay	C	Assign Call-ID notification function.
8	cause_table	C	Assigns the error translation table.
9	cc_convert	C	Assigns calling party’s country code display conversion feature.
10	cdn_pattern	C	Assigns called number pattern.
11	check_number	C	Assigns limit to the number of digits for calling/called party number.
12	codec_change	C	Assigns Codec Change function and G.711 Fax renegotiation.
13	config_template	C	Assigns the batch settings of Multipoint feature.
14	country_code	C	Assigns a country code.
15	cpn_pattern	C	Assigns how to obtain cpn (calling party number)
16	default	C	Specifies default settings of the configuration.
17	dnsaddress	C	Assigns the DNS IP address.
18	dns_option	C	Assigns the Optional Data for DNS server.
19	domain	C	Specifies the DNS domain name.

	SUB COMMAND	MUST?	FUNCTION
20	drsaddress	R	Assigns the IP address and the port number of DRS server.
21	drs_qos	C	Specifies the DRS ToS.
22	dtmf_mode	C	Assigns a type of DTMF relay mode on the SIP network.
23	enc	C	Enables or disables the RTP encrypting mode on Telephony Server network. **Note 3**
24	h245_base_port_no	C	Assigns the base port number for H.245 TCP server.
25	hc_alarm	C	Specifies the alarm transmission destination.
26	hc_timer	C	Assigns the Health Check timer value.
27	interface	C	Assigns the operation speed and operation mode of an interface.
28	ipaddress	R	Assigns the IP address and the subnet mask to the port.
29	ip_version	C	Assigns the SIP side IP version.
30	ipx_media_port_no	C	Assigns the Telephony Server network side media port number. **Note 2**
31	ipx_route	C	Assigns the route information in the Telephony Server network.
32	ipx_rtp_port_no	C	Assigns the RTP base port number for the Telephony Server network.
33	keynumber	R	Assigns the pilot number of MG-SIP.
34	multi_regist	C	Assigns the registration function per number.
35	multisession **Note 1**	C	Assigns Multi-path Switch.
36	musictype	C	Assigns the type of music to be sent from MG-SIP.
37	name_display	C	Enable/disable Name Display service.
38	nataddress **Note 2**	C	Assigns the global IP address for NAT.
39	no_media_code	C	Assigns the SIP Error Response code.
40	out_of_area_code	C	Assigns the out-of-area error response.
41	ppi_to_pai	C	Assigns the PAID transmission function.
42	prack	C	Assigns Provisional Response Acknowledgment (PRACK) information (RFC3262).
43	pre_negotia-tion_port_no	C	Assigns the UDP port receiving packets for voice control path.
44	privacy_pattern	C	Assigns the privacy pattern.
45	registration_port_no	C	Assigns the UDP port number that receives DRS packets.
46	reg_interval	C	Assigns the waiting time to retry after registration failure.
47	response_table	C	Assigns response table selection.
48	rfc2833_pass **Note 2**	C	Assigns enable/disable RFC2833 packet transparency feature.
49	rtp_pathon	C	Assigns Path-on function by 183 Progress after receiving 180 Ringing.
50	rtp_qos	C	Specifies the RTP (on SIP network) ToS value.
51	sdp_style	C	Assigns the SDP receive setting for multiple “m” lines.
52	self_sip_domain	C	Assigns SIP domain name for MG-SIP.
53	session_timer	C	Assigns session timer function.

	SUB COMMAND	MUST?	FUNCTION
54	signaling_port_no	C	Assigns the UDP port number that receives control signal packets.
55	sip_accfilter	C	Assigns SIP Access Filter and SIP Access Filter mask.
56	sip_media_port_no	C	Assigns the SIP network side media port number. **Note 2**
57	sip_port_no	C	Specifies the port number that receives SIP messages.
58	sip_qos	C	Specifies the TOS value for SIP signaling.
59	sip_register	C	Assigns the information of the SIP registrar.
60	sip_route	C	Assigns the route information of SIP network.
61	sip_rtp_port_no	C	Specifies the RTP base port number of SIP network.
62	sip_server	R	Assigns SIP server information.
63	sip_tel_service	C	Assigns the setting of additional services.
64	sip_transport	C	Specifies a SIP transport protocol.
65	slipresp	C	Assigns error response codes used when bypassing a SIP server.
66	softdsp	C	Assigns the setting of A-law/μ-law conversion feature and PAD value.
67	update	C	Assigns the setting of update method.

Note 1: Required to set Silent Monitor (Multi-Path Monitor) Connection in the ACD system. ACD features can be used only when the MG-SIP registers to the SV9500 Appliance Model (FP95-112 V2 or later version).

Note 2: This command is available for MGSIPVM PROG-E.

Note 3: Available for SP-4085 MGSIPVM PROG-E Issue 3.0 or later.

The following command is required when setting Silent Monitor (Multi-Path Monitor) Connection in the ACD system.

1	multisession	C	Assigns Multi-path Switch.

show: Commands to Display the Contents of Configuration Data

	SUB COMMAND	MUST?	FUNCTION
1	arp	-	Displays the ARP table.
2	config	-	Displays the configuration data.
3	interface	-	Displays the link and setting state of Ether connection.
4	version	-	Displays the firmware version installed in MG-SIP.
5	route	-	Displays the Route table.
6	status	-	Displays status of the port and the registration.

Download: Command to Download

	SUB COMMAND	MUST?	FUNCTION
1	-	-	Downloads data from the specified IP address.

exit or logout: Command to Exit the Configuration Mode

	SUB COMMAND	MUST?	FUNCTION
1	-	-	Exits the configuration mode.

reboot: Command to Reboot MG-SIP

	SUB COMMAND	MUST?	FUNCTION
1	-	-	Restarts MG-SIP and saves the settings.

ping: Command to Use the “ping” for IPv4 address

	SUB COMMAND	MUST?	FUNCTION
1	parameter (enter the ping destination IPv4 address)	-	“ping” command for IPv4 address

ping6: Command to Use the “ping” for IPv6 address

	SUB COMMAND	MUST?	FUNCTION
1	parameter (enter the ping destination IPv6 address)	-	“ping” command for IPv6 address

traceroute: Command to Use the “traceroute”

	SUB COMMAND	MUST?	FUNCTION
1	-	-	“traceroute” command

help or ?: Command to Use the Command Help

	SUB COMMAND	MUST?	FUNCTION
1	-	-	“help” command

4.3.3.2 set Command

(1) 183rbt

Setting of local RBT connection select function when receiving 183 message (w/o SDP)

This command is used to enable/disable the connection of local RBT when 183 message without SDP is received.

[Setting Example]

```
MG(SIP) > set 183rbt

Select mode of RBT Addition when MG(SIP)
receives 183 without SDP.
 0=enable(default)
 1=disable
Input:0
```

Enter 0 or 1 (Default=0).
0: Enable
1: Disable

Note: The conditions of this command are as follows.
- Assign this command adjusting to the specifications on the SIP network where MG-SIP connects.
- Normally this command is not required to be changed.

(2) 184toprivacy

Setting of switching Caller ID display/blocking to SIP network function when dialing 184/186

Note: This command is available for Japan only.

This command is used to set the function to delete 184/186 by MG-SIP when dialing 184/186. When this setting is enabled, if a user adds 184/186 at the beginning of the dialing numbers, MG-SIP deletes the 184 (non-Caller ID) or 186 (Caller ID) from the dialed numbers, and transmits the message to SIP network.

[Setting Example]

```
MG(SIP) > set 184toprivacy

Select privacy function of 184.
 0=disable(default)
 1=Pattern 1
 2=Pattern 2
Input:0
```

0: Switching is disabled. (default)
1: Switching is enabled. (Pattern 1)
2: Switching is enabled. (Pattern 2)

When Pattern 1 is set: Performs forced non-Caller ID for 184, forced Caller ID for 186. (The first three digits of the dialed numbers (184/186) are to be deleted.)

When Pattern 2 is set: Performs forced non-Caller ID for 184, forced Caller ID for 186. (The first three digits of the dialed numbers (184/186) are not to be deleted.)

Note: Assign this command adjusting to the specifications on the SIP network where connects.

(3) another_keynumber

Setting of additional pilot numbers

Assigns additional three pilot numbers to the SIP server other than the one registered by "set keynumber" command.

[Setting Example]

```
MG(SIP) > set another_keynumber

Input Another Keynumber 1.(default=0,
MAX32(strings))
                          :1000
Input Another Keynumber 2.(default=0,
MAX32(strings))
                          :2000
Input Another Keynumber 3.(default=0,
MAX32(strings))
                          :05011112222
```

Numbers to be newly added. (default: 0)

Note: The conditions of this command are as follows.

- Unique number to be assigned for each of Another keynumber 1/2/3. Assign value=0 (default) for parameter when nothing is to be assigned.
- Assign this command adjusting to the specifications on the SIP network where MG-SIP connects.
- Normally this command is not required to be changed.

(4) auth

Setting of Digest authentication information

Assigns User ID/password for HTTP-Digest authentication.

[Setting Example]

```
MG(SIP) > set auth

Input User ID.(default=0, MAX32(strings))
           :0

Input Password.(default=0, MAX32(strings))
           :0
```

User ID (Max. 32bytes, Default: 0)

Password (Max. 32bytes, Default: 0)

Note: Assign this command adjusting to the specifications on the SIP network where MG-SIP connects.

(5) auth_header

Setting to enable/disable cache function of authentication header

The command is used to assign whether to add cache information to authentication header of request message in updating ACK and REGISTER for re-INVITE/200 OK.

[Setting Example]

```
MG(SIP) > set auth_header

Select Authorization Header Cache function.
 0=enable(default)
 1=disable
Input:0
```

0: Cached authentication information is added. (default)
1: Cached authentication information is not added.

Note: Assign this command adjusting to the specifications on the SIP network where MG-SIP connects.

(6) call_hold

Setting MG Based Call Retention

The command is used to specify whether to enable MG Based Call Retention.

[Setting Example]

```
MG(SIP) > set call_hold

Select the setting of Call Hold function.
 0=disable(default)
 1=enable
Input:1

Input RTP detect timer value.(sec)
(3-32 (default=3)):3

Input SIP Error Response code to reject new
session.
(400-606 (default=488)):488
```

0: MG Based Call Retention is disabled. (Default)
1: MG Based Call Retention is enabled.

RTP detect timer (seconds)
Range: 3-32 seconds (Default: 3 seconds)

Set the error response code to reject a session by a new call while the MG based call retention is in progress.
(400 to 606, Default: 488) **Note 1**

Note: RTP detect timer does not work on the media port for Video/T.38 Fax when the MG Based Call Retention is enabled. If the packet for Video/T.38 is canceled during the Calling Keep, the Calling Keep does not terminate the processing.

Note 1: When an Initial-INVITE is received from the SIP network side while a call is retained, an error response 488 (Not Acceptable Here) is sent in the default setting.

(7) call_id_relay

Setting to enable/disable Call-ID Header information of SIP notification function

The command is used to specify whether to send Call-ID Header information of SIP to SV9500.

[Setting Example]

```
MG(SIP) > set call_id_relay

Select function of Call-ID relay mode.
 0=disable(default)
 1=enable
Input:0
```

0: Call-ID is not sent (default).
1: Call-ID is sent to SV9500.

Note: Assign this command adjusting to the specifications on the SIP network where MG-SIP connects.

(8) cause_table

Setting of error translation table select function

The command is used to select the translation table of error cause to be sent to LAN received from SIP network as error response.

[Setting Example]

```
MG(SIP) > set cause_table


 Select Cause table(SIP Error Response to
 Error Cause).

  0=normal(default)
  1=alternate routing
  2=customized pattern1
  3=Route Advance

 Input:3
```

Select the error translation table.
0 = Normal table (Default)
1 = Alternate routing table
2 = This setting is prohibited.
3 = Route Advance

Note: The conditions of this command are as follows.

- Assign this command adjusting to the specifications on the SIP network where MG-SIP connects.
- Normally this command is not required to be changed.

(9) cc_convert

Setting of calling party's country code display conversion feature

When this feature is available, conversion will take place as in the following table.

Direction of Call termination/ origination	Intended Number	Conversion Feature
Call termination via SIP	Calling party	Convert to "0" if first numbers are "81" or "+81"
Call termination via SIP	Calling party	Add "0" to first number if number is 8 or more digits
Call origination via MG-SIP	Calling party	Convert to "0" if first number is "81"

[Setting Example]

```
MG(SIP) > set cc_convert

Select Country Code Convert function.
 0=disable(default)
 1=enable
Input: 0
```

0: Disable (default)
1: Enable

Note: Assign this command adjusting to the specifications on the SIP network where MG-SIP connects.

(10) cdn_pattern

Setting of a way of obtaining information for cdn (called number)

The command is used to assign the way of obtaining information for called number from SIP network.

- When this command is enabled, called number is obtained according to the priority order shown in the table below:

Selected Parameter		Order of priority				
		1	2	3	4	5
0	To	P-N-Dest-Discern	To (userinfo)	Request-URI (userinfo)	-	-
1	Request-URI (isub)	P-N-Dest-Discern	Request-URI (isub)	Request-URI (userinfo)	To (userinfo)	-
2	Request-URI	P-N-Dest-Discern	Request-URI (userinfo)	To (userinfo)	-	-
3	P-Called-Party-ID	P-Called-Party-ID (userinfo)	To (userinfo)	Request-URI (userinfo)	P-N-Dest-Discern	-
4	P-Called-Party-ID (isub)	P-Called-Party-ID (isub)	P-Called-Party-ID (userinfo)	To (userinfo)	Request-URI (userinfo)	P-N-Dest-Discern

[Setting Example]

```
MG(SIP) > set cdn_pattern

Select Called Party Number to which you give
priority.
 0=To[userinfo](default)
 1=Request-URI[isub]
 2=Request-URI[userinfo]
 3=P-Called-Party-ID[userinfo]
 4=P-Called-Party-ID[isub]
Input:0
```

0: userinfo part of the To header is given priority. (Default)
1: isub of Request-URI is given priority.
2: userinfo part of Request-URI is given priority.
3: userinfo part of P-Called-Party-ID is given priority.
4: isub of P-Called-Party-ID is given priority.

Note: Assign this command adjusting to the specifications on the SIP network where MG-SIP connects.

(11) check_number

Setting a limit to the letters and numerals that can be used for calling/called party number

This command is used to assign a function that permits only numerals for calling/called party number sent via the Telephony Server network.

[Setting Example]

```
MG(SIP) > set check_number

Select the setting of function to delete
[#] in telephone-number.
 0=disable(default)
 1=enable
Input:0
```

0: Disable (default)
1: Limit to numerals only

Note: Assign this command adjusting to the specifications on the SIP network where MG-SIP connects.

(12) codec_change

Setting of Codec Change function and G.711 Fax renegotiation

This command is used to enable Codec Change function and G.711 Fax renegotiation.
Codec Change function enables a call to be retained when a forwarding call is placed to a destination located in the SIP network and the payload type is different between an intermediate station and the destination.
G.711 Fax renegotiation enables a called party to receive a facsimile with Fax Pass Through when communication is changed over to a FAX communication while a call is in progress with G.729a.

[Setting Example]

```
MG(SIP) > set codec_change

Select the setting of Codec Change
function.
 0=disable (default)
 1=enable
Input: 1

Select the setting of G711 Fax
renegotiation.
 0=disable (default)
 1=enable
Input: 1
```

Enable/disable the Codec Change function.
0 = Disable (default)
1 = Enable

Enable/disable the G711 Fax renegotiation.
0 = Disable (default)
1 = Enable

Note: The conditions of this command are as follows.

- In the Telephony Server side, a system data setting (ASYDL, System Data 1, Index 1144, Bit 6=1 (Codec Change function is in service) is required to enable this function.
- In the Telephony Server side, payload type and payload size need to be assigned by AIVCL/AIVCN, AMGVL/AMGVN, and ARTI/ARTIN commands.
- Also specify G.711 (fixed) as FXPT (Payload Type for IP FAX) and specify the payload size equal to that of voice data as FXPS (Payload Size for IP FAX). Then assign the FXPT and FXPS data to AIVCL/AIVCN and AMGVL/AMGVN commands.
- Payload size cannot be converted in MG-SIP. When an RTP packet whose payload size is 20 ms is received from the Telephony Server network, the packet is transferred to the SIP network without converting the payload size. Same behavior applies to the RTP packet received from the SIP network.
- To use the following methods, enable commands shown below.

  - [ReINVITE] method: enable “set sip_tel_service” command
  - [UPDATE] method: enable “set sip_tel_service” and “set update” commands

(13) config_template

Batch Setting of MG-SIP

This command is used to assign the batch setting of MG-SIP. For details of each parameter, refer to "MG-SIP for SIP Trunk config_template Data".

[Setting Example]

```
MG(SIP) > set config_template
Input template pattern. (0-255)  : 2
```

Enter the template pattern number.

(14) country_code

Setting of a country code

This command is used to set a country code on MG-SIP.

[Setting Example]

```
MG(SIP) > set country_code
Input Country Code.
  (0-255 (default=0)):0(AUTO)
```

Set a country code.

0 = AUTO (Follow the Telephony Server setting)
1 = JP (Japan)
2 = US (North America)
3 = AU (Australia)
4 = OTHER (Other countries)
5 = HK (Hong Kong)
6 = MY (Malaysia)
7 = SG (Singapore)
8 = GB (England)
9 = MX (Mexico)
10 = TW (Taiwan)
11 = NZ (New Zealand)
12 = KR (Korea)
13 = BR (Brazil)
14 = CN (China)
15 = TH (Thailand)
16 = TH [EGAT] (Thailand (EGAT))
17 = LK (Sri Lanka)
200 = DE (Germany)
201 = IT (Italy)
202 = NL (Netherlands)
204 = DK (Denmark)
205 = SE (Sweden)

211 = ES (Spain)
212 = AT (Austria)
213 = BE (Belgium)
214 = GB [EMEA] (England [for EMEA])
215 = GR (Greece)
216 = SZ (Switzerland)
217 = ZA (South Africa)
Other values = xx (Not used)

Note: Inband Tone of MG-SIP can be changed by using the following System Data (ASYDL, SYS1, Index 811). To change the Inband Tone of MG-SIP, set the configuration command "set country_code" to "0".

(15) cpn_pattern

Setting of a way of obtaining information for cpn (calling party number)

This command is used to assign how to obtain cpn (calling party number), and to change the priority of obtaining calling party number when a call terminates via SIP network.

When this command is enabled, calling party number is obtained according to the priority order shown in the table below:

- The following shows the method of obtaining cpn when this feature is available.

Selected Parameter		Order of priority		
		1	2	3
0	Displayname	Displayname	Userinfo	-
1	Userinfo	Userinfo	Displayname	-
2	Anonymous	Userinfo (Anonymous)	Userinfo	Displayname
3	P-Asserted-ID	P-Asserted-ID	Displayname	Userinfo

[Setting Example]

```
MG(SIP) > set cpn_pattern

Select Calling Party Number to which you
give priority.
 0=DisplayName(default)
 1=Userinfo
 2=Anonymous
 3=P-Asserted-ID
Input:0
```

0: Display name is given priority. (Default)
1: Userinfo is given priority.
2: When Anonymous is detected in Userinfo, cpn is handled as blocked, disregarding the second priority and later.
3: P-Asserted-ID is given priority.

Note: The conditions of this command are as follows.

- Assign this command adjusting to the specifications on the SIP network where MG-SIP connects.
- Select 2 when the caller ID blocking is judged by the userinfo in From header on the SIP network side specification.
  e.g.) From: “01234567” <sip:anonymous@anonymous.invalid>
- Do not select 2 when the caller ID blocking is assigned by Displayname only on the SIP network side.
  e.g.) From: “Anonymous” <sip:01234567@xxx.com> In this case, the cpn is informed when 2 is selected.
- Numbers from 0 to 9, *, or # can only be obtained as a calling party number. When any other characters are contained in the calling party number, the order of priority will shift to the next precedence.
  However, if any characters other than the ones indicated above are detected in Displayname, the next and later priority will be disregarded and the cpn will be handled as blocked.
  e.g.) From: “0123ABC” <sip:01234567@xxx.com> In this case, the cpn will be handled as blocked when 0 is selected.

(16) default

Setting the default values to the configuration data

The command is used to set back to the default setting of MG-SIP configuration. Make sure to execute this command when updating firmware to a different firmware name (SP-XXXX).

[Setting Example]

```
MG(SIP) > set default

 Are you sure? Y/N=y



 Config data default set.

MG(SIP)>
```

Note: When other than “y” is selected, the following message is displayed.

Default setting command was interrupted.

Note: Normally this command is not required to be used.

(17) dnsaddress

Setting of the IP address of DNS server

This command is used to specify the DNS IP address to resolve an address by DNS server.

[Setting Example]

[IPv6]

```
MG(SIP) > set dnsaddress
```

```
Input DNS IP Address.(default=::)
                :2001:db8::820
```

Specify DNS IP address. (Default: ::)

[IPv4]

```
MG(SIP) > set dnsaddress
Input DNS IP Address.(default=0.0.0.0)
                :0.0.0.0
```

Specify DNS IP address. (Default: 0.0.0.0)

Note: You do not have to change this command if you do not use DNS server.

(18) dns_option

Setting of the Optional Data for DNS server

This command is used to enable multiple SIP servers to be supported by DNS server. When IP addresses of multiple SIP servers are obtained by A record lookup, an alternative route can be used for transmission. NAPTR lookup (RFC3263) is also enabled.

[Setting Example]

```
MG(SIP) > set dns_option
Select DNS type
 0=A Record resolve(single IP
Address)(default)
 1=A Record resolve(multi IP Address)
 2=Locating SIP servers function(RFC3263)
Input: 0
```

Select DNS type. (Default: 0/A Record resolve (single IP Address))

When Locating SIP servers function (RFC3263) (=2) is selected

```
MG(SIP) > set dns_option
Select DNS type
 0=A Record resolve(single IP
Address)(default)
 1=A Record resolve(multi IP Address)
 2=Locating SIP servers function(RFC3263)
Input: 2
Select the setting of DNS cache
 0=enable(default)
 1=disable
Input: 1
```

Select DNS type. (Default: 0/A Record resolve (single IP Address))

Select the setting of DNS cache. (Default: 0/enable)

Note: The conditions of this command are as follows.
- The cache retention time length is 60 seconds.
- Available transport protocols are TCP and UDP.
- During NAPTR lookup, SIP processing stops.
- This function takes priority over transport protocol (TCP/UDP selection) configured with "set sip_transport" command.
- Up to four servers can be routed in an alternate routing function by A/SRV record.
- You do not have to change this command if you do not use DNS server.

(19) domain

Setting of DNS domain name

This command is used to specify the domain name of MG-SIP.

[Setting Example]

```
MG(SIP) > set domain

Input Domain Name.(default=0,
MAX128(strings))
                :nec.com
```

Specify the domain name. (Default: 0/Maximum: 128 bytes)

Note: The conditions of this command are as follows.
- Normally this command is not required to be changed.
- To set SIP domain, change the domain name from the “domain name” parameter of “set sip_server” command or “set self_sip_domain” command.

(20) drsaddress

Setting of IP address and port number of DRS server

This command is used to assign IP address and port number of DRS server.

[Setting Example]

```
MG(SIP) > set drsaddress

[Primary DRS Setting]

 Input IP Address.(default=0.0.0.0)
           :172.16.253.1

 Input Port Number.(1024-65535
(default=3456))
           :3456

[Secondary DRS Setting]

 Input IP Address.(default=0.0.0.0)
           :172.16.253.2
```

Setting Primary DRS;

IP address of DRS server
(Default: 0.0.0.0)

UDP Port number of DRS server
(Default: 3456)

Setting Secondary DRS;

IP address of DRS server
(Default: 0.0.0.0)

```
 Input Port Number.(1024-65535
(default=3456))
           :3456
[Tertiary DRS Setting]
 Input IP Address.(default=0.0.0.0)
           :172.16.253.3
 Input Port Number.(1024-65535
(default=3456))
           :3456
[Quaternary DRS Setting]
 Input IP Address.(default=0.0.0.0)
           :172.16.253.4
 Input Port Number.(1024-65535
(default=3456))
           :3456
```

UDP Port number of DRS server
(Default: 3456)

Setting Tertiary DRS;

IP address of DRS server
(Default: 0.0.0.0)

UDP Port number of DRS server
(Default: 3456)

Setting Quaternary DRS;

IP address of DRS server
(Default: 0.0.0.0)

UDP Port number of DRS server
(Default: 3456)

(21) drs_qos

Setting of ToS value of DRS server

This command is used to specify the ToS value of IP packets to be sent to DRS server.

[Setting Example]

```
MG(SIP) > set drs_qos
Input type: (1=IP Precedence/2=DiffServ/
3=ToS):1
Input following parameters.
Precedence(default=5, 0-7):5

Delay(default=0, 0/1):0



Throughput(default=0, 0/1):0


```

When IP Precedence (=1) is selected:

Specify the precedence in an IP network (Default: 5). 0-7 (Low - High)

Specify the low delay priority in an IP network.
0: Not specified (Default)
1: Specified

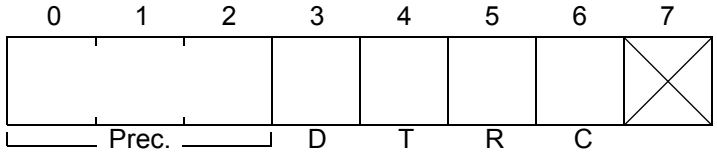
Specify the throughput priority in an IP network.
0: Not specified (Default)
1: Specified

```
Reliability(default=0, 0/1):0


Cost(default=0, 0/1):0
```

Specify the reliability in an IP network.
0: Not specified (Default)
1: Specified

Specify the low cost priority in an IP network.
0: Not specified (Default)
1: Specified

Note: IP Precedence - ToS field is allocated as shown below.



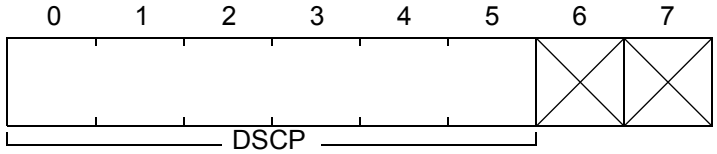
Prec.=PRECEDENCE(3bits)
D=Delay(1bit)
T=Throughput(1bit)
R=Reliability(1bit)
C=Cost(1bit)

```
MG(SIP) > set drs_qos

Input type: (1=IP Precedence/2=DiffServ/
3=ToS): 2

Input DSCP value.
(0-63 default=40):40
```

When DiffServ (=2) is selected:

Specify the service code point of DiffServ (default: 40).

Note: DiffServ - ToS field is allocated as shown below.



DSCP=Differentiated Service Code Point(6bits)

```
MG(SIP) > set drs_qos

Input type: (1=IP Precedence/2=DiffServ/
3=ToS): 3

Input ToS value with HEX format.
(00-FE(default=A0)):a0
```

When ToS (=3) is selected:

Specify the ToS field (default: a0).

Note: The conditions of this command are as follows.
- Pressing the Enter key can skip the item, with an exception of “Input type”. Be sure to input a value to “Input type.”
- Normally this command is not required to be changed.
- If you set “1” to the least significant bit, an error message “Please input an even number value.” is displayed.

(22) dtmf_mode

Setting of DTMF relay system (SIP network)

This command is used to specify the DTMF relay system in SIP network. MG-SIP supports Out-Band (RFC2833) and In-Band (G.711 data transmission as voice data). Negotiation, Out-Band, or In-Band can be assigned.

Note: DTMF relay method on the Telephony Server network side is automatically set according to the one on the MG-SIP network side, as follows:

DTMF relay system on the SIP network side	DTMF relay system on the Telephony Server network side	Remarks
RFC2833 (out-band)	Proprietary (out-band)	Conversions between "RTP (DTMF: RFC2833) packets on SIP network" and "UDP (DTMF: Proprietary) packets on Telephony Server network"
G.711 PassThrough (in-band)	G.711 PassThrough (in-band)	Conversions between "RTP packets on SIP network" and "RTP packets on Telephony Server network"

[Setting Example]

- When Negotiation is selected:

```
MG(SIP) > set dtmf_mode

Select DTMF Mode.
 0=Negotiation(default)
 1=Out-Band
 2=In-Band
Input:0

Input DTMF Duration value.(ms)
(50-240(default=120)):120

Input DTMF Pause value.(ms)
(30-240(default=100)):100

Input Payload type(RFC2833).
(96-127(default=101)):101
```

0: Negotiation (Default)
1: Out-Band (fixed)
2: In-Band (fixed)

Specify DTMF Duration.
(50 to 240ms/Default: 120ms)

Specify DTMF Pause.
(30 to 240ms/Default: 100ms)

Specify Payload type.
(96 to 127/Default: 101)

- When Out-Band is selected:

```
MG(SIP) > set dtmf_mode

Select DTMF Mode.
 0=Negotiation(default)
 1=Out-Band
 2=In-Band
Input:1

Input DTMF Duration value.(ms)
(50-240(default=120)):120

Input DTMF Pause value.(ms)
(30-240(default=100)):100

Input Payload type(RFC2833).
(96-127(default=101)):101
```

0: Negotiation (Default)
1: Out-Band (fixed)
2: In-Band (fixed)

Specify DTMF Duration.
(50 to 240ms/Default: 120ms)

Specify DTMF Pause.
(30 to 240ms/Default: 100ms)

Specify Payload type.
(96 to 127/Default: 101)

- When In-Band is selected:

```
MG(SIP) > set dtmf_mode

Select DTMF Mode.
 0=Negotiation(default)
 1=Out-Band
 2=In-Band
Input:2

Input DTMF Duration value.(ms)
(50-240(default=120)):120

Input DTMF Pause value.(ms)
(30-240(default=100)):100
```

0: Negotiation (Default)
1: Out-Band (fixed)
2: In-Band (fixed)

Specify DTMF Duration.
(50 to 240ms/Default: 120ms)

Specify DTMF Pause.
(30 to 240ms/Default: 100ms)

Note: The conditions of this command are as follows:
- Assign this command adjusting to the specifications on the SIP network where MG-SIP connects.
- At DTMF Mode Negotiation/Out-Band, the payload type 103 cannot be used.
- Note that the sum of DTMF Duration and DTMF Pause values must be specified more than 120ms. If not, the following error message is displayed.

```
Input parameter error,
 reason [DTMF Duration + DTMF Pause<Min120ms]
```

(23) enc

Setting of RTP encrypting mode on Telephony Server network

This command is used to specify the RTP encrypting mode on Telephony Server network.

[Setting Example]

```
MG(SIP) > set enc

Select the setting of IPX side RTP encrypting
mode.
 0 = disable (default)
 1 = enable
Input : 1
```

Assign the RTP encrypting mode on Telephony Server network.
0 = Disable the RTP encrypting mode on Telephony Server network. (default)
1 = Enable the RTP encrypting mode on Telephony Server network.

Note: This command is available for SP-4085 MGSIPVM PROG-E Issue 3.0 or later.

(24) h245_base_port_no

Setting of the base port number for H.245 TCP server

This command is used to specify the port number for H.245 TCP server.

[Setting Example]

```
MG(SIP) > set h245_base_port_no

Input H245 base Port Number.
(1024-64511(default=40000)):40000
```

Assign the port number for H.245 TCP server.
(Default: 40000)
(receiving side of MG-SIP)

Note: Normally this command is not required to be changed.

(25) hc_alarm

Setting of the alarm transmission destination

This command is used to set the alarm function which is activated to send a warning tone when a Health Check timeout occurs.

[Setting Example]

```
MG(SIP) > set hc_alarm

Select H/C Alarm type.
 0=IPX and SIP side enable(default)
 1=IPX side enable
 2=SIP side enable
 3=disable
Input:0
```

0: Warning tone is sent to the Telephony Server and SIP sides (Default).
1: Warning tone is sent to the Telephony Server side only.
2: Warning tone is sent to SIP side only.
3: disable

Note: Normally this command is not required to be changed.

(26) hc_timer

Setting of Health Check timer value

This command is used to specify the Health Check time-out value.

[Setting Example]

```
MG(SIP) > set hc_timer

Input H/C timer value.(sec)
(130-65535(default=240)):240
```

Assign the Health Check timer value (Default: 240 seconds).

Note: Normally this command is not required to be changed.

(27) interface

Setting of the operation speed and operation mode of an interface

This command is used to assign the Ether speed and the duplex type to each port on MG-SIP.

[Setting Example]

```
MG(SIP) > set interface

Select Ether[1] speed.
 0=AUTO(default)
 1=10M
 2=100M
 3=1000M
Input:0

Select Ether[2] speed.
 0=AUTO(default)
 1=10M
 2=100M
 3=1000M
Input:1

Select Ether[2] duplex.
 1=Half
 2=Full
Input:2
```

Assign an Ether speed type to Ether 1.(Example: when AUTO is set.)
0=Automatic Negotiation (Default)
1=10 Mbps (fixed)
2=100Mbps (fixed)
3=1000Mbps (fixed) **Note 3**
Select "0". **Note 2**

Assign an Ether speed type to Ether 2.(Example: when 100M/Full is set.)
0=Automatic Negotiation (Default)
1=10Mbps (fixed)
2=100Mbps (fixed)
3=1000Mbps (fixed) **Note 3**
Select "1".

Assign a duplex type to Ether 1 and Ether 2.
1=Half Duplex
2=Full Duplex
Select "2".

Note 2: When "Automatic Negotiation" is selected, "AUTO" is automatically applied to the interface. Therefore, this command line will not appear for interface that is specified as "Automatic Negotiation".

Note 3: When100Mbps (fixed) is selected, “Full Duplex” is automatically applied to the interface. Therefore, this command line will not appear for interface that is specified as “100Mbps (fixed)”.

Note: Normally this command is not required to be changed.

Note: When NEC Express 5800 FT server is used as host server, the values set with this command are not used. For an explanation, see [Software Model Installation Manual] - [SOFTWARE MODEL INSTALLATION AND SETUP] - [Before Installation].

(28) ipaddress

Setting of IP address and subnet mask

The following explains procedures for setting the number of ports that MG-SIP uses, and IP addresses and subnet masks for each port of MG-SIP.

Each port of MG-SIP is used as follows:

- Ether1 LAN: Telephony Server side
- Ether2 WAN: SIP network side

<One-port only>

When “IPv4” is enabled with the “set ip_version” command and the IP addresses of both LAN and WAN are assigned in the same segment, use Ether1 port only. Select “Y” for “Do you use one-port only?” and assign Ether1’s IP address only. In this case, Ether2 cannot be used.

Note: Please notice the following:

- If IPv6 was enabled with the “set ip_version” command, both Ether1 and Ether2 must be used to allow the sending and receiving of IPv6 packets to the WAN (Ether2) side.
- If Ether2 data is already assigned, the message “Ether [2] Port data is erased. Are you sure? Y/N” is displayed. To erase the Ether2 data, select “Y”.
- When using PPPoE, be sure to use 2 ports. In this case, an IP address obtained from the PPPoE server is automatically set as Enter2 IP address.
- If you set a non-default port number, be careful not to choose the same number set in other port numbers (set by “set sip_rtp_port_no”, “set ipx_rtp_port_no”, “set sip_media_port_no”, “set ipx_media_port_no”, “set registration_port_no”, “set signaling_port_no”, “set pre_negotiation_port_no”, “set sip_port_no” commands). When the same port number is set, a warning message is displayed as follows:

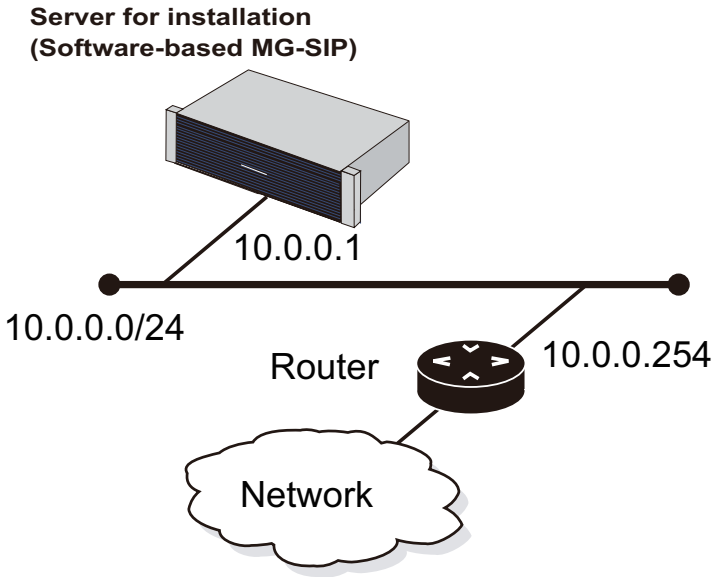
```
************* Warning!! *************
 Port number is duplicated.
```

```
[IPX side]
 RTP Port Number for voice  :51000 -
50511
 Media Port Number for video:55000 -
55255
 Media Port Number for T.38 :56000 -
56127
 Registration Port Number   :3456
 Signaling Port Number      :61012
 Pre-negotiation Port Number:61014


[SIP side]
 RTP Port Number for voice  :50000 -
50255
 Media Port Number for video:53000 -
53255
 Media Port Number for T.38 :54000 -
54127
 SIP Port Number:5060
************************************
```

[LAN side]
The range for the RTP port number that is used for voice.
The range for the media port number that is used for Video.
The range for the media port number that is used for T.38 Fax relay.
The UDP port number that receives the DRS packets.
The UDP port number that receives the control signal packets.
The UDP port number that receives packets for voice control path.

[SIP side]
The range for the RTP port number that is used for voice.
The range for the media port number that is used for Video.
The range for the media port number that is used for T.38 Fax relay.
The port number that receives SIP messages.

Configuration when using one port is as follows:



<Ethernet Port Redundancy function >

Ether1 and Ether2 can be used together as one virtual Ether (Bond [0]) if one-port only is selected and the

Ethernet Port Redundancy function is enabled. With this function, if there is a link down (**Note 4**) for Ether1 (or Ether2), Ether2 (or Ether1) is used (**Note 5**).

Note 4: Only if the link down state continues for more than 100 milliseconds.

Note 5: Please notice the following:

- When there is a changeover of the port in use, MG-SIP is not restarted. However, ongoing voice communication will be interrupted by a silent gap of less than one second.
- Even if there is a link up for Ether1 while Ether2 is an active port, Ether2 continues to be an active port. In this case, only when there is a link down for Ether2, Ether1 takes the place of it.
- Connect a cable both to Ether1 and Ether2 when Ethernet Redundancy function is enabled.

[Display example]

[IPv6]

```
MG(SIP) > set ipaddress

Do you use one-port only? Y/N=n


Ether[1]

 Input IP Address.(default=0.0.0.0)
           :10.1.0.1

 Input Subnet mask.(default=0.0.0.0)
           :255.255.255.0
```

Select “n” to use IPv6 function.
One-port only is not supported by IPv6 function.

Setting Ether1 port:

IP address (Default: 0.0.0.0)

Subnet mask (Default: 0.0.0.0)

Setting Ether2 port:
Inputting Ether[2] setting data is unnecessary.
When IPv6 function is active (“IPv6” is selected by “set ip_version” command), MG-SIP can generate the IP address and the Subnet mask for Ether2 by receiving the RA message from the router.

```
<< Result >>
Using all port
Ether[1]
 IP Address : 192.168.100.33
 Subnet mask: 255.255.0.0
Ether[2]
 IP Address : 2001:db8::800(Get by RA)
 Subnet mask: 64(Get by RA)
```

Displays the result.
“(Get by RA)” appears subsequent to the IP address and the Subnet mask generated by the Router Advertisement.

[IPv4] (Eher1 and Ether2 are used)

```
MG(SIP) > set ipaddress

Do you use one-port only? Y/N=n

Ether[1]

  Input IP Address.(default=0.0.0.0)
            :10.1.0.1

  Input Subnet mask.(default=0.0.0.0)
            :255.255.255.0

Ether[2]

  Input IP Address.(default=0.0.0.0)
            :192.168.1.1

  Input Subnet mask.(default=0.0.0.0)
            :255.255.255.0
```

Setting Ether1 port:

IP address (Default: 0.0.0.0)

Subnet mask (Default: 0.0.0.0)

Setting Ether2 port:

IP address (Default: 0.0.0.0)

Subnet mask (Default: 0.0.0.0)

[IPv4] (Only Ether1 is used and Ethernet Redundancy function is enabled)

```
MG(SIP)> set ipaddress

Do you use one-port only? Y/N=y

Ether[1]

  Input IP Address. (default=0.0.0.0)
            : 172. 16. 0. 1

  Input Subnet mask. (default=0.0.0.0)
            : 255. 255. 255. 0

Ether[2] port data is erased.
Are you sure? Y/N = y

Select the setting of Ethernet Port
Redundancy function.
  0 = disable (default)
  1 = enable
Input : 1
```

Assign Ether1 data.

Assign the IP address (Default: 0.0.0.0) for Ether [1].

Assign the subnet mask (Default: 0.0.0.0) for Ether [1].

Note 6

Enable Ethernet Port Redundancy. **Note 4**
0: disable (default)
1: enable

Note 6: When one-port only is selected, do not assign Ether[2] data.

(29) ip_version

Setting of SIP side IP Version

This command is used to specify the IP version for the SIP side network.

[Setting Example]

```
MG(SIP) > set ip_version

Select the setting of SIP side IP
Version.
 0=IPv4 (default)
 1=IPv6
Input: 1
```

Assign the IP version for the SIP side network.
0: IPv4 (Default)
1: IPv6

Note: The conditions of this command are as follows.

- After changing the IP version with this command, you also need to change the IP addresses configured with the following commands before executing the “reboot” command.
  - “DNS IP address” configured with “set dnsaddress”
  - “SIP server IP address” configured with “set sip_server”
  - “SIP register IP address” configured with “set sip_register”

  When you change IPv4 to IPv6, IP address for Ether2 port configured with “set ipaddress” is generated by MG-SIP after receiving the RA message.
- When you change the IP version with this command, see also the information in 4.3.3.7 IPv6 Function.

(30) ipx_media_port_no

Setting of the media port number in the Telephony Server network side

Note: Normally this command is not required to be changed.

This command is used to specify base port numbers for media (Video and T.38 Fax) in the Telephony Server side network. For video, the registered number of the port number must be even, odd numbers are not supported (in case of T.38, there is not such limitation).

The following figure shows an example of display.

```
MG(SIP) > set ipx_media_port_no
```

```
<< Current Setting >>
   IPX side Media Port Number for video
:55000
   IPX side Media Port Number for T.38
:56000

 Input IPX side Media Port Number for video.
  (1024-64000 (default=55000)):55000

 Input IPX side Media Port Number for T.38.
  (1024-64000 (default=56000)):56000

<< Result >>
   IPX side Media Port Number for video
:55000
   IPX side Media Port Number for T.38
:56000

MG(SIP)>
```

Assign the base port number for video in the Telephony Server network side. (Default : 55000)

Assign the base port number for T.38 Fax relay in the Telephony Server network side. (Default : 56000)

Note: If you set a non-default port number, be careful not to choose the same number set in other port numbers (set by “set sip_rtp_port_no”, “set ipx_rtp_port_no”, “set sip_media_port_no”, “set ipx_media_port_no”, “set registration_port_no”, “set signaling_port_no”, “set pre_negotiation_port_no”, “set sip_port_no” commands).
When the same port number is set, a warning message is displayed as follows:

```
************* Warning!! *************
 Port number is duplicated.


[IPX side]
 RTP Port Number for voice  :51000 -
50511
 Media Port Number for video:55000 -
55255
 Media Port Number for T.38 :56000 -
56127
 Registration Port Number   :3456
 Signaling Port Number      :61012
 Pre-negotiation Port Number:61014
```

[LAN side]
The range for the RTP port number that is used for voice.
The range for the media port number that is used for Video.
The range for the media port number that is used for T.38 Fax relay.
The UDP port number that receives the DRS packets.
The UDP port number that receives the control signal packets.
The UDP port number that receives packets for voice control path.

```
[SIP side]
 RTP Port Number for voice  :50000 -
50255
 Media Port Number for video:53000 -
53255
 Media Port Number for T.38 :54000 -
54127
 SIP Port Number:5060
**********************************
```

[SIP side]
The range for the RTP port number that is used for voice.
The range for the media port number that is used for Video.
The range for the media port number that is used for T.38 Fax relay.
The port number that receives SIP messages.

(31) ipx_route

Setting of the route information in the Telephony Server network

This command is used to specify route information in the Telephony Server side network. The registered number of the route information is up to 10.

The following figure shows an example of display.

When Route type = 0 is selected:

```
MG(SIP) > set ipx_route
Select Route type(0:Exit/1:None/2:Static):0




MG(SIP)>
```

0: Exit
1: None (Default)
2: Static
Select “0”.

Exit the command without executing anything.

When Route type = 1 is selected:

```
MG(SIP) > set ipx_route
Select Route type(0:Exit/1:None/2:Static):1




<< Result >>
Route type: None
Are you sure? Y/N=y



MG(SIP) >
```

0: Exit
1: None (Default)
2: Static
Select “1”.

Note: Pressing any key other than “y” causes the following message.

Route setting command was interrupted.

When Route type = 2 is selected:

- [To Assign Destination Network Address and Gateway Address]

  Usually, gateway data should be set as 'Static' at LAN (Telephony Server network) side.

```
MG(SIP) > set ipx_route
Select Route type(0:Exit/1:None/2:Static):2



Select command(0:Exit/1:Set/2:Delete):1



Select Gateway type(0:Exit/1:Gateway/
2:Default Gateway):1



Input Destination network
Address:172.16.0.0
Input Subnet mask bit(0-32):16









Input IP Address of Gateway:192.168.0.254

<< Result >>
Route type: Static
Gateway Address|Destination network/Prefix
---------------+-------------------------
---
192.168.0.254  |172.16.0.0        /16
```

0: Exit
1: None (Default)
2: Static
Select "2".

0: Exit (Exit the command without executing anything.)
1: Set route information.
2: Delete route information.
Select "1".

0: Exit (Exit the command without executing anything.)
1: Specify the gateway.
2: Specify the default gateway.
Select "1".

Specify the network address. **Note 7**
(Default: 0.0.0.0)

Specify the subnet mask. **Note 7**
(Default: 0)

Note: If an invalid value is set here, the following error message is displayed. Input the valid value.

Input destination network address invalid.

Specify the gateway address.
(Default: 0.0.0.0)

```
Are you sure? Y/N=y



MG(SIP)>
```

Note: Pressing any key other than "y" displays the following message.

Route setting command was interrupted.

Note 7: Do not set routing in the segment where MG-SIP belongs.

- [To Assign Routing Information (Gateway Address only)]

  To set a default gateway, it should be assigned to either LAN side port or SIP network side port. Usually, assign a default gateway to SIP network side port. Two or more Default Gateways cannot be registered.

```
MG(SIP) > set ipx_route
Select Route type(0:Exit/1:None/2:Static):2



Select command(0:Exit/1:Set/2:Delete):1



Select Gateway type(0:Exit/1:Gateway/
2:Default Gateway):2



Input IP Address of Default
Gateway:192.168.0.254
<< Result >>
Route type:Static
Gateway Address|Destination network/Prefix
---------------+--------------------------
---
192.168.0.254 |0.0.0.0            /16
Are you sure? Y/N=y



MG(SIP)>
```

0: Exit
1: None (Default)
2: Static
Select "2.

0: Exit (Exit the command without executing anything.)
1: Set routing information.
2: Delete routing information.
Select "1".

0: Exit (Exit the command without executing anything.)
1: Specify the gateway.
2: Specify the default gateway.
Select "2".

Specify the default gateway.
(Default: 0.0.0.0)

Note: Pressing any key other than "y" displays the following message.

Route setting command was interrupted.

- [To Delete the assigned Routing Information]

```
MG(SIP) > set ipx_route
Select Route type(0:Exit/1:None/2:Static):2



```

0: Exit
1: None (Default)
2: Static
Select "2.

```
Select command(0:Exit/1:Set/2:Delete):2




No|Gateway Address|Destination network/
Prefix
--+---------------+-----------------------
----
1 |192.168.0.254 |172.16.0.0        /16
2 |192.168.0.254 |10.0.0.0          /8
Select delete No?: 1


No|Gateway Address|Destination network/
Prefix
--+---------------+-----------------------
----
1 |192.168.0.254 |10.0.0.0          /8
Are you sure? Y/N=y



MG(SIP)>
```

0: Exit (Exit the command without executing anything.)
1: Set routing information.
2: Delete routing information.
Select "2".

Note: When there is no information to delete here, the following message is displayed.

There is no static route table to delete.

Select the number (No) of the route information you want to delete.
Select "1.

Note: Pressing any key other than "y" displays the following message.

Route setting command was interrupted.

Note: The conditions of this command are as follows.

- To set a default gateway, it should be assigned to either one of the LAN side port or SIP network side port.
- Routing setting is unnecessary for the same network segment as that of IP address set for the MG-SIP.
- Summarize the network addresses if possible.
- If you set an invalid gateway address and reboot the system, a message of "Please set correct gateway address!!" stays displayed after rebooting the system.

(32) ipx_rtp_port_no

Setting of the RTP base port number for LAN (Telephony Server network)

This command is used to assign the base port number that is used for RTP at LAN side. (Even numbers only.)

[Setting Example]

```
MG(SIP) > set ipx_rtp_port_no

Input IPX side RTP Port Number.
(1024-64000(default=51000)):51000
```

Assign the base port number that is used for RTP at LAN side (Default: 51000). (Receiving side of MG-SIP)

Note: The conditions of this command are as follows.

- Normally this command is not required to be changed.
- RTP ports occupy 512 (128×4) ports (counting from the RTP base port number).
- If you set a non-default port number, be careful not to choose the same number set in other port numbers (set by “set sip_rtp_port_no”, “set ipx_rtp_port_no”, “set sip_media_port_no”, “set ipx_media_port_no”, “set registration_port_no”, “set signaling_port_no”, “set pre_negotiation_port_no”, “set sip_port_no” commands). When the same port number is set, a warning message is displayed as follows:

```
************* Warning!! *************
 Port number is duplicated.


[IPX side]
 RTP Port Number for voice  :51000 -
50511
 Media Port Number for video:55000 -
55255
 Media Port Number for T.38 :56000 -
56127
 Registration Port Number   :3456
 Signaling Port Number      :61012
 Pre-negotiation Port Number:61014
```

[LAN side]
The range for the RTP port number that is used for voice.
The range for the media port number that is used for Video.
The range for the media port number that is used for T.38 Fax relay.
The UDP port number that receives the DRS packets.
The UDP port number that receives the control signal packets.
The UDP port number that receives packets for voice control path.

```
[SIP side]
 RTP Port Number for voice  :50000 -
50255
 Media Port Number for video:53000 -
53255
 Media Port Number for T.38 :54000 -
54127
 SIP Port Number:5060
**********************************
```

[SIP side]
The range for the RTP port number that is used for voice.
The range for the media port number that is used for Video.
The range for the media port number that is used for T.38 Fax relay.
The port number that receives SIP messages.

(33) keynumber

Setting of the pilot number for MG-SIP

The command is used to assign a pilot number of MG-SIP for registration.

[Setting Example]

```
MG(SIP) > set keynumber

Input Keynumber.(default=0, MAX32(strings))
          :0
```

Assign the pilot number when register is performed (Default: 0).

Note: Be sure not to enter a blank character to the end of the pilot number (with the Copy and Paste features of your personal computer), and be careful not to mistype a character. (“0”(zero) or “O” (alphabetical O), for example.)

(34) multi_regist

Setting of the registration function per number

This command is used to enable/disable the setting of registration to SIP server per number.

[When this function is enabled]

Registers to SIP server per SIP-URI (or Telephone number).

```
MG(SIP) > set multi_regist

Select Multi-registration mode.
 0=disable(default)
 1=enable
Input:1

Input the interval of REGISTER message
transmitting. (sec)(1-10(default=1)):1

Input Standby timer value.(sec)(10-
3600(default=30)):30
```

0: disable
1: enable
Select “1”.

Assign the time interval to send register (Default: 1sec).

Assign the time value to re-register after fault recovery (Default 30sec).

```
Select Contact Header type.
 0=Privacy(default)
 1=SIP-URI
Input:0
```

0: Random value
1: SIP-URI **Note 8**

Note 8:

- When “Privacy” is selected:: Assign a random value to the User ID field of SIP message “Contact header”.
- When “SIP-URI” is selected: Assign the SIP-URI to the User ID field of SIP message “Contact header”. Assign the telephone number if SIP-URI has not been assigned.

[When this function is disabled]

Only the pilot number that is set in the configuration of MG-SIP by “set keynumber” command registers to SIP server.

```
MG(SIP) > set multi_regist
Select Multi-registration mode.
 0=disable(default)
 1=enable
Input:0
```

0: disable
1: enable
Select “0”.

Note: The conditions of this command are as follows.

- Use configuration command “set sip_register” to assign the SIP server for register destination.
- The assignment of “set sip_register” is necessary when registration is to be done per number.
- Assign this command adjusting to the specifications on the SIP network where MG-SIP connects.

(35) multisession

Setting of Silent Monitor (Multi-Path Monitor) Connection

This command is used to set Silent Monitor (Multi-Path Monitor) Connection using MG-SIP in the ACD system.

Note: ACD features can be used only when the MG-SIP registers to the SV9500 Appliance Model (FP95-112 V2 or later version).

[Setting Example]

```
MG(SIP) > set multisession

<< Current Setting >>
    Multi-Session setting:disable

Select Multi-Session setting.
  0 = disable (default)
  1 = enable
Input:1

<< Result >>
  Multi-Session setting:enable
```

Displays the current setting.

0: Disabled (default)
1: Enabled

Displays the result.

(36) musictype

Setting of the type of music to be sent from MG-SIP

This command is used to select music type that is sent from MG-SIP.

[Setting Example]

```
MG(SIP) > set musictype

Select Music Type.
 0=Type1(default)
 1=Type2
 2=Type3
 3=Type4
Input:0
```

0: Type1: Minuet
1: Type2: For Elise
2: Type3: WAVE file
3: Type4: No sound

(37) name_display

Setting of Name Display service

This command is used to enable/disable Name Display service using MG-SIP.

[Setting Example]

```
MG(SIP) > set name_display

Select function of Name Display.
  0 = disable (default)
  1 = enable
Input:1
```

0: Disabled (default)
1: Enabled

(38) nataddress

Setting of the communication between MG-SIP and SIP server via NAT

This command is used to assign the global IP address for NAT.

[Setting Example]

```
MG(SIP) > set nataddress

<<Current Setting>>
NAT IP Address:0.0.0.0

Input NAT IP Address.
(default=0.0.0.0):189.10.3.41

<<Result>>
NAT IP Address:189.10.3.41
```

Displays the current setting.

Enter a global IP address for NAT.

Displays the result.

Note: The conditions of this command are as follows.

- This setting is available for MGSIPVM PROG-E.
- When this feature is enabled, disable SIP Access Filter (set sip_accfilter) and IPv6 (set ip_version). Also, the installation of the router which supports NAT on SIP network is required.
- IP masquerade (NAPT) is not supported.

(39) no_media_code

Setting of the SIP Error Response code

This command is used to set a SIP error response code. When 415 is set as a response code, 415 Unsupported Media Type is sent instead of response code 488 if an unsupported codec is received.

[Setting Example]

```
MG(SIP) > set no_media_code

Input the SIP Error Response code when
the unsupported codec.
(400-606 (default=488)): 415
```

Type any number between 400 and 606 (415 is typed in this manual as an example).

Note: The conditions of this command are as follows.

- Accept, Accept-Encoding and Accept-Language headers are not added to 415 Unsupported Media Type.
- 415 Unsupported Media Type response supports only when the request message is the INVITE or UPDATE message.

(40) out_of_area_code

Setting of the out-of-area error response

This command is used to set the out-of-area (IPX network) error response.

[Setting Example]

```
MG(SIP) > set out_of_area_code

Input the SIP Error Response code when the out
of area.
(400-606(default=408)):408
```

Set the error response code.
(Default: 408)

Note: Normally this command is not required to be changed.

(41) ppi_to_pai

Setting of PAID transmission function

This command is used to enable/disable P-Asserted-Identity header (PAID) to be transmitted instead of P-Preferred-Identity header (PPID).

[Setting Example]

```
MG(SIP) > set ppi_to_pai

Select the setting that P-Asserted-
Identity is transmitted instead of P-
Preferred-Identity.
  0 = disable (default)
  1 = enable
Input:1
```

0: disable (Default)
1: enable

Note: SIP messages can be sent by converting P-Preferred-ID header (PPID) to P-Asserted-ID header (PAID) only when P-Preferred-ID header (PPID) is used for either of the following settings:
- Enable “privacy_pattern” command and specify “2: RFC3323/3325(P-Preferred-ID/Privacy)”.
- Enable “name_display” command.

(42) prack

Setting of PRACK (Provisional Response Acknowledgment) function (RFC3262)

This command is used to enable/disable Provisional Response Acknowledgement (PRA) function (RFC3262). When this is set enabled, the 18x cyclical-send of provisional response function can be specified.

[Setting Example]

```
MG(SIP) > set prack

Select function to add 100rel to Supported
Header.
 0=enable(default)
 1=disable
Input:0

Select function to stop cyclical-send of
Provisional Response.
 0=disable(default)
 1=enable
Input:0
```

0: enable (Default)
1: disable

0: enable 18x cyclical-send
1: disable 18x cyclical-send

Note: Assign this command adjusting to the specifications on the SIP network where MG-SIP connects.

(43) pre_negotiation_port_no

Setting of the UDP port receiving packets for voice control path

This command is used to specify the UDP port number that receives packets regarding the voice control path.

[Setting Example]

```
MG(SIP) > set pre_negotiation_port_no

Input Pre-negotiation Port Number.
(1024-65535(default=61014)):61014
```

Assign the UDP port receiving packets for voice control path. (Default: 61014)

Note: Please notice the following:

- Normally this command is not required to be changed.
- If you set a non-default port number, be careful not to choose the same number set in other port numbers (set by “set sip_rtp_port_no”, “set ipx_rtp_port_no”, “set sip_media_port_no”, “set ipx_media_port_no”, “set registration_port_no”, “set signaling_port_no”, “set pre_negotiation_port_no”, “set sip_port_no” commands). When the same port number is set, a warning message is displayed as follows:

```
************* Warning!! *************
 Port number is duplicated.
```

```
[IPX side]
 RTP Port Number for voice  :51000 -
50511
 Media Port Number for video:55000 -
55255
 Media Port Number for T.38 :56000 -
56127
 Registration Port Number   :3456
 Signaling Port Number      :61012
 Pre-negotiation Port Number:61014


[SIP side]
 RTP Port Number for voice  :50000 -
50255
 Media Port Number for video:53000 -
53255
 Media Port Number for T.38 :54000 -
54127
 SIP Port Number:5060
************************************
```

[LAN side]
The range for the RTP port number that is used for voice.
The range for the media port number that is used for Video.
The range for the media port number that is used for T.38 Fax relay.
The UDP port number that receives the DRS packets.
The UDP port number that receives the control signal packets.
The UDP port number that receives packets for voice control path.

[SIP side]
The range for the RTP port number that is used for voice.
The range for the media port number that is used for Video.
The range for the media port number that is used for T.38 Fax relay.
The port number that receives SIP messages.

(44) privacy_pattern

Setting of the privacy pattern

This command is used to specify a type of Calling Line Identification Non-Presentation when calling to SIP network.

[Setting Example]

```
MG(SIP) > set privacy_pattern

Select Privacy pattern of Calling Party
Number.
 0=DisplayName(default)
 1=Remote-Party-ID
 2=RFC3325
```

0: DisplayName (Default)
1: Remote-Party-ID
2: RFC3323/3325(P-Preferred-ID/Privacy)

When “0” is selected:

```
MG(SIP) > set privacy_pattern
```

```
Select Privacy pattern of Calling Party
Number.
 0=DisplayName(default)
 1=Remote-Party-ID
 2=RFC3325
Input: 0
```

0: DisplayName (Default)
1: Remote-Party-ID
2: RFC3323/3325(P-Preferred-ID/Privacy)

When "1" is selected:

```
MG(SIP) > set privacy_pattern

Select Privacy pattern of Calling Party
Number.
 0=DisplayName(default)
 1=Remote-Party-ID
 2=RFC3325
Input:1

Input a Dummy string.(MAX32(strings))
                    :anonymous
```

0: DisplayName (Default)
1: Remote-Party-ID
2: RFC3323/3325(P-Preferred-ID/Privacy)

Enter a dummy string (specified by provider) in maximum of 32 characters.

When "2" is selected:.

```
MG(SIP) > set privacy_pattern

Select Privacy pattern of Calling Party
Number.
 0=DisplayName(default)
 1=Remote-Party-ID
 2=RFC3325
Input:2

Select RFC3325 pattern.
 0=Pattern 1:privacy_only(default)
 1=Pattern 2:TEL-URI
 2=Pattern 3:unused
 3=Pattern 4:SIP-URI
 4=Pattern 5:P-Associated-URI
 5=pattern 6:SIP-URI(no privacy)
Input:0
```

0: DisplayName (Default)
1: Remote-Party-ID
2: RFC3323/3325(P-Preferred-ID/Privacy)

Select an RFC3325 pattern. **Note 9**
0: privacy_only (Default)
1: TEL-URI
2: unused
3: SIP-URI
4: P-Associated-URI
5: SIP-URI (no privacy) **Note 10**

Note 9: Use of P-Preferred-ID headers of INVITE message differs for each pattern.
- When Pattern 1 is set: P-Preferred-ID header is not attached.
- When Pattern 2 is set: P-Preferred-ID header is attached. (tel: is used)
- When Pattern 3 is set: Not used.

- When Pattern 4 is set: P-Preferred-ID header is attached.
- When Pattern 5 is set: P-Preferred-ID header is attached. (P-Associated-URI is used)
- When Pattern 6 is set: P-Preferred-ID header is attached.

Note 10: This parameter cannot be assigned when “set multi_regist” or “set 184toprivacy” is enabled.

Note: Assign this command adjusting to the specifications on the SIP network where MG-SIP connects.

(45) registration_port_no

Setting of the UDP port number that receives DRS packets

This command is used to specify the UDP port number that receives the registration packets.

[Setting Example]

```
MG(SIP) > set registration_port_no

Input Registration Port Number.
(1024-65535(default=3456)):3456
```

Assign the UDP port number that receives the DRS packets. (Default: 3456).

Note: Please notice the following:

- Normally this command is not required to be changed.
- If you set a non-default port number, be careful not to choose the same number set in other port numbers (set by “set sip_rtp_port_no”, “set ipx_rtp_port_no”, “set sip_media_port_no”, “set ipx_media_port_no”, “set registration_port_no”, “set signaling_port_no”, “set pre_negotiation_port_no”, “set sip_port_no” commands). When the same port number is set, a warning message is displayed as follows:

```
************* Warning!! *************
 Port number is duplicated.


[IPX side]
 RTP Port Number for voice  :51000 -
50511
 Media Port Number for video:55000 -
55255
 Media Port Number for T.38 :56000 -
56127
 Registration Port Number   :3456
 Signaling Port Number      :61012
 Pre-negotiation Port Number:61014
```

[LAN side]
The range for the RTP port number that is used for voice.
The range for the media port number that is used for Video.
The range for the media port number that is used for T.38 Fax relay.
The UDP port number that receives the DRS packets.
The UDP port number that receives the control signal packets.
The UDP port number that receives packets for voice control path.

```
[SIP side]
 RTP Port Number for voice  :50000 -
50255
 Media Port Number for video:53000 -
53255
 Media Port Number for T.38 :54000 -
54127
 SIP Port Number:5060
**********************************
```

[SIP side]
The range for the RTP port number that is used for voice.
The range for the media port number that is used for Video.
The range for the media port number that is used for T.38 Fax relay.
The port number that receives SIP messages.

(46) reg_interval

Setting of the waiting time to retry after registration failure

This command is used to assign the retry waiting time when failed to register, due to the error-response or no answer from the server when Register packet was sent to SIP server from MG-SIP.

[Setting Example]

```
MG(SIP) > set reg_interval

Input REGISTER interval timer value.(min)
(1-255(default=5)):5
```

Re-register waiting time (min):
(Default: 5min)

Note: The conditions of this command are as follows.

- Assign this command adjusting to the specifications on the SIP network where MG-SIP connects.
- When registration per number function is effective, assign by setting MG-SIP using the largest number within the same MG-SIP group referring to table below.

Amount of Numbers	Time (minute)
1 to 300	5
301 to 600	10
601 to 900	15
901 to 1000	20

(47) response_table

Setting of response table selection

This command is used to set the response table.

[Setting Example]

```
MG(SIP) > set response_table
```

```
Select Response table(Error Cause to
SIP Error Response).
 0=normal(default)
 1=revised
Input:0
```

0: normal table selection (Default)
1: Select not to send a server error from MG-SIP to SIP network.

Note: Normally this command is not required to be changed.

(48) rfc2833_pass

Setting of RFC2833 packet transparency

This command is used to enable/disable RFC2833 packet transparency. When this is set enabled, DTMF relay method with RFC2833 on the Telephony Server network is available.

[Setting Example]

```
MG(SIP) > set rfc2833_pass
<< Current Setting >>
 RFC2833 RTP Event Pass: disable
Select the setting of RFC2833 RTP Event Pass.
 0=disable(default)
 1=enable
Input:1
<<Result>>
 RFC2833 RTP Event Pass: enable
```

Displays the current setting.

0: disable (Default)
1: enable

Displays the result.

Note: The conditions when enabling this command are as follows.

- This setting is available for MGSIPVM PROG-E.
- To make this assignment effective, it is required to execute the “REBOOT” command to save the configuration and restart the MG-SIP.
- The payload type 103 is used for the FAX as voice data. Therefore, the payload type 103 cannot be used for RFC2833 packet.
- When the MG-SIP receives RFC2833 packet from the Telephony Server side and sends Inband DTMF signals to SIP Server side, “SequenceNum” and “TimeStamp” in the RTP packet of Inband DTMF will not be consecutive to the RTP packet which are sent previously. Then, it may occur a pause of sound.
- The command data, “DTMF Duration” and “DTMF Pause” that are specified by the configuration command “set dtmf_mode” will not be reflected.
- RFC2833 packet is not supported for the PAD adjustment option of the configuration command “set softdsp”.
- The data of RFC2833 packet such as “Event”, “Duration”, “Volume”, “E”, and “R” will be transferred to the network without checking.
- Multiple events and an event coexisting “Tone” and “Event” are not supported per one RFC2833 packet.
- “Telephone Tone” of RFC2833 packet is not supported.

(49) rtp_pathon

Setting of Path-on function by 183 Progress after receiving 180 Ringing

This command is used to assign Path-on function by 183Progress after receiving 180Ringing.

[Setting Example]

```
MG(SIP) > set rtp_pathon

Select Path-on 183 after 180.
 0=disable(default)
 1=enable
Input:0
```

0: disable (Default)
1: enable

Note: The conditions of this command are as follows.
- Assign this command adjusting to the specifications on the SIP network where MG-SIP connects.
- Normally this command is not required to be changed.

(50) rtp_qos

This command is used to specify the ToS value of Real-Time Protocol (RTP) packets on SIP network side.

[Setting Example]

```
MG(SIP) > set rtp_qos
```

* See "drs_qos" command for a display example and the contents of the configuration.

Note: Normally this command is not required to be changed.

(51) sdp_style

This command is used to receive SDP with multiple "m" lines.

- When normal style is specified:

```
MG(SIP) > set sdp_style

Select SDP style setting.
 0=normal(default)
 1=RFC4566
Input:0
```

0: normal (default)
1: conforms to RFC4566

- When RFC4566 style is specified:

```
MG(SIP) > set sdp_style
```

```
Select SDP style setting.
 0=normal(default)
 1=RFC4566
Input:1

Select the setting of G729 annexb=no.
 0=disable (default)
 1=enable
Input:1
```

0: normal (default)
1: conforms to RFC4566

Specify the setting of G729 annexb=no.
0: G729 annexb=no is disabled.
1: G729 annexb=no is enabled.

Note: The conditions of this command are as follows.
- This command can be skipped by pressing Enter key.
- To make this command effective, save the Config data in “reboot” command before finishing configuration command, and reboot MG(SIP).
- When using Media Ports, assign “1” (RFC4566) by the “set sdp_style” command.

(52) self_sip_domain

Setting of SIP domain name for MG-SIP

This command is used to set the SIP domain name for MG-SIP.

[Setting Example]

- When this command is enabled:

```
MG(SIP) > set self_sip_domain

Select Self SIP Domain mode.
 0=disable(default)
 1=enable
Input:1

Input a Self SIP Domain
string.(MAX128(strings))
                      :
```

0: without domain name (Default)
1: with domain name

Input the SIP domain name in maximum of 128 characters.

- disable

```
MG(SIP) > set self_sip_domain

Select Self SIP Domain mode.
 0=disable(default)
 1=enable
Input:0
```

0: without domain name (Default)
1: with domain name

Note: The conditions of this command are as follows.
- Assign this command adjusting to the specifications on the SIP network where MG-SIP connects.

- This command is required only when SIP domain must be separated between the SIP server and MG-SIP.
- If this command is not set, the SIP domain set by “set sip_server” command is used for the SIP domain of MG-SIP.

(53) session_timer

Setting of session timer

This command is used to specify the Session Timer.

[Setting Example]

```
MG(SIP) > set session_timer

Select the setting of Session-timer.
 0=enable(default)
 1=disable
```

0: Session Timer is enabled. (Default)
1: Session Timer is disabled.

When Session-Timer is Enable (=0) is selected:

```
MG(SIP) > set session_timer

Select the setting of Session-timer.
 0=enable(default)
 1=disable
Input:0

Input Session-expires timer value.(sec)
(0-86400(default=180)):180

Select Refresher type.
 0=UAC(default)
 1=UAS
Input:0

Select "refresher=uac" ini-INVITE.
 0=disable(default)
 1=enable
Input:0

Select Forced mode.
 0=disable(default)
 1=enable
Input:0
```

Set the session timer.
(Default: 180sec)

Determine a point to make refresher.
UAC: User Agent Client
UAS: User Agent Server

refresher=uac addition to INVITE message:
0: refresher=uac is not added
1: refresher=uac is added

0: Session timer will not be activated when Supported/Require header does not exist (default).
1: Session timer will be activated by using Session-Expires when Supported/Require header does not exit.

```
Select "refresher=uac" re-INVITE.
 0=disable(default)
 1=enable
Input:0
```

0: “refresher=uac” is not added to the re-INVITE message (default).
1: “refresher=uac” is added to the re-INVITE message.

When Session-Timer is Disable (=1) is selected:

```
MG(SIP) > set session_timer

Select the setting of Session-timer.
 0=enable(default)
 1=disable
Input:1
```

Note: Assign this command adjusting to the specifications on the SIP network where MG-SIP connects.

(54) signaling_port_no

Setting of the UDP port number that receives control signal packets

This command is used to specify the UDP port number that receives the control signal packets.

[Setting Example]

```
MG(SIP) > set signaling_port_no

Input Signaling Port Number.
(1024-65535(default=61012)):61012
```

Assign the UDP port number that receives the control signal packets (Default: 61012).

Note: Please notice the following:

- Normally this command is not required to be changed.
- If you set a non-default port number, be careful not to choose the same number set in other port numbers (set by “set sip_rtp_port_no”, “set ipx_rtp_port_no”, “set sip_media_port_no”, “set ipx_media_port_no”, “set registration_port_no”, “set signaling_port_no”, “set pre_negotiation_port_no”, “set sip_port_no” commands). When the same port number is set, a warning message is displayed as follows:

```
************* Warning!! *************
 Port number is duplicated.
```

```
[IPX side]
 RTP Port Number for voice  :51000 -
50511
 Media Port Number for video:55000 -
55255
 Media Port Number for T.38 :56000 -
56127
 Registration Port Number   :3456
 Signaling Port Number      :61012
 Pre-negotiation Port Number:61014


[SIP side]
 RTP Port Number for voice  :50000 -
50255
 Media Port Number for video:53000 -
53255
 Media Port Number for T.38 :54000 -
54127
 SIP Port Number:5060
************************************
```

[LAN side]
The range for the RTP port number that is used for voice.
The range for the media port number that is used for Video.
The range for the media port number that is used for T.38 Fax relay.
The UDP port number that receives the DRS packets.
The UDP port number that receives the control signal packets.
The UDP port number that receives packets for voice control path.

[SIP side]
The range for the RTP port number that is used for voice.
The range for the media port number that is used for Video.
The range for the media port number that is used for T.38 Fax relay.
The port number that receives SIP messages.

(55) sip_accfilter

Setting of SIP Access Filter

This command is used to enable the SIP Access Filter which discards SIP packets received from an unauthorized destination.

Also, this command is used to enable the Burst Access Filter which temporarily limits the maximum number of incoming calls that can be received by a Telephony Server when a rush of calls from a SIP network occurs instantaneously.

[Setting Example]

When IP address (=0) is selected by “set sip_server” command:

[IPv6]

```
MG(SIP) > set sip_accfilter

Select the setting of SIP Access
Filter.
 0=disable (default)
 1=enable
Input: 1
```

Enable/disable SIP Access Filter.
0: SIP Access Filter is disabled (default).
1: SIP Access Filter is enabled.

```
Input SIP Access Filter mask.
(default=128)
(SIP server IP Address : 2001:db8::860)
                                  : 128
```

When SIP Access Filter is enabled, set SIP Access Filter mask. (Default: perfect matching which means only SIP server address is authorized)

When SIP Access Filter is enabled, set SIP Access Filter mask. (Default: perfect matching which means only SIP server address is authorized)

Note: The IP address of Register Server is authorized although it is not displayed.

```
Select the setting of Burst Access
Filter.
0 = disable (default)
1 = enable

Input : 1
```

Enable/disable Burst Access Filter. **Note 11**
0: Burst Access Filter is disabled (default).
1: Burst Access Filter is enabled.

```
Input Burst Access limit timer value.
(sec)
(1-60(default=1)) : 30
```

Assign the period of monitoring incoming calls (sec.).
(1-60, default is 1.)

```
Input Burst Access limit number value.
(1-1000(default=10)) : 500
```

Assign the limit number of incoming calls (INVITE number) to be received during a monitoring period (sec.). **Note 12**
(1-1000, default is 10.)

```
Input Burst Access reject response
code.
(400-699(default=488)) : 600
```

Assign the error response code that is sent back to a SIP network when the INVITE number exceeds the limit during a monitoring period (sec.).
(400-699, default is 488.)

```
MG(SIP)
```

[IPv4]

```
MG(SIP) > set sip_accfilter
```

```
Select the setting of SIP Access
Filter.
 0=disable (default)
 1=enable
Input: 1

Input SIP Access Filter mask. (default
=255.255.255.255)
(SIP server IP Address:
192.168.100.100)
                    : 255.255.255.255


Select the setting of Burst Access
Filter.
0 = disable (default)
1 = enable

Input : 1
Input Burst Access limit timer value.
(sec)
(1-60(default=1)) : 30

Input Burst Access limit number value.
(1-1000(default=10)) : 500


Input Burst Access reject response
code.
(400-699(default=488)) : 600




MG(SIP)
```

Enable/disable SIP Access Filter.
0: SIP Access Filter is disabled (default).
1: SIP Access Filter is enabled.

When SIP Access Filter is enabled, set SIP Access Filter mask. (Default: perfect matching which means only SIP server address is authorized)

Note: The IP address of Register Server is authorized although it is not displayed.

Enable/disable Burst Access Filter. **Note 11**
0: Burst Access Filter is disabled (default).
1: Burst Access Filter is enabled.

Assign the period of monitoring incoming calls (sec.).
(1-60, default is 1.)

Assign the limit number of incoming calls (INVITE number) to be received during a monitoring period (sec.). **Note 12**
(1-1000, default is 10.)

Assign the error response code that is sent back to a SIP network when the INVITE number exceeds the limit during a monitoring period (sec.).
(400-699, default is 488.)

When FQDN (=1) is selected by “set sip_server” command:

```
MG(SIP) > set sip_accfilter
```

```
Select the setting of SIP Access
Filter.
 0=disable (default)
 1=enable

Input: 1

Input SIP Access Filter mask. (default
=255.255.255.255)
(SIP server FQDN: sipserver.nec.com)
                    : 255.255.255.255



Select the setting of Burst Access
Filter.
0 = disable (default)
1 = enable

Input : 1
Input Burst Access limit timer value.
(sec)
(1-60(default=1)) : 30

Input Burst Access limit number value.
(1-1000(default=10)) : 500


Input Burst Access reject response
code.
(400-699(default=488)) : 600




MG(SIP)
```

Enable/disable SIP Access Filter.
0: SIP Access Filter is disabled (default).
1: SIP Access Filter is enabled.

When SIP Access Filter is enabled, set SIP Access Filter mask. (Default: perfect matching which means only SIP server address is authorized)

Note: The IP address of Register Server is authorized although it is not displayed.

Enable/disable Burst Access Filter. **Note 11**
0: Burst Access Filter is disabled (default).
1: Burst Access Filter is enabled.

Assign the period of monitoring incoming calls (sec.).
(1-60, default is 1.)

Assign the limit number of incoming calls (INVITE number) to be received during a monitoring period (sec.). **Note 12**
(1-1000, default is 10.)

Assign the error response code that is sent back to a SIP network when the INVITE number exceeds the limit during a monitoring period (sec.).
(400-699, default is 488.)

Note 11: When receiving incoming calls that exceed the assigned limit number while this feature is enabled, an error response code is sent back to a SIP network and further incoming calls are rejected until the next period of monitoring incoming calls.

Note 12: Only Initial-INVITE is counted as an incoming call. Besides, INVITE from an unauthorized destination is also counted as an incoming call when SIP Access Filter feature is disabled.

The followings are not counted as an incoming call:

- Outgoing call
- Abandoned or received call
- Re-INVITE
- INVITE from unauthorized destination (when SIP Access Filter feature is enabled)
- INVITE without the following header

  - Via
  - From
  - To
  - CSeq
  - CallID

(56) sip_media_port_no

Setting of the media port number in the SIP network side

Note: Normally this command is not required to be changed.

This command is used to specify base port numbers for media (Video and T.38 Fax) in the SIP side network. For video, the registered number of the port number must be even, odd numbers are not supported (in case of T.38, there is not such limitation).

The following is an example of display.

```
MG(SIP) > set sip_media_port_no
```

```
<< Current Setting >>
   SIP side Media Port Number for video
:53000
   SIP side Media Port Number for T.38
:54000

 Input SIP side Media Port Number for video.
  (1024-64000 (default=53000)):53000

 Input SIP side Media Port Number for T.38.
  (1024-64000 (default=54000)):54000

<< Result >>
   SIP side Media Port Number for video
:53000
   SIP side Media Port Number for T.38
:54000

MG(SIP)>
```

Assign the base port number for video in the SIP network side.
(Default : 53000)

Assign the base port number for T.38 Fax relay in the SIP network side.
(Default : 54000)

Note: If you set a non-default port number, be careful not to choose the same number set in other port numbers (set by “set sip_rtp_port_no”, “set ipx_rtp_port_no”, “set sip_media_port_no”, “set ipx_media_port_no”, “set registration_port_no”, “set signaling_port_no”, “set pre_negotiation_port_no”, “set sip_port_no” commands).
When the same port number is set, a warning message is displayed as follows:

```
************* Warning!! *************
 Port number is duplicated.


[IPX side]
 RTP Port Number for voice  :51000 -
50511
 Media Port Number for video:55000 -
55255
 Media Port Number for T.38 :56000 -
56127
 Registration Port Number   :3456
 Signaling Port Number      :61012
 Pre-negotiation Port Number:61014
```

[LAN side]
The range for the RTP port number that is used for voice.
The range for the media port number that is used for Video.
The range for the media port number that is used for T.38 Fax relay.
The UDP port number that receives the DRS packets.
The UDP port number that receives the control signal packets.
The UDP port number that receives packets for voice control path.

```
[SIP side]
 RTP Port Number for voice  :50000 -
50255
 Media Port Number for video:53000 -
53255
 Media Port Number for T.38 :54000 -
54127
 SIP Port Number:5060
************************************
```

[SIP side]
The range for the RTP port number that is used for voice.
The range for the media port number that is used for Video.
The range for the media port number that is used for T.38 Fax relay.
The port number that receives SIP messages.

(57) sip_port_no

Setting of the port number that receives SIP messages

This command is used to specify a UDP port number that receives SIP messages.

[Setting Example]

```
MG(SIP) > set sip_port_no

Input SIP Port Number.
(1024-65535(default=5060)):5060
```

Assign the port number that receives SIP messages (Default: 5060).

Note: Please notice the following:

- Normally this command is not required to be changed.
- If you set a non-default port number, be careful not to choose the same number set in other port numbers (set by “set sip_rtp_port_no”, “set ipx_rtp_port_no”, “set sip_media_port_no”, “set ipx_media_port_no”, “set registration_port_no”, “set signaling_port_no”, “set pre_negotiation_port_no”, “set sip_port_no” commands). When the same port number is set, a warning message is displayed as follows:

```
************* Warning!! *************
 Port number is duplicated.
```

```
[IPX side]
 RTP Port Number for voice  :51000 -
50511
 Media Port Number for video:55000 -
55255
 Media Port Number for T.38 :56000 -
56127
 Registration Port Number   :3456
 Signaling Port Number      :61012
 Pre-negotiation Port Number:61014


[SIP side]
 RTP Port Number for voice  :50000 -
50255
 Media Port Number for video:53000 -
53255
 Media Port Number for T.38 :54000 -
54127
 SIP Port Number:5060
************************************
```

[LAN side]
The range for the RTP port number that is used for voice.
The range for the media port number that is used for Video.
The range for the media port number that is used for T.38 Fax relay.
The UDP port number that receives the DRS packets.
The UDP port number that receives the control signal packets.
The UDP port number that receives packets for voice control path.

[SIP side]
The range for the RTP port number that is used for voice.
The range for the media port number that is used for Video.
The range for the media port number that is used for T.38 Fax relay.
The port number that receives SIP messages.

(58) sip_qos

Setting of the ToS value for SIP signaling

This command is used to specify the ToS value of IP packets for SIP signaling.

[Setting Example]

```
MG(SIP) > set sip_qos
```

* See “set drs_qos” command for a display example and the contents of the configuration.

Note: Normally this command is not required to be changed.

(59) sip_register

Setting of the information of SIP registrar

This command is used to assign an IP address or a Fully Qualified Domain Name (FQDN), and port number and expiration time of the SIP registrar.

The following figure shows an example of display.

When IP address (=0) is selected:

[IPv6]

```
MG(SIP) > set sip_register

Select SIP register type.
 0=IPAddress(default)
 1=FQDN
Input:0

Input SIP register IP Address.
(default=::)
                    : 2001:db8::880

Input SIP register Port Number.
(1024-65535(default=5060)):5060

Input SIP register Expires timer value.
(sec)
(1-65535(default=3600)):3600
```

When IP address (=0) is selected.

Assign the IP address of the SIP registrar (Default: ::).

Assign the port number of the SIP registrar (Default: 5060).

Assign the SIP registrar alive time in seconds (Default: 3600).

[IPv4]

```
MG(SIP) > set sip_register

Select SIP register type.
 0=IPAddress(default)
 1=FQDN
Input:0

Input SIP register IP Address.
(default=0.0.0.0)
                   :192.168.100.100

Input SIP register Port Number.
(1024-65535(default=5060)):5060

Input SIP register Expires timer value.
(sec)
(1-65535(default=3600)):3600
```

When IP address (=0) is selected.

Assign the IP address of the SIP registrar (Default: 0.0.0.0).

Assign the port number of the SIP registrar (Default: 5060).

Assign the SIP registrar alive time in seconds (Default: 3600).

When FQDN (=1) is selected:

```
MG(SIP) > set sip_register
```

```
Select SIP register type.
 0=IPAddress(default)
 1=FQDN
Input:1

Input Fully Qualified Domain Name.
(default=0, MAX63(strings))
                              :nec.com

Input SIP register Port Number.
(1024-65535(default=5060)):5060

Input SIP register Expires timer value.
(sec)
(1-65535(default=3600)):3600
```

When FQDN (=1) is selected.

Assign the FQDN of the SIP registrar (Default:0, max 63 characters).

Assign the port number of the registrar (Default: 5060).

Assign the SIP registrar alive time in seconds (Default: 3600).

Note: The conditions of this command are as follows.

- Pressing the Enter key can skip the item, with exceptions of “SIP register type” and “IP address/FQDN”.
- Normally this command is not required to be changed.
- Be sure not to enter a blank character to the end of the FQDN (with the Copy and Paste features of your personal computer), and be careful not to mistype a character. (“0”(zero) or “O” (alphabetical O), for example.)

(60) sip_route

Setting of the route information of SIP network

This command is used to specify route information in the SIP side network.
Use “set sip_route” command.
For details, see “ipx_route”(Setting of the route information in the Telephony Server network).

Note: When IPv6 (=1) is selected by “set ip_version” command, the IP address of the router is assigned to the default gateway automatically. If you attempt to execute this command, the following message appears:

“Sip route data can not be set when IPv6 is enable.”

(61) sip_rtp_port_no

Setting of the RTP base port number of SIP network

This command is used to assign the RTP base port number from SIP network. (Even numbers only.)

[Setting Example]

```
MG(SIP) > set sip_rtp_port_no

Input SIP side RTP Port Number.
(1024-64000(default=50000)):50000
```

Assign the RTP base port number for SIP side (Default: 50000).
(Receiving side of MG-SIP)

Note: The conditions of this command are as follows.

- Normally this command is not required to be changed.
- RTP ports occupy 256 (128×2) ports (counting from the RTP base port number).
- If you set a non-default port number, be careful not to choose the same number set in other port numbers (set by “set sip_rtp_port_no”, “set ipx_rtp_port_no”, “set sip_media_port_no”, “set ipx_media_port_no”, “set registration_port_no”, “set signaling_port_no”, “set pre_negotiation_port_no”, “set sip_port_no” commands). When the same port number is set, a warning message is displayed as follows:

```
************* Warning!! *************
 Port number is duplicated.


[IPX side]
 RTP Port Number for voice  :51000 -
50511
 Media Port Number for video:55000 -
55255
 Media Port Number for T.38 :56000 -
56127
 Registration Port Number   :3456
 Signaling Port Number      :61012
 Pre-negotiation Port Number:61014


[SIP side]
 RTP Port Number for voice  :50000 -
50255
 Media Port Number for video:53000 -
53255
 Media Port Number for T.38 :54000 -
54127
 SIP Port Number:5060
************************************
```

[LAN side]
The range for the RTP port number that is used for voice.
The range for the media port number that is used for Video.
The range for the media port number that is used for T.38 Fax relay.
The UDP port number that receives the DRS packets.
The UDP port number that receives the control signal packets.
The UDP port number that receives packets for voice control path.

[SIP side]
The range for the RTP port number that is used for voice.
The range for the media port number that is used for Video.
The range for the media port number that is used for T.38 Fax relay.
The port number that receives SIP messages.

(62) sip_server

Setting of the information of SIP server

This command is used to assign an IP address or a Fully Qualified Domain Name (FQDN), and port number, type, and SIP domain of the SIP server.

The following figure shows an example of display.

When IP address (=0) is selected:

[IPv6]

```
MG(SIP) > set sip_server

Select SIP server type.
 0=IPAddress(default)
 1=FQDN
Input:0

Input SIP server IP Address. Input SIP server
IP Address. (default=::)
: 2001:db8::860

Input SIP server Port Number.
(1024-65535(default=5060)):5060

Select SIP server Router type.
 0=Strict(default)
 1=Loose
Input:0


Select the setting of rport(RFC3581)
function.
 0=disable (default)
 1=enable
Input: 0


Input Domain Name.(default=0,
MAX128(strings))
```

When IP address (=0) is selected.
(Default: 0)

Assign the IP address of the proxy server.
(Default: ::)

Assign the port number of the proxy server.
(Default: 5060)

Select a Strict router or Loose router for the proxy server.
(Default: 0)
0: Strict router
1: Loose router
Select “0”.

Enable/disable the rport (RFC3581) function.
(Default: 0)
Note 17

Input a string that specifies the service provider in maximum of 128 characters.

[IPv4]

```
MG(SIP) > set sip_server
```

```
Select SIP server type.
 0=IPAddress(default)
 1=FQDN
Input:0
```

When IP address (=0) is selected.
(Default: 0)

```
Input SIP server IP Address.
(default=0.0.0.0)
:192.168.100.100
```

Assign the IP address of the proxy server.
(Default: 0.0.0.0)

```
Input SIP server Port Number.
(1024-65535(default=5060)):5060
```

Assign the port number of the proxy server.
(Default: 5060)

```
Select SIP server Router type.
 0=Strict(default)
 1=Loose
Input:0
```

Select a Strict router or Loose router for the proxy server.
(Default: 0)
0: Strict router
1: Loose router
Select "0".

```
Select the setting of rport(RFC3581)
function.
 0=disable (default)
 1=enable
Input: 0
```

Enable/disable the rport (RFC3581) function.
(Default: 0)

```
Input Domain Name.(default=0,
MAX128(strings))
```

Input a string that specifies the service provider in maximum of 128 characters.

When FQDN (=1) is selected:

```
MG(SIP) > set sip_server
Select SIP server type.
 0=IPAddress(default)
 1=FQDN
Input:1
```

When FQDN (=1) is selected.

```
Input Fully Qualified Domain Name.(default=0,
MAX63(strings))
```

Assign the FQDN of the proxy server in maximum of 63 characters (default: 0).

```
Input SIP server Port Number.
(1024-65535(default=5060)):5060
```

Assign the port number of the proxy server.
(Default: 5060)

```
Select SIP server Router type.
 0=Strict(default)
 1=Loose
Input:0


Input Domain Name.(default=0,
MAX128(strings))
```

Select a Strict router or Loose router for the proxy server.
(Default: 0)
0: Strict router
1: Loose router
Select "0".

Input a string that specifies the service provider in maximum of 128 characters.

Note: The conditions of this command are as follows.

- Pressing the Enter key can skip the item, with exceptions of "SIP server type" and "IPaddress/FQDN".
- If you have set a character string to specify the service provider, the character string is used as the SIP domain name.
- Be sure not to enter a blank character to the end of the FQDN (with the Copy and Paste features of your personal computer), and be careful not to mistype a character. ("0"(zero) or "O" (alphabetical O), for example.)
- Even though the setting of rport(RFC3581) is disabled, the rport parameter can be received.
- INVITE message defined in RFC3581 cannot be retransmitted.

(63) sip_tel_service

Setting of additional services

The command is used to enable/disable the use of additional service features (Hold/Retrieve/Transfer from the SIP network side terminal).

[Setting Example]

```
MG(SIP) > set sip_tel_service

Select SIP telephony service function.
 0=disable(default)
 1=enable
Input:1
```

0: additional service feature is disabled. (Default)
1: additional service feature is enabled.
Note 13

Note 13: When using FAX data, assign "1 (enable)" for this parameter.

When enable (=1) is selected, the following screen is displayed. (When disable is selected, no screen is displayed.)

```
Select Replaces function.
 0=enable(default)
 1=disable
Input:0
```

Enable/disable Replaces function.
0: enable (Default)
1: disable

```
Select Hold [a=inactive] function.
 0=enable(default)
 1=disable
Input:0
```

0: a=inactive hold function is enabled. (Default)
1: a=inactive hold function is disabled.

```
Select Hold [put off hold] function.
 0=disable(default)
 1=enable
Input:1
```

Enable/disable hold (put off hold) function.
0: disable (Default)
1: enable **Note 14**

```
Select REFER/NOTIFY function.
 0=enable
 1=disable(default)
Input:0
```

Enable/disable REFER/NOTIFY function.
0: enable **Note 15**
1: disable (Default)

```
Select 3PCC function.
 0=enable
 1=disable(default)
Input:0
```

Enable/disable 3PCC (3rd Party Call Control) function.
0: enable
1: disable (Default)

When enable (=0) is selected for 3PCC function, the following screen is displayed. (When disable is selected, no screen is displayed.)

```
Select 3PCC function(codec).
 0=PCMU
 1=PCMA
 2=AUTO(default)
Input:0
```

Select 3PCC function (codec). **Note 16**
0: Fixed to μ-law
1: Fixed to A-law
2: MGC Control (Telephony Server System Data)* (Default) **Note 17**
*: μ-law is set if no Telephony Server System Data is set.

```
Select Unhold w/o SDP function.
 0=disable (default)
 1=enable
Input:1
```

Enable/disable Unhold w/o SDP function.
0: disable (Default)
1: enable
Note 18

Note: The conditions of this command are as follows.
- Assign this command adjusting to the specifications on the SIP network where MG-SIP connects.
- Music On Hold may not be sent to some remote terminals if this command is not enabled.

Note 14: When this parameter is enabled, answer “Unhold” for Hold Offer (C=0.0.0.0).

Note 15: To use MG-SIP REFER BASED TRANSFER [M-132], assign “0 (enable)” for REFER/NOTIFY function.

Note 16: When INVITE without SDP is received, the following conditions are applied.
- Only G.711 (20ms) μ-law/A-law connection is available.
- AMGVL/AIVCL data assignment cannot give an offer.

Note 17:
- When "2=AUTO (default)" is selected, the codec used for 3PCC function (codec) complies with the A-law/μ-law information which the Telephony Server informs MG-SIP.
- In the Telephony Server side, by the system data assignment (ASYD, SYS1, Index 64, Bit 0), either μ-law or A-law can be specified as the A-law/μ-law information which the Telephony Server informs MG-SIP.
- The Telephony Server informs MG-SIP the A-law/μ-law information only when the MG-SIP performs registration.
- When you change the system data (ASYD, SYS1, Index 64, Bit 0) during operation, the data change will be reflected after rebooting MG-SIP.

Note 18: If a reINVITE without SDP is received while being on hold, the following happens depending on the settings.
- disable: the hold is maintained.
- enable: the hold is released.

(64) sip_transport

Setting of SIP transport protocol

This command is used to select whether SIP requests to be sent with TCP or UDP as the transport protocol.

[Setting Example]

```
MG(SIP) > set sip_transport

Select the setting of SIP Transport
Protocol.
 0=UDP(default)
 1=TCP
Input:1
```

Select the setting of SIP Transport Protocol.
0: UDP (Default)
1: TCP

(65) slipresp

Setting of error response codes used when bypassing a SIP server

This command is used to determine an error response code that is sent in order to prompt a SIP server to bypass when all the resources of MG-SIP are busy.

[Setting Example]

```
MG(SIP) > set slipresp

Input SIP server slip response code.
(400-699(default=488)):488
```

Set the error response code.
(400 to 699, Default: 488)

Note: Assign this command adjusting to the specifications on the SIP network where MG-SIP connects.

(66) softdsp

Setting of A-law /μ-law converting and PAD value

This command is used for the settings of the A-law /μ-law converting feature and for the PAD value settings. The following table shows the operating status of MG (SIP) when the A-law /μ-law converting feature is enabled.

When MG (SIP) receives an incoming call

Station Side (ASYD SYS1 INDEX64 BIT0)	MG (SIP) Codec Convert Mode	Network Side	Operating Status	Conversion
A-law	μ-law	μ-law	Normal Communication	Performed
A-law	μ-law	A-law	Normal Communication	Not performed
A-law	μ-law	G.729	Error Response	Not performed
A-law	A-law	A-law	Normal Communication	Not performed
A-law	A-law	μ-law	Normal Communication	Performed
A-law	A-law	G.729	Error Response	Not performed
μ-law	μ-law	μ-law	Normal Communication	Not performed
μ-law	μ-law	A-law	Normal Communication	Performed
μ-law	μ-law	G.729	Error Response	Not performed
μ-law	A-law	A-law	Normal Communication	Performed
μ-law	A-law	μ-law	Normal Communication	Not performed
μ-law	A-law	G.729	Error Response	Not performed

When MG (SIP) places an outgoing call

Station Side (ASYD SYS1 INDEX64 BIT0)	MG (SIP) Codec Convert Mode	Network Side	Operating Status	Conversion
A-law	μ-law	μ-law	Normal Communication	Performed
A-law	μ-law	A-law	Error Response	Not performed
A-law	μ-law	G.729a	Error Response	Not performed
A-law	A-law	A-law	Normal Communication	Not performed
A-law	A-law	μ-law	Error Response	Not performed
A-law	A-law	G.729a	Error Response	Not performed
μ-law	μ-law	μ-law	Normal Communication	Not performed
μ-law	μ-law	A-law	Error Response	Not performed
μ-law	μ-law	G.729a	Error Response	Not performed

When MG (SIP) places an outgoing call

Station Side (ASYD SYS1 INDEX64 BIT0)	MG (SIP) Codec Convert Mode	Network Side	Operating Status	Conversion
μ-law	A-law	A-law	Normal Communication	Performed
μ-law	A-law	μ-law	Error Response	Not performed
μ-law	A-law	G.729a	Error Response	Not performed

The followings are the setting example:

When enabling/disabling the A-law /μ-law converting feature

```
MG(SIP) > set softdsp
<< Current Setting >>
codec convert mode  : disable
PAD setting         : disable
Select the PCM codec convert mode
according to SIP side.
  0 = disable (default)
  1 = PCMU
  2 = PCMA
Input  : 1
Select the PAD setting for voice/FAX.
  0 = disable (default)
  1 = local setting
  2 = auto
Input  : 0
```

Displays the current setting.

0: Disabled (default)
1: μ-law
2: A-law

Select the settings for PAD value adjusting.
0: Disable PAD value adjusting feature
1: Adjusting PAD value according to the configuration data setting.
2: Adjusting PAD value according to the settings on the Telephony Server.

Note: The PAD value settings are also needed to be assigned when enabling the A-law /μ-law converting.

When adjusting PAD value according to the configuration data setting.

```
MG(SIP) > set softdsp
<< Current Setting >>
codec convert mode  : disable
PAD setting         : disable
```

Displays the current setting.

```
Select the PCM codec convert mode
according to SIP side.
  0 = disable (default)
  1 = PCMU
  2 = PCMA
Input  : 1

Select the PAD setting for voice/FAX.
  0 = disable (default)
  1 = local setting
  2 = auto
Input  : 1


Input PAD reception setting for voice.
[-20 (dB) - 20 (dB) ]  : -20
Input PAD transmission setting for voice.
[-20 (dB) - 20 (dB ) ] : 20
Input PAD reception setting for FAX.
[-20 (dB) - 20 (dB) ]  : -20
Input PAD transmission setting for FAX.
[-20 (dB) - 20 (dB) ]  : 20
```

0: Disabled (default)
1: μ-law
2: A-law

Select the settings for PAD value adjusting.
0: Disable PAD value adjusting feature
1: Adjusting PAD value according to the configuration data setting.
2: Adjusting PAD value according to the settings on the Telephony Server.

Assign PAD value for each setting.

Note: The A-law /μ-law converting feature setting is also needed to be assigned when enabling the PAD value adjusting feature.

When adjusting PAD value automatically.

```
MG(SIP) > set softdsp
<< Current Setting >>
codec convert mode  : disable
PAD setting         : disable
Select the PCM codec convert mode
according to SIP side.
  0 = disable (default)
  1 = PCMU
  2 = PCMA
Input  : 1
```

Displays the current setting.

0: Disabled (default)
1: μ-law
2: A-law

```
Select the PAD setting for voice/FAX.
  0 = disable (default)
  1 = local setting
  2 = auto
Input  : 2
```

Select the settings for PAD value adjusting.
0: Disable PAD value adjusting feature
1: Adjusting PAD value according to the configuration data setting
2: Adjusting PAD value according to the settings on the Telephony Server.

Note: The A-law /μ-law converting feature setting is also needed to be assigned when enabling the PAD value adjusting feature.

(67) update

Setting of update method

This command is used to enable/disable the use of update method.

[Setting Example]

```
MG(SIP) > set update

Select the setting of UPDATE method.
 0=disable(default)
 1=enable
Input:0
```

0: Update method is disabled (Default)
1: Update method is enabled

Note: Assign this command adjusting to the specifications on the SIP network where MG-SIP connects.

4.3.3.3 show Command

(1) arp

Displaying of ARP table

This command is used to show the Address Resolution Protocol (ARP) table of MG-SIP.

[Setting Example]

```
MG(SIP)> show arp
AddressNote 1  HWtype  HWaddressNote 2     Flags MaskNote 3 Iface
192.168.0.250 ether   00:1D:92:9E:2A:E0 C                  eth0
192.168.0.99  ether   00:B0:D0:31:FE:64 C                  eth0
192.168.0.1   ether   00:30:13:76:7B:52 C                  eth0
```

Note: Actual values such as Address or HWaddress may differ from this sample.

Note 1: Address: IP address (IP address or host name of an entry)

Note 2: HWaddress: Physical address /Hardware address (For Ethernet, MAC address of an entry)

Note 3: Flags Mask: Entry type (C: Used for normal entries only.)

(2) config

Displaying of a configuration data list

This command is used to show the configuration that has been currently specified for the MG-SIP.

The following shows a sample display.

[MAC configuration data]

```
MG(SIP)> show config
[2012-05-05 14:49:29]

[SP-4085:01.00.00.00]

0=MAC Data

1=DRS Data

2=Common Config Data

3=Port Config Data
```

Time when the configuration is acquired.

Software version information of MG-SIP

MAC Data=MAC configuration data

DRS Data=Configuration data of the Telephony Server

Common Config Data=Common configuration data

Port Config Data=Port configuration data

```
4=SIP Config Data

5=Route Config Data

9=Exit

Select a reference number:0

Ether[1]
MAC Address:00-00-00-00-00-00

Ether[2]
MAC Address:00-00-00-00-00-00
```

SIP Config Data=SIP configuration data

Route Config Data=Route information configuration data

End of show command

Select “0”.

MAC addresses of Ether [1] [2] of MG-SIP

[DRS configuration data]

```
MG(SIP)> show config

[2012-05-05 14:49:29]

[SP-4085:01.00.00.00]

0=MAC Data

1=DRS Data

2=Common Config Data

3=Port Config Data

4=SIP Config Data

5=Route Config Data

9=Exit

Select a reference number:1

Primary DRS IP Address:0. 0. 0. 0:PortNo[3456]
Secondary DRS IP Address:0. 0. 0. 0:PortNo[3456]
Tertiary DRS IP Address:0. 0. 0. 0:PortNo[3456]
Quaternary DRS IP Address:0. 0. 0. 0:PortNo[3456]
```

Time when the configuration is acquired.

Software version information of MG-SIP

MAC Data=MAC configuration data

DRSData=Configuration data of the Telephony Server

Common Config Data=Common configuration data

Port Config Data=Port configuration data

SIP Config Data=SIP configuration data

Route Config Data=Route information configuration data

End of show command

Select “1”.

IP address and port number of the currently configured DRS will be displayed.

[Common configuration data]

```
MG(SIP)> show config
[2012-05-05 14:49:29]

[SP-4085:01.00.00.00]

0=MAC Data

1=DRS Data

2=Common Config Data

3=Port Config Data

4=SIP Config Data

5=Route Config Data

9=Exit
Select a reference number:2
set signaling_port_no:
 Signaling Port Number        :61012
-------------------------------------------------
set registration_port_no:
 Registration Port Number     :3456
-------------------------------------------------
set pre_negotiation_port_no:
 Pre-negotiation Port Number  :61014
-------------------------------------------------
set ipx_rtp_port_no:
 IPX side RTP port number     :51000
-------------------------------------------------
set sip_rtp_port_no:
```

Time when the configuration is acquired.

Software version information of MG-SIP

MAC Data=MAC configuration data

DRSData=Configuration data of the Telephony Server

Common Config Data=Common configuration data

Port Config Data=Port configuration data

SIP Config Data=SIP configuration data

Route Config Data=Route information configuration data

End of show command

Select 2

Currently assigned config data will be displayed.

```
 SIP side RTP port number     :50000
-----------------------------------------------
set h245_base_port_no:
 H245 base port number        :40000
-----------------------------------------------
set sip_media_port_no:
 SIP side Media Port Number for video:53000
 SIP side Media Port Number for T.38 :54000
-----------------------------------------------
set ipx_media_port_no:
 IPX side Media Port Number for video:55000
 IPX side Media Port Number for T.38 :56000
-----------------------------------------------
Does it display more? Y/N=y




-----------------------------------------------
set drs_qos:
DRS QoS:0xa0                  :0xa0
 PRECEDENCE                   :5
 DELAY                        :0
 THROUGHPUT                   :0
 RELIABILITY                  :0
 COST                         :0
-----------------------------------------------
set rtp_qos:
```

After displaying about 20 lines of config data, you can select if you want to see more data or not.
To see the config data more, enter “y”. To exit this command, press “n”.

```
RTP QOS                         :0xa0
 PRECEDENCE                     :5
 DELAY                          :0
 THROUGHPUT                     :0
 RELIABILITY                    :0
 COST                           :0
-------------------------------------------------
Does it display more? Y/N=y
-------------------------------------------------
set sip_qos:
SIP QOS                         :0xa0
 PRECEDENCE                     :5
 DELAY                          :0
 THROUGHPUT                     :0
 RELIABILITY                    :0
 COST                           :0
-------------------------------------------------
set domain:
 Domain name                    :0
-------------------------------------------------
set dnsaddress:
 DNS IP address                 :0.0.0.0
-------------------------------------------------
```

```
set hc_alarm:
 H/C Alarm type         :IPX and SIP Side enable
```

H/C Alarm type display varies depending on the type that is assigned by the "set hc_alarm."

- When assigned the Telephony Server network side and SIP network side: "IPX and SIP side enable"
- When assigned the Telephony Server network side: "IPX side enable"
- When assigned SIP network side: "SIP side enable"
- When assigned not to send: "Disable"

```
-------------------------------------------------
set hc_timer:
 H/C Timer value              :240sec
-------------------------------------------------
set musictype:
 Music Type                   :Type1
```

Display (Type1/Type2/Type3/ Type4) depends on which type you set.

```
-------------------------------------------------
set call_hold:
 Call Hold function           :enable
 RTP detect timer value       :3sec
 Response code to reject      :488
```

Displays the current setting of MG Based Call Retention. When "disable" is selected by a SET command "call_hold", "disable" is displayed, but "RTP detect timer value" and "Response code to reject" are not displayed.

```
-------------------------------------------------
set name_display :
 Name Display                 : enable
```

Displays the current setting of Name Display service.

```
-------------------------------------------------
set ip_version :
 IP Version                  : IPv4
-------------------------------------------------
set country_code :
 Country Code                : 1 (JP)
-------------------------------------------------
set softdsp:
 codec convert mode          :PCMU
 PAD setting                 :local setting
 PAD reception(voice)        :-20
 PAD transmission(voice)     :20
 PAD reception(FAX)          :-20
 PAD transmission(FAX)       :20
-------------------------------------------------
set enc:
 IPX side RTP encrypting mode :enable

-------------------------------------------------
```

Displays the current setting of the IP version.

Displays the current setting of Country Code.

Displays the current settings of codec conversion and PAD value.

Displays the current settings of the RTP encrypting mode on Telephony Server network. **Note 4**

Note 4: This parameter is available for SP-4085 MGSIPVM PROG-E Issue 3.0 or later.

[Port configuration data]

```
MG(SIP)> show config
[2012-05-05 14:49:29]

[SP-4085:01.00.00.00]

0=MAC Data

1=DRS Data

2=Common Config Data

3=Port Config Data
```

Time when the configuration is acquired.

Software version information of MG-SIP

MAC Data=MAC configuration data

DRSData=Configuration data of the Telephony Server

Common Config Data=Common configuration data

Port Config Data=Port configuration data

```
4=SIP Config Data

5=Route Config Data

9=Exit
Select a reference number:3
Using all port

Ether[1]
 IP address:172.16.253.200
 Subnet    :255.255.255.0
 Interface :Speed/Duplex=Auto/Auto
 Port type :IPX Side Port
Ether[2]

 IP address:192.168.35.200
 Subnet    :255.255.255.0
 Interface :Speed/Duplex=Auto/Auto
 Port type :SIP Side Port
```

SIP Config Data=SIP configuration data

Route Config Data=Route information configuration data

End of show command

Select “3”.

Data that is set to each port number is displayed.

If “one-port only” is selected with the “set ipaddress” command, only Ether [1] is displayed. Also, it is displayed whether Ethernet Port Redundancy function is enabled or disabled.

Example: Ethernet Port Redundancy function: enable

Displays the current setting of the Ether[2] information. When IPv6 (=1) is selected by “set ip_version” command, this IP address will be shown in IPv6 address format.

[SIP configuration data]

```
MG(SIP)> show config
[2012-05-05 14:49:29]

[SP-4085:01.00.00.00]

0=MAC Data

1=DRS Data

2=Common Config Data

3=Port Config Data
```

Time when the configuration is acquired.

Software version information of MG-SIP

MAC Data=MAC configuration data

DRSData=DRS configuration data

Common Config Data=Common configuration data

Port Config Data=Port configuration data

```
4=SIP Config Data

5=Route Config Data

9=Exit

Select a reference number:4

set sip_server:

Server type                         :IP Address
Server IP Address                   :0.0.0.0









SIP server Port Number              :5060
SIP server Router type              :Strict
rport(RFC3581) function             :disable
Domain Name                         :0
-------------------------------------------------
set sip_register:
SIP register type                   :IP Address
SIP register IP Address             :0.0.0.0




SIP register Port Number            :5060
SIP register Expires time           :3600sec
-------------------------------------------------
```

SIP Config Data=SIP configuration data

Route Config Data=Route information configuration data

End of show command

Select “4”.

Currently assigned common config data will be displayed.

When FQDN is set by a SET command “sip_server”, “SIP server FQDN”, not “SIP server IP Address”, is displayed.

Displays the current setting of the Server IP Address.
When IPv6 (=1) is selected by “set ip_version” command, this IP address will be shown in IPv6 address format.

Displays the current setting of the SIP register IP Address.
When IPv6 (=1) is selected by “set ip_version” command, this IP address will be shown in IPv6 address format.

```
set keynumber:
Keynumber                          :0
-----------------------------------------------
set auth:
User ID                            :0
Password                           :0
-----------------------------------------------
Does it display more? Y/N=y
```

After displaying about 20 lines of config data, you can select if you want to see more data or not.
To see the config data more, enter "y". To exit this command, press "n".

```
-----------------------------------------------
set privacy_pattern:
 Privacy pattern                   :DisplayName
```

When "DisplayName" is selected by the SET command "privacy_pattern", "DisplayName" is shown. When RFC3325 Pattern (0) is selected, "RFC3323/3325 (0)" is shown. When Pattern (1) is selected, "RFC3323/3325 (1)" is shown. When Pattern (6) is selected, "RFC3325 (SIP-URI (no privacy))" is shown.

```
-----------------------------------------------
set session_timer:
Session-timer                      :enable
```

When "disable" is selected by the SET command "Session_timer", "disable" is displayed. In this case, "Session-expires" and "Refresher" are not displayed.

```
Session-expires                    :180sec
Refresher                          :UAC
```

When UAS is selected for Refresher, "UAS" is displayed.

```
Invite Refresher                    :disable


Forced mode                         :disable


reInvite Refresher                  :disable


set prack:
Supported 100rel                    :enable


Stop cyclical-send of 18x           :disable


-------------------------------------------------
set cdn_pattern:
 Prior Called Party Number pattern:To[userinfo]


-------------------------------------------------
set sip_port_no:
 SIP Port Number                    :5060
-------------------------------------------------
Does it display more? Y/N=y
-------------------------------------------------
set 184ToPrivacy:
```

When "enable" is selected for "Invite Refresher" by the SET command "session_timer", "enable" is displayed.

When "enable" is selected for "Forced mode" by the SET command "session_timer", "enable" is displayed.

When "enable" is selected for "reInvite Refresher" by the SET command "session_timer", "enable" is displayed. **Note**

When "disable" is selected by the SET command "prack", "disable" is displayed.

"enable" may be displayed according to the setting.
When "set prack" is disabled, nothing is displayed.

When "Request-URI[isub]" is selected by the SET command "cdn_pattern", "Request-URI[isub]" is displayed, and when "Request-URI[userinfo]" is selected, "Request-URI[userinfo]" is displayed, and "P-Called-Party-ID" is selected, "P-Called-Party-ID" is displayed.

```
 184 to privacy pattern           :disable


-------------------------------------------------
set slipresp:
 SIP server slip response code    :488
-------------------------------------------------
set self_sip_domain:
 Self SIP Domain mode             :disable


-------------------------------------------------
Does it display more? Y/N=y
-------------------------------------------------
set dtmf_mode:
DTMF Mode                  :Negotiation(SIP/SDP)


DTMF Duration                    :120ms
DTMF Pause                       :100ms
Payload type                     :101

-------------------------------------------------
set 183rbt:
 RBT Addition (183w/oSDP)         :enable


-------------------------------------------------
```

When “Pattern 1” is selected by the SET command “184topri-vacy”, “Pattern 1” is displayed, and when “Pattern 2” is selected, “Pattern 2” is displayed.

When “enable” is selected by the SET command “self_sip_do-main”, “enable” is selected as well as the set domain name.
Example) Self SIP Domain string: xxxxxxxx

When “In-Band” is the mode set by a SET command “dtmf_mode”, “IN-Band (G.711) is displayed, and when “Out-Band” is selected, “Out-Band (RFC2833)” is dis-played.

When DTMF Mode is In-Band, Payload type is not displayed.

When “disable” is selected by the SET command “183rbt”, “dis-able” is displayed.

```
set rtp_pathon:
 Path-on 183 after 180            :disable


-------------------------------------------------
set another_keynumber:
Another Keynumber 1               :0
Another Keynumber 2               :0
Another Keynumber 3               :0
-------------------------------------------------
Does it display more? Y/N=y
-------------------------------------------------
set multi_regist:
 Multi-registration mode          :disable









-------------------------------------------------
set sip_tel_service:
 SIP telephony service function   :disable
-------------------------------------------------
set reg_interval:
 REGISTER interval timer          :5min
-------------------------------------------------
set update:
 UPDATE method support function   :disable
```

When “enable” is selected by the SET command “typ-pathon”, “enable is displayed.

When “enable” is selected by SET command “multi-regist”, “enable” is displayed as well as the following:

Transmitting interval timer: 1sec
Standby timer value: 30sec
Contact Header type: Privacy or SIP-URI

When “disable” is set, nothing is displayed.

Note 5

When “enable” is selected by the SET command “update”, “enable” is displayed.

```
------------------------------------------------
set auth_header:
 Auth-Header Cache function       :enable


------------------------------------------------
Does it display more? Y/N=y
------------------------------------------------
set cause_table:
 Cause table                      :normal




------------------------------------------------
set response_table:
 Response table                   :normal




------------------------------------------------
set cpn_pattern:
 Prior Calling Party Number pattern:DisplayName









------------------------------------------------
set cc_convert:
 Country Code convert             :disable


------------------------------------------------
set check_number:
```

When “disable” is selected by the SET command “auth_header”, “disable” is displayed.

When “alternate routing/Route Advance” is selected by the SET command “cause_table”, “alternate routing/Route Advance” is displayed.

When “revised_table” is selected by the SET command “response_table”, “revised_table” is displayed.

When “Userinfo” is selected by the SET command “cpn_pattern”, “Userinfo” is displayed, when “Anonymous” is selected, “Anonymous” is displayed, and when “P-Asserted-ID” is selected, “P-Asserted-ID” is displayed.

When “enable” is selected by the SET command “cc_convert”, “enable” is displayed.

```
 telephone-number check function  :disable


-------------------------------------------------
set out_of_area_code:
 Response code when out of area   :408(default)


-------------------------------------------------
set sdp_style:
 SDP style setting                :RFC4566

 G729 annexb=no                   :enable


-------------------------------------------------
set call_id_relay:
 Call-ID relay mode               :disable


-------------------------------------------------
set sip_accfilter:
```

When “enable” is selected by the SET command “check_number”, “enable” is displayed.

The number for a response code set by the SET command “out-_of_area_code” is displayed.

When “normal” is selected by the SET command “sdp_style”, “normal” is displayed.

When “disable” is selected by the SET command “sdp_style”, “disable” is displayed.

When “enable” is selected by the SET command “call_id_relay”, “enable” is displayed.

```
 SIP Access Filter                :disable
```

When “enable” is selected for “SIP Access Filter” by the SET command “sip_accfilter”, “enable” and the following settings are displayed:

- When IP address is assigned by the SET command “sip_server”
  (SIP server IP Address: 192.168.100.100)
  SIP Access Filter mask: 255.255.255.255
- When FQDN is assigned by the SET command “sip_server”
  (SIP server FQDN: sipserver.nec.com)
  SIP Access Filter mask: 255.255.255.255

When “disable” is selected for “SIP Access Filter”, the above settings are not shown.

```
 Burst Access Filter              :disable
```

When “enable” is selected for “Burst Access Filter” by the SET command “sip_accfilter”, “enable” and the following settings are displayed:
Burst Access Filter: enable
Burst Access limit timer value: 30
Burst Access limit number value: 500
Burst Access reject response code: 600

When “disable” is selected for “Burst Access Filter”, the above settings are not shown.

```
------------------------------------------------

set sip_transport:
 SIP transport protocol           :UDP
```

When “TCP” is selected by the SET command “sip_transport”, “TCP” is displayed.

```
-----------------------------------------------
set dns_option:
 DNS type                    :Locating SIP
                              servers function
                              (RFC3263)
 DNS cache                   :enable
-----------------------------------------------
set codec_change:
 Codec Change function            :enable
 G711 Fax renegotiation           :enable

-----------------------------------------------
set no_media_code:
 Response code(unsupported codec) :415

-----------------------------------------------
set ppi_to_pai:
 PAID transmission function       :enable

-----------------------------------------------
set nataddress:
 NAT IP Address              :189.10.3.41

-----------------------------------------------
set rfc2833_pass:
 RFC2833 RTP Event Pass           :disable

-----------------------------------------------
```

Locating SIP servers function (RFC3263) data and DNS cache data are displayed.

When “disable” is selected by the SET command “codec_change”, “disable” is displayed.

The number for a response code specified by “no_media_code” command is displayed.

When “disable” is selected by the SET command “ppi_to_pai”, “disable” is displayed.

Displays the current setting of NAT IP Address.

When “disable” is selected by the SET command “rfc2833_pass”, “disable” is displayed.

Note 5: The conditions of “SIP telephony service function” are as follows.

- When “SIP telephony service function” is enabled by the SET command “sip_tel_service”, “enable” is displayed, as well as enablement/disablement of the

following settings:
Replaces function
Hold [a=inactive] function
Hold [put off hold] function
REFER/NOTIFY function
3PCC function

- When “SIP telephony service function” is disabled by the SET command “sip_tel_service”, the following is displayed:
  “SIP telephony service function: disable”
  Then nothing is displayed below “SIP telephony service function: disable”.
- “3PCC function(codec)” and “Unhold w/o SDP function” are displayed only when 3PCC function is enabled by the SET command “sip_tel_service”.
- The following is an example of display when “SIP telephony service function” is enabled by the SET command “sip_tel_service”.

```
 SIP telephony service function   :enable
 Replaces function                :enable
 Hold [a=inactive] function       :enable
 Hold [put off hold] function     :enable
 REFER/NOTIFY function            :enable
 3PCC function                    :enable
 3PCC function(codec)             :PCMU
 Unhold w/o SDP function          :enable
```

[Route information configuration data]

```
MG(SIP)> show config
[2012-05-05 14:49:29]

[SP-4085:01.00.00.00]

0=MAC Data

1=DRS Data

2=Common Config Data

3=Port Config Data

4=SIP Config Data

5=Route Config Data
```

Time when the configuration is acquired.

Software version information of MG-SIP

MAC Data=MAC configuration data

DRS Data=DRS configuration data

Common Config Data=Common configuration data

Port Config Data=Port configuration data

SIP Config Data=SIP configuration data

Route Config Data=Route information configuration data

```
9=Exit
Select a reference number : 5
Ether[1]

 Route type:Static
No|Gateway Address|Destination network/Prefix
-------------------------------------------------
1 |192.168.0.254  |172.16.0.0        /16
Ether[2]
 Route type:Static
No|Gateway Address|Destination network/Prefix
-------------------------------------------------
1 |192.168.0.254  |0.0.0.0           /0
```

End of show command

Select “5”.

Data currently configured to each port number will be displayed.

When IPv6 (=1) is selected by “set ip_version” command, Gateway Address and Destination network will be shown in IPv6 address format.

(3) interface

Displaying of Link and Display states of Ether

This command is used to show the link and setting states for Ether ports of MG-SIP.

Note: When NEC Express 5800 FT server is used as host server, the values displayed with this command may be wrong. For an explanation, see [Software Model Installation Manual] - [SOFTWARE MODEL INSTALLATION AND SETUP] - [Before Installation].

[Setting Example]

```
MG(SIP)> show interface
Using one-port only
Ether[1]  Link up
MAC Address  :00-00-00-00-00-00
IP Address   :10.1.0.1
Subnet mask  :255.255.255.0
Interface    :Speed/Duplex=Auto/Auto
```

The number of ports in use.

Link state

MAC address

IP address

Subnet mask

Operation speed and operation mode

(4) version

Displaying of version information

This command is used to display version information of MG-SIP functions (base system and firmware).

[Setting Example]

```
MG(SIP)> show version

Firmware Information   |SPNo     |Issue

-----------------------+---------+--------------

Base System Version    |-------  |Ver2.6.18 Fri Mar
9 16:45:44 JST 2015

SP-4085 MGSIP PROG-D   |SP-4085  |Ver01.00.00.00
```

Version information of the base system.

Software version information of MG-SIP

(5) route

Displaying of Route table

This command is used to show the Route Table of MG-SIP.

[Setting Example]

```
MG(SIP)> show route

Kernel IP routing table

                                    Note 6 Note 7  Note 8  Note 9       Note 10Note 11  Note 12
Destination Gateway Genmask         Flags Metric Ref    Use  Iface MSS    Window irtt
172.16.0.0  *       255.255.0.0     U     0      0      0    eth1  0      0      0
192.0.0.0   *       255.0.0.0       U     0      0      0    eth0  0      0      0
```

Note: The conditions of this command are as follows.
- Actual values such as Destination or Genmask may differ from this sample.
- It may take time to display the route table information when DNS server IP address has been assigned. (“set dnsaddress”)
- Settings of “Flags”, “Metric”, Ref”, “Use”, “MSS”, “Window” and “irtt” do not affect the operation of MG-SIP directly.

Note 6: Flags: Indicates a route type. (“U” is usable, “H” is host, “G” is gateway.)

Note 7: Metric: Indicates route metric. (In the range of one to 9999.)

Note 8: Ref: Indicates the number that the route is referred.

Note 9: Use: Indicates the number that the route was actually used (routed).

Note 10: MSS: Indicates the Maximum Segment Size (MSS: Maximum data size of a TCP segment) at a route.

Note 11: Window: Indicates a window size of TCP.

Note 12: irtt: Indicates the initial round-trip time of TCP connections to each route. MG-SIP regards a TCP connection where no reply lasts for the round-trip time (1 to 12000) as no connection.

(6) status

Displaying status of ports and registration

This command is used to show status of ports and registration on MG-SIP.

[Setting Example]

- If displaying port status

```
MG(SIP)> show status

0:Port status
1:IPX status
2:SIP status
3:CH status
9:Exit

Select a reference number:0

IPX Port link up(100Base-TX/Full)
SIP Port link up(100Base-TX/Full)
```

0: Port status (Default)
1: Telephony Server network registration status
2: SIP network registration status
3: Information of channels in use
9: Exit

Note 13, **Note 14**

Note 13: The following describes display of port status.

Port type	Status of port to LAN	Status of port to SIP network
1000M/Full	IPX port link up (1000Base-T/Full)	SIP port link up (1000Base-T/Full)
100M/Half	IPX port link up (100Base-TX/Half)	SIP port link up (100Base-TX/Half)
100M/Full	IPX port link up (100Base-TX/Full)	SIP port link up (100Base-TX/Full)
10M/Half	IPX port link up (10Base-T/Half)	SIP port link up (10Base-T/Half)
10M/Full	IPX port link up (10Base-T/Full)	SIP port link up (10Base-T/Full)
Link Down	IPX port link down	SIP port link down

Note 14: When NEC Express 5800 FT server is used as host server, the values displayed with this command may be wrong. For an explanation, see [Software Model Installation Manual] - [SOFTWARE MODEL INSTALLATION AND SETUP] - [Before Installation].

- If displaying status of registration to LAN (Telephony Server side)

```
MG(SIP)> show status
```

```
0:Port status
1:IPX status
2:SIP status
3:CH status
9:Exit

Select a reference number:1

IPX Registration Information
Registration is OK. (DRS IP address
192.168.0.1)
```

0: Port status (Default)
1: Telephony Server network registration status
2: SIP network registration status
3: Information of channels in use
9: Exit

Note 15

Note 15: Display changes depending on the registration status:
When MG-SIP is trying to register:Now Registrating.
After MG-SIP successfully registered:Registration is OK. (DRS IP address 192.168.0.1)
(The IP address succeeding in registration appears as well.)

- If displaying status of registration to SIP network (when the registration function per number is disabled)

```
MG(SIP)> show status

0:Port status
1:IPX status
2:SIP status
3:CH status
9:Exit

Select a reference number:2

SIP Registration Information
Registration is OK.
```

0: Port status (Default)
1: Telephony Server network registration status
2: SIP network registration status
3: Information of channels in use
9: Exit

Note 16

Note 16: Display changes depending on the registration status:

When MG-SIP is trying to register:	Now Registrating.
After MG-SIP successfully registered:	Registration is OK.
After MG-SIP fails to register:	Registration is NG. Waiting Re-Registration timer. (MG-SIP is trying to register again)
When registration is disabled:	Register Server Configuration data is not set. (No setting data of “set sip_register” command)

- If displaying status of registration to SIP network (when the registration function per number is enabled)

```
MG(SIP)> show status

0:Port status
1:IPX status
2:SIP status
3:CH status
9:Exit

Select a reference number:2

SIP Registration Information

------Registration NG RegIndex------

[MG-No:1]

9 10 11 12 13 14 15 16

[MG-No:2]

[MG-No:3]

[MG-No:4]

[MG-No:5]

[MG-No:6]

[MG-No:7]

[MG-No:8]

[MG-No:9]

[MG-No:10]

[MG-No:11]

[MG-No:12]

[MG-No:13]

[MG-No:14]

[MG-No:15]

------Registration OK RegIndex------

[MG-No:1]

1 2 3 4 5 6 7 8

[MG-No:2]
```

0: Port status (Default)
1: Telephony Server network registration status
2: SIP network registration status
3: Information of channels in use
9: Exit

Note 17

Information on CNTs (RegIndex) failing in registration

MG-No: 1

CNTs failing in registration

MG-No: 2

MG-No: 3

MG-No: 4

MG-No: 5 **Note 17**

MG-No: 6

MG-No: 7

MG-No: 8

MG-No: 9

MG-No: 10

MG-No: 11

MG-No: 12

MG-No: 13

MG-No: 14

MG-No: 15

Information on CNTs (RegIndex) succeeding in registration

MG-No: 1

CNTs succeeding in registration

MG-No: 2

```
[MG-No:3]
[MG-No:4]
[MG-No:5]
[MG-No:6]
[MG-No:7]
[MG-No:8]
[MG-No:9]
[MG-No:10]
[MG-No:11]
[MG-No:12]
[MG-No:13]
[MG-No:14]
[MG-No:15]
-----------------------------------
```

MG-No: 3
MG-No: 4
MG-No: 5
MG-No: 6
MG-No: 7
MG-No: 8
MG-No: 9
MG-No: 10
MG-No: 11
MG-No: 12
MG-No: 13
MG-No: 14
MG-No: 15

Note 17: The example above shows a total of 16 CNTs tried registration, and eight (9 to 16) of them failed.
(Use the ASRIL command to set MG-Nos and a pilot number. CNT is a parameter set with the ASRIL command.)

- If displaying information on channels in use

```
MG(SIP)> show status
0:Port status
1:IPX status
2:SIP status
3:CH Status
9:Exit
Select a reference number:3
---------------------------------------
|  |    0|   1|  2|  3|  4|  5|  6|  7|
---------------------------------------
|  0|ACT(S)| --| --| --| --| --| --| --|
|  8| --   | --| --| --| --| --| --| --|
```

0: Port status (Default)
1: Telephony Server network registration status
2: SIP network registration status
3: Information of channels in use
9: Exit

"ACT(S)"appears for a channel in use; "--" appears for a channel not in use.

```
| 16| --    | --| --| --| --| --| --| --|
| 24| --    | --| --| --| --| --| --| --|
| 32| --    | --| --| --| --| --| --| --|
| 40| --    | --| --| --| --| --| --| --|
| 48| --    | --| --| --| --| --| --| --|
| 56| --    | --| --| --| --| --| --| --|
| 64| --    | --| --| --| --| --| --| --|
| 72| --    | --| --| --| --| --| --| --|
| 80| --    | --| --| --| --| --| --| --|
| 88| --    | --| --| --| --| --| --| --|
| 96| --    | --| --| --| --| --| --| --|
|104| --    | --| --| --| --| --| --| --|
|112| --    | --| --| --| --| --| --| --|
|120| --    | --| --| --| --| --| --| --|
|128| --    | --| --| --| --| --| --| --|
|136| --    | --| --| --| --| --| --| --|
|144| --    | --| --| --| --| --| --| --|
|152| --    | --| --| --| --| --| --| --|
|160| --    | --| --| --| --| --| --| --|
|168| --    | --| --| --| --| --| --| --|
|176| --    | --| --| --| --| --| --| --|
|184| --    | --| --| --| --| --| --| --|
|192| --    | --| --| --| --| --| --| --|
|200| --    | --| --| --| --| --| --| --|
|208| --    | --| --| --| --| --| --| --|
|216| --    | --| --| --| --| --| --| --|
|224| --    | --| --| --| --| --| --| --|
|232| --    | --| --| --| --| --| --| --|
|240| --    | --| --| --| --| --| --| --|
|248| --    | --| --| --| --| --|
```

```
----------------------------------------
|            |actch=1|                 |
----------------------------------------
Use Session Count=1
INVITE Client Transaction = 0, max=0

INVITE Server Transaction = 0,  max=0

Other Client Transaction = 0,  max=1

Other Server Transaction = 0,  max=1




The number of Filtered Messages = 0
( Out of Range = 0 , No DNS Cache = 0)



The number of Burst Filtered Messages =
0


MG(SIP)>
```

Number of channels in use

Number of sessions in use

Number of INVITE client transactions and their maximum number

Number of INVITE server transactions and their maximum number

Number of client transactions other than INVITE and their maximum number

Number of server transactions other than INVITE and their maximum number
(the maximum number represents the maximum number counting up to this time from when MG-SIP is turned on.)

Number of SIP packets that were discarded by SIP Access Filter
When “disable” is selected for “SIP Access Filter”, this parameter is not shown.

Number of incoming calls that are rejected by Burst Access Filter
When “disable” is selected for “Burst Access Filter”, this parameter is not shown.

4.3.3.4 Download

This command is used to download MG-SIP program and Music/Tone file via Ether1 port (Ether port on the LAN side).

The following figure shows an example of a display.

[When downloading all programs]

```
MG(SIP) > download

--- Download menu ---

Download of all programs. (default) ---
input:1

Download of one program. --- input:2

Quit --- [Q/q]

Input:1

--- IP Address setting of MG(SIP) ---

Select Ether Port [1(Ether1)/2(Ether2)/
Q(quit)]:1

Current IP Address of MG(SIP):10.41.1.100

Do you change IP Address of MG(SIP)?
[Y(change)/N(current)/Q(quit)]:y

If you want to return to the previous step,
please input 'Q'.

Input new IP Address:172.16.253.100

Current Subnet mask of MG(SIP):255.0.0.0

Do you change Subnet mask of MG(SIP)?
[Y(change)/N(current)/Q(quit)]:y

If you want to return to the previous step,
please input 'Q'.
```

Input “download” at the configuration mode.

To download all programs, enter “1”.

Select a port to use.
(With the default setting, select Ether1. If selecting Ether2, using two ports must be set in the “set ipaddress” command.)

Note: When IPv6 function is in service, download is not available on Ether2. So “2(Ether2)” does not appear.

To change the IP address that is used for downloading, enter “y”.

Enter the IP address.

To change the subnet mask of the selected port, enter “y”.

```
Input new Subnet mask:255.255.0.0


--- IP Address setting of TFTP server ---
Current IP Address of TFTP server:10.41.1.250


Do you change IP Address of TFTP server?
[Y(change)/N(current)/Q(quit)]:y
If you want to return to the previous step,
please input 'Q'.
Input new IP Address:172.16.253.250
IP Address change was completed.
New IP Address of MG(SIP):172.16.253.100
New Subnet mask of MG(SIP):255.255.0.0
New IP Address of TFTP server:172.16.253.250
Are these IP Address correct? [Y(correct)/
N(change)/Q(quit)]
If you enter Y, MG(SIP) ONLINE service will be
stop:y
mgsipmwlist.txt download...
tftpDownload:User file TFTP start.
Received.
SP4085/MAIN/main.tar.gz download...
tftpDownload:User file TFTP start.
Received.
Checksum matched!
SP4085/TONE/tone.tar.gz download...
tftpDownload:User file TFTP start.
Received.
Checksum matched!
SP4085/MUSIC/music.tar.gz download...
tftpDownload:User file TFTP start.
```

Enter a subnet mask.

To change the IP address of a TFTP server, enter “y”.
(Default address: 10.41.1.250)

Enter an IP address.

When the specified IP addresses are correct, enter ‘y’.

```
Received.
Checksum matched!
Download was completed!
Please reboot after a download menu end.


--- Download menu ---
Download of all programs. (default) ---
input:1
Download of one program. --- input:2
Quit --- [Q/q]
Input:q


MG(SIP) >
```

When download is complete, the menu appears again.
Enter ‘q’ to exit download command.

[When downloading one program]

```
MG(SIP) > download

--- Download menu ---
Download of all programs. (default) ---
input:1
Download of one program. --- input:2
Quit --- [Q/q]
Input:2
--- IP Address setting of MG(SIP) ---
Select Ether Port [1(Ether1)/2(Ether2)/
Q(quit)]:1



Current IP Address of MG(SIP):10.41.1.100
Do you change IP Address of MG(SIP)?
[Y(change)/N(current)/Q(quit)]:y
If you want to return to the previous step,
please input 'Q'.
Input new IP Address:172.16.253.100
Current Subnet mask of MG(SIP):255.0.0.0
Do you change Subnet mask of MG(SIP)?
[Y(change)/N(current)/Q(quit)]:y
If you want to return to the previous step,
please input 'Q'.
Input new Subnet mask:255.255.0.0


--- IP Address setting of TFTP server ---
Current IP Address of TFTP server:10.41.1.250


Do you change IP Address of TFTP server?
[Y(change)/N(current)/Q(quit)]:y
```

Enter "download" in configuration mode.

To download one program, enter "2".

Select a port to use.
(With the default setting, select Ether1. If selecting Ether2, using two ports must be set in the "set ipaddress" command.)

To change the IP address that is used for downloading, enter "y".

Enter the IP address.

To change the subnet mask of the selected port, enter "y".

Enter a subnet mask.

To change the TFTP server IP address, enter "y".
(Default address: 10.41.1.250)

```
If you want to return to the previous step,
please input 'Q'.
Input new IP Address:172.16.253.250
IP Address change was completed.
New IP Address of MG(SIP):172.16.253.100
New Subnet mask of MG(SIP):255.255.0.0
New IP Address of TFTP server:172.16.253.250
Are these IP Address correct? [Y(correct)/
N(change)/Q(quit)]
If you enter Y, MG(SIP) ONLINE service will be
stop:y
mgsipmwlist.txt download...
tftpDownload:User file TFTP start.
Received.

--- Program download ---
Main program:0
tone data:1
music data:2
wave file:3
config data:4
Quit:[Q/q]
Input:0
SP4085/MAIN/main.tar.gz download...
tftpDownload:User file TFTP start.
Received.
Checksum matched!
Download was completed!

--- Program download ---
Main program:0
```

Enter the IP address.

When the specified IP addresses are correct, enter ‘y’.

Select a file you want to download.

Download starts.

```
tone data:1
music data:2
wave file:3
config data:4
Quit:[Q/q]
Input:q


Please reboot after a download menu end.


--- Download menu ---
Download of all programs. (default) ---
input:1
Download of one program. --- input:2
Quit --- [Q/q]
Input:q


MG(SIP) >
```

When download is complete, the program download menu appears again. Enter ‘q’ to exit download command.

How to download a WAVE file

If you select Type3 (WAVE file) for the music type of "set musictype" command, you can use a WAVE file for music on hold. Note that the payload type of the RTP header sent by MG-SIP must be G.711.

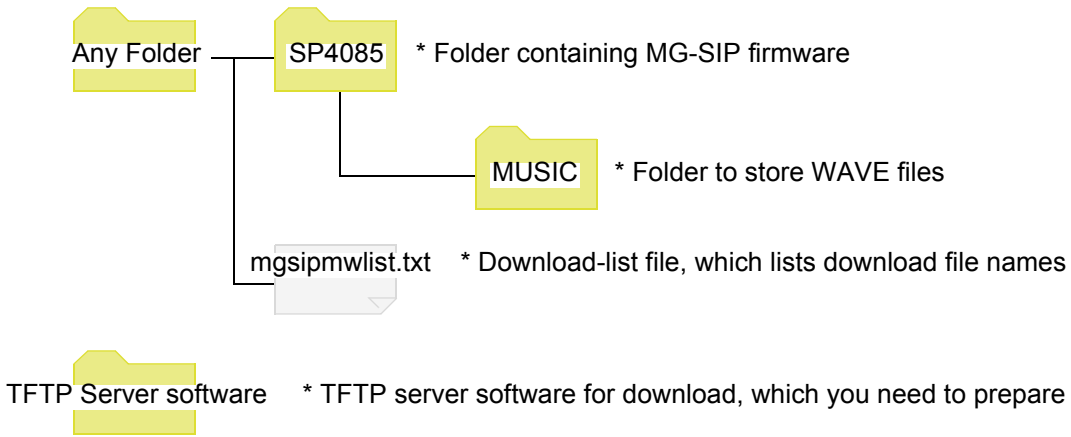
The following explains how to download a WAVE file.

- Place the firmware of MG-SIP in a folder on a TFTP server. If the firmware is not present, create a folder with the name of the MG-SIP firmware ("SP4085" in this case) in a folder on the server, and then create a subfolder named "MUSIC" to store WAVE files. A WAVE file must be named as "music_3.wav".
- Place the WAVE file in the MUSIC folder (a subfolder of the above-mentioned firmware folder).
- Form the download-list file (mgsipmwlist.txt) under the firmware folder as below.

```
# This is Firmware list for Prepackaged
Server Model
00,SP4085/MUSIC/music_3.wav,0
```

Note: When adding WAVE files to the download-list (mgsipmwlist.txt), assign a sequential number (such as 00, 01, 02,...) to each file to avoid duplication.

File Structure



About WAVE file format

A WAVE file must meet the following specifications as its format:

- Sampling Frequency: 8kHz
- Quantifying Bit Number:8 bit
- Quantifying Format: G.711 μ-law/A-law
- Channel: Monaural
- Capacity: Only a single WAVE file with about 10 Mbyte (about 20 seconds)
  * Note that the actual capacity may be smaller because the capacity of 10 Mbyte includes the management area of the file system.

[Display example of downloading a WAVE file (music_3.wav) individually]

```
MG(SIP) > download

--- Download menu ---
Download of all programs. (default) ---
input:1
Download of one program. --- input:2
Quit --- [Q/q]
Input:2

--- IP Address setting of MG(SIP) ---
Select Ether Port [1(Ether1)/2(Ether2)/
Q(quit)]:1



Current IP Address of MG(SIP):10.41.1.100
Do you change IP Address of MG(SIP)?
[Y(change)/N(current)/Q(quit)]:y
If you want to return to the previous step,
please input 'Q'.
Input new IP Address:172.16.253.100
Current Subnet mask of MG(SIP):255.0.0.0
Do you change Subnet mask of MG(SIP)?
[Y(change)/N(current)/Q(quit)]:y
If you want to return to the previous step,
please input 'Q'.
```

Enter “download” in configuration mode.

Enter “2” to download a program individually.

Select a port to use.
(With the default setting, select Ether1. If selecting Ether2, using two ports must be set in the “set ipaddress” command.)

To change the IP address of the selected port, enter “y”.

Enter an IP address.

To change the subnet mask of the selected port, enter “y”.

```
Input new Subnet mask:255.255.0.0


--- IP Address setting of TFTP server ---
Current IP Address of TFTP server:10.41.1.250


Do you change IP Address of TFTP server?
[Y(change)/N(current)/Q(quit)]:y
If you want to return to the previous step,
please input 'Q'.
Input new IP Address:172.16.253.250
IP Address change was completed.
New IP Address of MG(SIP):172.16.253.100
New Subnet mask of MG(SIP):255.255.0.0
New IP Address of TFTP server:172.16.253.250
Are these IP Address correct? [Y(correct)/
N(change)/Q(quit)]
If you enter Y, MG(SIP) ONLINE service will be
stop:y
mgsipmwlist.txt download...
tftpDownload:User file TFTP start.
Received.


--- Program download ---
Main program:0
tone data:1
music data:2
wave file:3
config data:4
Quit:[Q/q]
Input:3
SP4085/MUSIC/music_3.wav download...
```

Enter a subnet mask.

To change the TFTP server IP address, enter “y”.
(Default address: 10.41.1.250)

Enter an IP address.

Enter “y” after confirming the entered IP address.

Select “3” representing wave file.

Download starts.

```
tftpDownload:User file TFTP start.
Received.
Checksum No Check. Checksum of SP4085/MUSIC/
music_3.wav is 23915.
Download was completed!

--- Program download ---
Main program:0
tone data:1
music data:2
wave file:3
config data:4
Quit:[Q/q]
Input:q

Please reboot after a download menu end.

--- Download menu ---
Download of all programs. (default) ---
input:1
Download of one program. --- input:2
Quit --- [Q/q]
Input:q

MG(SIP) >
```

After the download is finished, download menu is restored.

Enter “download” in configuration mode.

Note: The conditions of “Display example of downloading a WAVE file (music_3.wav) individually” are as follows.

- Be sure to check the product name of the firmware to download before downloading.
- After downloading, initialize the MG-SIP.
- Make sure of the following to set an IP address for download.
  1. A port to download files needs to have a different network address (or segment) from the other ports.
  2. Do not use a network address set as a static route in the routing table.

- If checksum error occurs during download, an error message similar to the following is displayed.

  Checksum unmatched!
  Checksum of SP4085/MAIN/main.tar.gz is 1234. Not 5678.
  Download failed!

  If an error message is displayed, the display goes back to the download menu. In this case, execute download again.

- If download fails, an error message and an error code are displayed.

  Error code: Cause of error
  Download failed!

The following lists causes and solutions of error codes.

Error Code	Error Display	Cause of Error	Troubleshooting
0	Undefined error	No specified folder (MAIN, TONE, MUSIC) in the TFTP server	Check the name of the TFTP server's folder to download files.
1	File not found	No download-list file	Check the folder setting of the download-list file in the TFTP server.
		Error in specifying the download-list file	Check the contents of the download-list file and the file name of the actually-downloaded file.
2	Access violation	No access permission	Check the TFTP server settings.

Some errors in downloading can be classified into none of the error codes; they are listed below: display, causes, solutions.

Error Display	Cause of Error	Troubleshooting
Hardware type ERROR! allDLoad: ListDLoad Error Download failed!	Hardware type discrepancy.	Check if the downloaded file is compatible with the hardware type.
Checksum unmatched! Checksum of SP4085/MAIN/main.tar.gz is 1234. Not 5678. Download failed!	Checksum discrepancy	Check if the contents of the download-list file correspond to the actually-downloaded file.
Download list unmatched! Download failed!	Request to download a file not written in the download-list file (individual download)	Check if the contents of the download-list file correspond to the actually-downloaded file. Download only files set in the download-list file.

Error Display	Cause of Error	Troubleshooting
ListDLoad : Sub directory error =[sub-folder name] ListDLoad: Download file is not found Download failed!	Incorrect name of the subfolder of the download-list file (only MAIN, TONE, MUSIC, and CONFIG are allowed)	Check the name of the subfolder of the download-list file.
ListDLoad: DataKind = [number] (0-255) is too large	Out of running numbers (0-255)	Check the contents of the download-list file.
ListDLoad: Comment strings too long =[comment strings]	Bad length of comment strings in the download-list file	Check if the download-list file is proper.
ListDLoad: Download file name is too long(91) =[download file name]	Bad length of the downloaded file name (representing 92 characters or more when including the subfolder)	Check if the download-list file is proper.
Transfer timed out. Download failed!	Specifying non-existing IP address	Check the IP address of the TFTP server.
	Specifying incorrect IP address	
	Enabled Windows firewall	Disable Windows firewall.
	Disconnected LAN cable	Make sure of no network problems including disconnection of an LAN cable.
	Inactivated TFTP server	Make sure that the TFTP server is activated.

4.3.3.5 Other Commands

exit

logout

[Function]

To exit the configuration command menu.

[Setting Example]

```
MG(SIP)> exit

login:
```

Note: After changing the configuration, if you execute this command without saving the running configuration, the system discards the change and exits the configuration command menu.

reboot

[Function]

To reboot MG-SIP. It is also possible to save the running configuration data to the flash memory.

[Setting Example]

```
MG(SIP)> reboot

 Do you want to save Config data? Y/N=y

 Do you want to reboot MG(SIP)? Y/N=y

Config data flash write start.
Config data flash write end.

MG(SIP)reboot start...
```

Select if you want to save the running configuration data.
y: Saves the configuration data. **Note 1**, **Note 2**
n: Do not save the configuration data.
If other than the above is selected, the following message is displayed.
Reboot command was interrupted.

Select if you want to reboot MG-SIP.
y: Reboots MG-SIP. **Note 2**
n: Do not reboot MG-SIP.
If other than the above is selected, the following message is displayed.
Reboot command was interrupted.

Note 1: Before selecting “Y” to save the running configuration data to the Flash memory, be sure to execute the following commands:

- "set ipaddress": Assigns the IP addresses on LAN side, and SIP side.
- "set drsaddress": Assigns the IP address of DRS.
- "set sip_server": Assigns the IP address of SIP proxy server.
- "set keynumber": Assigns a pilot number.

If any of these items have not been assigned when you save the running configuration data, the following message will be displayed to the unassigned item. When these messages are displayed, you can select if you want to set the default configuration data. If you select "Y," the default values are applied to the configuration data.

```
The following setting commands are not
perfect.
"set ipaddress" command.(IPX side)
"set ipaddress" command.(SIP side)

"set drsaddress" command.
"set sip_server" command.

"set keynumber" command.
So, Config data is made a default
setup.
Is it all right? Y/N=y
```

If IP address for LAN side has not been assigned.

If IP address for SIP network side has not been assigned.

If IP address of DRS has not been assigned.

If IP address of SIP proxy server has not been assigned.

If a pilot number has not been assigned.

You can select if you want to apply the default values to the configuration data.
y: apply default value
n: do not apply default value
If other than the above is selected, the following message is displayed.
Reboot command was interrupted.

Note 2: The configuration data is not saved until MG-SIP is rebooted.

ping

[Function]

To attempt "ping" command five times to the designated IPv4 host on the network.

[Setting Example]

```
MG(SIP)> ping 172.16.253.3



PING 172.16.253.3 (172.16.253.3) 56(84) bytes of data.
64 bytes from 172.16.253.3: icmp_seq=1 ttl=128
time=0.599 ms
```

Enter "ping" command and designate the target IPv4 address.

```
64 bytes from 172.16.253.3: icmp_seq=2 ttl=128 time=1.02
ms

64 bytes from 172.16.253.3: icmp_seq=3 ttl=128
time=0.443 ms

64 bytes from 172.16.253.3: icmp_seq=4 ttl=128
time=0.304 ms

64 bytes from 172.16.253.3: icmp_seq=5 ttl=128
time=0.727 ms

---172.16.253.3 ping statistics---

5 packets transmitted, 5 received, 0% packet loss, time
3997ms

rtt min/avg/max/mdev = 0.304/0.618/1.020/0.247 ms

MG(SIP)>
```

Note: The number of ping attempts (5 times) and packet size (56 bytes) cannot be changed.

ping6

[Function]

To attempt “ping” command five times to the designated IPv6 host on the network.

[Setting Example]

```
MG(SIP)> ping6 2001:db8:1:0:216:97ff:fee7:a8c0



PING 2001:db8:1:0:216:97ff:fee7:a8c0
(2001:db8:1:0:216:97ff:fee7:a8c0) from
2001:db8:1:0:216:97ff:fee7:a8c0 eth1: 56 data bytes

64 bytes from 2001:db8:1:0:216:97ff:fee7:a8c0:
icmp_seq=1 ttl=64 time=0.015 ms

64 bytes from 2001:db8:1:0:216:97ff:fee7:a8c0:
icmp_seq=2 ttl=64 time=0.011 ms

64 bytes from 2001:db8:1:0:216:97ff:fee7:a8c0:
icmp_seq=3 ttl=64 time=0.010 ms

64 bytes from 2001:db8:1:0:216:97ff:fee7:a8c0:
icmp_seq=4 ttl=64 time=0.013 ms
```

Enter “ping6” command and designate the target IPv6 address.

```
64 bytes from 2001:db8:1:0:216:97ff:fee7:a8c0:
icmp_seq=5 ttl=64 time=0.011 ms

--- 2001:db8:1:0:216:97ff:fee7:a8c0 ping statistics ---

5 packets transmitted, 5 received, 0% packet loss, time
3997ms

rtt min/avg/max/mdev = 0.010/0.012/0.015/0.002 ms

MG(SIP)>
```

Note: The number of ping attempts (5 times) and packet size (56 bytes) cannot be changed.

traceroute

[Function]

To inquire network routes. The following figures show display examples.

[On the Telephony Server Side]

```
MG(SIP)> traceroute

 Interface number(0:IPX side/1:SIP side):0




 Target IP Address:172.16.253.3

 traceroute to 172.16.253.3 (172.16.253.3), 3
 hops max, 38 byte packets

1 172.16.253.3 (172.16.253.3) 0.047 ms 0.028
ms 0.010 ms

MG(SIP)>
```

Select if this is on the Telephony Server side or SIP side.
0: Telephony Server side
1: SIP side
"0" is selected.

Designate the IP address of the target.

[SIP Side]

```
MG(SIP)> traceroute

 Interface number(0:IPX side/1:SIP side):1




 Target IP Address:172.17.253.210
```

Select if this is on the Telephony Server side or SIP side.
0: Telephony Server side
1: SIP side
"1" is selected.

Designate the IP address of the target.
Note 3

```
 traceroute to 172.17.253.210
 (172.17.253.210), 3 hops max, 38 byte
 packets
1 172.17.253.210 (172.17.253.210) 0.047 ms
0.028 ms 0.010 ms
MG(SIP)>
```

Note: When the response from the network is delayed, it takes time to complete the command.

Note 3: When “IPv6” is selected by “set ip_version”, input an IPv6 address for Target IP Address. When “IPv4” is selected by “set ip_version”, input an IPv4 address for Target IP Address.

help or ?

[Function]

This command is used to show the brief explanation of the configuration commands that are available on MG-SIP.

[Setting Example]

```
MG(SIP)> help
set       :sets config data of MG(SIP).
show      :shows config data of MG(SIP).
download  :downloads program of MG(SIP).
ping      :Ping command.
traceroute:Traceroute command.
exit      :log-out command of config mode.
logout    :log-out command of config mode.
reboot    :reboots MG(SIP).
help      :shows help information.
?         :shows help information.
```

4.3.3.6 Error Messages

When an error occurs while using a configuration command, an error message prompting for re-registration is displayed.

ERROR MESSAGE	TROUBLESHOOTING
Illegal command.	An incorrect command is entered. Enter the command correctly.
Illegal parameters.	An incorrect parameter is entered. Enter the parameter correctly.
Illegal parameters. (Not IPv6 address)	An incorrect parameter is entered. Enter the IPv6 parameter correctly.
Illegal parameters. (Not IPv4 address)	An incorrect parameter is entered. Enter the IPv4 parameter correctly.

Refer to each command for the other error messages.

4.3.3.7 IPv6 Function

MG-SIP supports IPv6 function based on RFC2460 in order to communicate with the SIP server having an IPv6 address. When IPv6 mode is enabled, IPv6 packets are sent from/received to WAN side (through the Ether2 port) on MG-SIP. You can select an IP version to be used on the Ether2 port by a configuration command.

[Operating Procedure]

To enable IPv6 function, execute the following commands. For the details of the commands, refer to 4.3.3.1 List of Configuration Console Commands.

STEP 1:Select “IPv6” by “set ip_version” command.

Note: If you change the IP version by “set ip_version” command, you also need to change the following command settings to activate IPv6 function. After those settings, execute the “reboot” command to save the configuration and restart the MG-SIP.

<table>
<tr><th rowspan="2"></th><th colspan="2">Changing IPv4 to IPv6</th><th colspan="2">Changing IPv6 to IPv4</th></tr>
<tr><th>IPv6 Related Data Settings Exist</th><th>No IPv6 Related Data Settings Exist</th><th>IPv4 Related Data Settings Exist</th><th>No IPv4 Related Data Settings Exist</th></tr>
<tr><td>dnsaddress</td><td rowspan="3">Change the current setting to the last setting.</td><td rowspan="3">Change the current setting to “::”.</td><td rowspan="4">Change the current setting to the last setting.</td><td rowspan="4">Change the current setting to “0.0.0.0”.</td></tr>
<tr><td>sip_server</td></tr>
<tr><td>sip_register</td></tr>
<tr><td>ipaddress
Note 1</td><td colspan="2">For Ether2 port, an IP address is generated by receiving the Router Advertisement (RA) message.</td></tr>
<tr><td>sip_route</td><td>Change the current setting to the last setting.</td><td>Change the current setting to “::”.</td></tr>
<tr><td>sip_accfilter</td><td>Change the current setting of SIP Access Filter mask to the last setting.</td><td>Change the current setting of SIP Access Filter mask to “128”.</td><td>Change the current setting of SIP Access Filter mask to the last setting.</td><td>Change the current setting of SIP Access Filter mask to “255.255.255.255”.</td></tr>
</table>

Note 1:

- "set ip_version: IPv6" is executed.
  When the last IP address set for Ether2 port remains, it appears.
  When the last IP address set for Ether2 port does not remain,"::" appears.
  When Ether2 port fails to obtain an IP address,"::" appears.
- "set ip_version: IPv4" is executed.
  When the last IP address set for Ether2 port remains, it appears.
  When the last IP address set for Ether2 port does not remain,"0.0.0.0" appears.

STEP 2:Set SIP server address by "set sip_server" command.

STEP 3:Set the SIP register address by "set sip_register" command if needed.

* This command is required depending on the carrier that MG-SIP connected.

STEP 4:Set the IP address of the Telephony Server by "set drsaddress" command.

STEP 5:Set Ether1 information by "set ipaddress" command.

Note: When IPv6 function is in service, Ether2 IP address can be generated by MG-SIP after MG-SIP receives the RA message from the router. So Ether2 IP address setting is unnecessary.

STEP 6:Set the key number by "set keynumber" command.

STEP 7:Set the user ID and the password by "set auth" command if needed.

* This command is required depending on the carrier that MG-SIP connected.

STEP 8:Set other commands if needed.

STEP 9:Execute the "reboot" command to save the configuration and restart the MG-SIP.

[Conditions Specific to IPv6 Function]

(1) IPv6 and IPv4 cannot be used simultaneously.

(2) IPv6 address can be set only by "stateless address autoconfiguration" in the router. So, this function requires to connect a router supporting IPv6. When two or more routers exist or two or more prefixes used for the router in the WAN side, IP address settings may be overlapped. To avoid it, this function allows only one router to be connected in the WAN side, and one prefix can be used per router. This function does not support allocating fixed IP addresses manually and distributing IP addresses from DHCPv6 server.

(3) When IPv6 function is in service, IPv4 packets are discarded. When a SIP request for IPv6 packet has any IPv4 address in its message body using SDP, MG-SIP responses to the request with returning 488 Not Acceptable Here. A warning code is not added to 488 Not Acceptable Here.

(4) When IPv6 function is out of service, IPv6 packets are discarded. When a SIP request for IPv4 packet has any IPv6 address in its message body using SDP, MG-SIP responses to the request with returning 488 Not Acceptable Here. A warning code is not added to 488 Not Acceptable Here.

(5) When IPv6 function is in service, be sure to set an IPv6 address for each configuration command requiring IP address setting.

(6) In this feature, IPv6 addresses can be abbreviated. For example, “2001:db8::850” can be typed. Also, IPv6 addresses can be typed in the general form. For example, “2001:0db8:0000:0000:0000:0000:0000:0850” can be typed.

- Short Form

2001:db8::850

- General Form

Lowercase letters only	2001:0db8:0000:0000:0000:0000:0000:0850
Uppercase letters only	2001:DB8::850
Mix of Lowercase and Uppercase letters	2001:dB8::850

(7) “One-port only” is not supported by IPv6 function. Do not enable “one-port only” with the set ipaddress command when IPv6 is selected with the set ip_version command.

(8) When Ether2 port fails to obtain an IPv6 address while IPv6 function is active, it attempts to obtain the address for 30 minutes. If it fails again, MG-SIP reboots itself.

(9) When Ether2 port fails to obtain an IPv6 address while IPv6 function is active, MG-SIP obtains the address within 30 minutes. If the SC Health Check is performed, MG-SIP may reboot itself while attempting to obtain the IPv6 address information again. So the Health Check is not performed.

(10) Address information is not deleted by removing and inserting Ether2 cable. IPv6 information is valid if it is obtained before expiring the time limit.

(11) When Ether2 port attempts to obtain an IPv6 address during the system initialization, the system initialization is not completed and ONLINE START/OFFLINE START does not appear until Ether2 port obtains the IPv6 address.

(12) When IPv6 function is in service, download and upload is not available on Ether2 port.

4.3.4 MG-SIP for SIP Trunk config_template Data

By executing configuration command “set config_template”, the standard data of MG-SIP can be assigned.

Note: The Halftone cells in the following table are the parameters that are not used for MG-SIP even if “set config_template” command is executed.

-: Not changed by executing “set config_template”

Sub Command	Parameter	Value								
		0 (default)	1	2	3	4	5	6	7	8 Note 1
183rbt		enable	enable	enable	enable	enable	enable	enable	enable	enable
184toprivacy		disable	disable	disable	disable	disable	disable	disable	disable	disable
another_key-number	Another Keynumber 1	0	0	0	0	0	0	0	0	0
	Another Keynumber 2	0	0	0	0	0	0	0	0	0
	Another Keynumber 3	0	0	0	0	0	0	0	0	0
auth	User ID	0	0	0	0	0	0	0	0	0
	Password	0	0	0	0	0	0	0	0	0
auth_header		enable	enable	enable	disable	disable	disable	disable	enable	enable
call_hold		disable	disable	disable	disable	disable	disable	disable	disable	disable
	RTP detect timer value									
	Response code to reject									
call_id_relay		disable	disable	disable	disable	disable	disable	disable	disable	disable
cause_table		normal	Route Advance	normal	normal	normal	normal	normal	normal	Route Advance

Sub Command	Parameter	Value								
		0 (default)	1	2	3	4	5	6	7	8 Note 1
cc_convert	Country Code Convert function	disable	disable	disable	disable	disable	disable	disable	disable	disable
	Country Code									
	National Prefix and National Destination Code									
	National Prefix									
	National Destination Code									
	International Prefix									
	Number of Local Number digits									
cdn_pattern		To [userinfo]	Request-URI [userinfo]	To [userinfo]	To [userinfo]	To [userinfo]	To [userinfo]	To [userinfo]	To [userinfo]	Request-URI [userinfo]
check_number		disable	disable	disable	disable	disable	disable	disable	disable	disable
codec_change		disable	enable	disable	disable	disable	disable	disable	disable	enable
	G711 Fax renegotiation	disable	enable	disable	disable	disable	disable	disable	disable	enable
country_code		0 (AUTO)	0 (AUTO)	0 (AUTO)	0 (AUTO)	0 (AUTO)	0 (AUTO)	0 (AUTO)	0 (AUTO)	0 (AUTO)
cpn_pattern		DisplayName	P-Asserted-ID	Userinfo	DisplayName	P-Asserted-ID	Userinfo	P-Asserted-ID	DisplayName	P-Asserted-ID
dnsaddress		0.0.0.0	0.0.0.0	0.0.0.0	0.0.0.0	0.0.0.0	0.0.0.0	0.0.0.0	0.0.0.0	0.0.0.0
dns_option	DNS type	A Record resolve (single IP Address)	Locating SIP servers function (RFC3263)	A Record resolve (single IP Address)	A Record resolve (single IP Address)	A Record resolve (single IP Address)	A Record resolve (single IP Address)	A Record resolve (single IP Address)	A Record resolve (single IP Address)	Locating SIP servers function (RFC3263)
	DNS cache		enable							enable
domain		0	0	0	0	0	0	0	0	0

Sub Command	Parameter	Value								
		0 (default)	1	2	3	4	5	6	7	8 Note 1
drsaddress	Primary DRS Address	-	-	-	-	-	-	-	-	-
	Primary DRS Port No	-	-	-	-	-	-	-	-	-
	Secondary DRS Address	-	-	-	-	-	-	-	-	-
	Secondary DRS Port No	-	-	-	-	-	-	-	-	-
	Tertiary DRS Address	-	-	-	-	-	-	-	-	-
	Tertiary DRS Port No	-	-	-	-	-	-	-	-	-
	Quaternary DRS Address	-	-	-	-	-	-	-	-	-
	Quaternary DRS Port No	-	-	-	-	-	-	-	-	-
drs_qos	DRS QoS	0xa0	0xa0	0xa0	0xa0	0xa0	0xa0	0xa0	0xa0	0xa0
	PRECEDENCE	5	5	5	5	5	5	5	5	5
	DELAY	0	0	0	0	0	0	0	0	0
	THROUGHPUT	0	0	0	0	0	0	0	0	0
	RELIABILITY	0	0	0	0	0	0	0	0	0
	COST	0	0	0	0	0	0	0	0	0
dtmf_mode		Negotiation (SIP/SDP)	Negotiation (SIP/SDP)	Negotiation (SIP/SDP)	Out-Band (RFC2833)	Out-Band (RFC2833)	Out-Band (RFC2833)	In-Band (G.711)	Negotiation (SIP/SDP)	Negotiation (SIP/SDP)
	DTMF Duration	120 ms	120 ms	120 ms	120 ms	120 ms	120 ms	120 ms	120 ms	120 ms
	DTMF Pause	100 ms	100 ms	100 ms	100 ms	100 ms	100 ms	100 ms	100 ms	100 ms
	Payload type	101	101	101	101	101	101		101	101
enc Note 2		disable	disable	disable	disable	disable	disable	disable	disable	disable
h245_base_port_no		40000	40000	40000	40000	40000	40000	40000	40000	40000
hc_alarm		IPX and SIP side enable	IPX and SIP side enable	IPX and SIP side enable	IPX and SIP side enable	IPX and SIP side enable	IPX and SIP side enable	IPX and SIP side enable	IPX and SIP side enable	IPX and SIP side enable
hc_timer		240 sec	240 sec	240 sec	240 sec	240 sec	240 sec	240 sec	240 sec	240 sec

Sub Command	Parameter	Value								
		0 (default)	1	2	3	4	5	6	7	8 Note 1
interface	Ether[1] speed	-	-	-	-	-	-	-	-	-
	Ether[1] duplex	-	-	-	-	-	-	-	-	-
	Ether[2] speed	-	-	-	-	-	-	-	-	-
	Ether[2] duplex	-	-	-	-	-	-	-	-	-
ipaddress	one-port only	-	-	-	-	-	-	-	-	-
	Ether[1] IP Address	-	-	-	-	-	-	-	-	-
	Ether[1] Subnet mask	-	-	-	-	-	-	-	-	-
	Ether[2] IP Address	-	-	-	-	-	-	-	-	-
	Ether[2] Subnet mask	-	-	-	-	-	-	-	-	-
ip_version		IPv4	IPv4	IPv4	IPv4	IPv4	IPv4	IPv4	IPv4	IPv4
ipx_media_port_no		Video: 55000 T.38: 56000	Video: 55000 T.38: 56000	Video: 55000 T.38: 56000	Video: 55000 T.38: 56000	Video: 55000 T.38: 56000	Video: 55000 T.38: 56000	Video: 55000 T.38: 56000	Video: 55000 T.38: 56000	Video: 55000 T.38: 56000
ipx_route	Route type	-	-	-	-	-	-	-	-	-
ipx_rtp_port_no		51000	51000	51000	51000	51000	51000	51000	51000	51000
keynumber		-	-	-	-	-	-	-	-	-
multi_regist		disable	disable	disable	disable	disable	disable	disable	disable	disable
	Transmitting interval timer									
	Standby timer value									
	Contact Header type									
musictype		Type1	Type1	Type1	Type1	Type1	Type1	Type1	Type1	Type1
nataddress		-	-	-	-	-	-	-	-	-
name_display		disable	enable	disable	disable	disable	disable	disable	disable	enable
no_media_code		488	415	488	488	488	488	488	488	415
out_of_area_code		408	408	408	408	408	408	408	408	408
ppi_to_pai		disable	enable	enable	disable	disable	disable	disable	enable	enable
prack	Supported 100rel	enable	disable	enable	disable	disable	enable	disable	enable	disable
	Stop cyclical-send of 18x	disable		disable			disable		disable	
pre_negotiation_port_no		61014	61014	61014	61014	61014	61014	61014	61014	61014

Sub Command	Parameter	Value								
		0 (default)	1	2	3	4	5	6	7	8 Note 1
privacy_pattern	Privacy pattern	DisplayName	DisplayName	RFC3325 (TEL-URI)	DisplayName	DisplayName	Remote-Party-ID	RFC3325 (SIP-URI)	SIP-URI (no privacy)	DisplayName
	Dummy string						anonymous			
registration_port_no		3456	3456	3456	3456	3456	3456	3456	3456	3456
reg_interval		5 min	5 min	5 min	5 min	5 min	5 min	5 min	5 min	5 min
response_table		normal	normal	normal	normal	normal	normal	normal	normal	normal
rfc2833_pass		disable	disable	disable	disable	disable	disable	disable	disable	enable
rtp_pathon		disable	disable	enable	enable	enable	enable	enable	disable	disable
rtp_qos	RTP QoS	0xa0	0xa0	0xa0	0xa0	0xa0	0xa0	0xa0	0xb8	0xa0
	PRECEDENCE	5	5	5	5	5	5	5	5	5
	DELAY	0	0	0	0	0	0	0	1	0
	THROUGHPUT	0	0	0	0	0	0	0	1	0
	RELIABILITY	0	0	0	0	0	0	0	0	0
	COST	0	0	0	0	0	0	0	0	0
sdp_style		normal	RFC4566	RFC4566	normal	normal	normal	normal	normal	RFC4566
	G729 annexb=no	disable	enable	enable	disable	disable	disable	disable	disable	enable
self_sip_domain		disable	disable	disable	disable	disable	disable	enable	disable	disable
	Self SIP Domain string							0		
session_timer		enable	enable	enable	enable	enable	enable	enable	enable	enable
	Session-expires	180 sec	180 sec	180 sec	3600 sec	3600 sec	3600 sec	3600 sec	180 sec	180 sec
	Refresher	UAC	UAC	UAC	UAS	UAS	UAC	UAS	UAC	UAC
	Invite Refresher	disable	enable	disable	disable	disable	disable	disable	disable	disable
	Forced mode	disable	disable	disable	disable	disable	disable	disable	disable	disable
	reINVITE Refresher	disable	disable	disable	disable	disable	disable	disable	disable	disable
signaling_port_no		61012	61012	61012	61012	61012	61012	61012	61012	61012
sip_accfilter	SIP Access Filter	disable	disable	enable	disable	disable	disable	disable	disable	disable
	SIP Access Filter mask			-						
	Burst Access Filter	disable	disable	disable	disable	disable	disable	disable	disable	disable

Sub Command	Parameter	Value								
		0 (default)	1	2	3	4	5	6	7	8 Note 1
sip_accfilter	Burst Access limit timer value									
	Adjustment for PBX indication									
	Fixed wait timer value									
	Random maximum wait timer value									
	Burst Access limit number value									
	Burst Access reject response code									
sip_media_port_no		Video: 53000 T.38: 54000	Video: 53000 T.38: 54000	Video: 53000 T.38: 54000	Video: 53000 T.38: 54000	Video: 53000 T.38: 54000	Video: 53000 T.38: 54000	Video: 53000 T.38: 54000	Video: 53000 T.38: 54000	Video: 53000 T.38: 54000
sip_port_no		5060	5060	5060	5060	5060	5060	5060	5060	5060
sip_qos	SIP QoS	0xa0	0xa0	0xa0	0xa0	0xa0	0xa0	0xa0	0x68	0xa0
	PRECEDENCE	5	5	5	5	5	5	5	3	5
	DELAY	0	0	0	0	0	0	0	0	0
	THROUGHPUT	0	0	0	0	0	0	0	1	0
	RELIABILITY	0	0	0	0	0	0	0	0	0
	COST	0	0	0	0	0	0	0	0	0
sip_register	SIP register type	-	-	-	-	-	-	-	-	-
	SIP register IP Address	-	-	-	-	-	-	-	-	-
	SIP register FQDN	-	-	-	-	-	-	-	-	-
	SIP register Port Number	-	-	-	-	-	-	-	-	-
	SIP register Expires time	-	-	-	-	-	-	-	-	-
sip_route	Route type	-	-	-	-	-	-	-	-	-
sip_rtp_port_no		50000	50000	50000	50000	50000	50000	50000	50000	50000
sip_server	SIP server type	-	-	-	-	-	-	-	-	-
	SIP server IP Address	-	-	-	-	-	-	-	-	-

Sub Command	Parameter	Value								
		0 (default)	1	2	3	4	5	6	7	8 Note 1
sip_server	SIP server FQDN	-	-	-	-	-	-	-	-	-
	SIP server Port Number	-	-	-	-	-	-	-	-	-
	SIP server Router type	-	-	-	-	-	-	-	-	-
	rport (RFC3581) function	-	-	-	-	-	-	-	-	-
	Domain Name	-	-	-	-	-	-	-	-	-
sip_tel_service		disable	enable	disable	enable	enable	enable	enable	enable	enable
	Replaces function		enable		disable	disable	disable	disable	enable	enable
	Hold [a=inactive] function		enable		enable	enable	enable	enable	enable	enable
	Hold [put off hold] function		enable		disable	disable	disable	disable	disable	enable
	REFER/NOTIFY function		enable		disable	disable	disable	disable	disable	enable
	3PCC function		enable		disable	enable	disable	disable	disable	enable
	3PCC function (codec)		AUTO			AUTO				AUTO
	Unhold w/o SDP function		disable			enable				disable
sip_transport		UDP	UDP	UDP	UDP	UDP	UDP	UDP	UDP	UDP
slipresp		488	503	503	488	488	488	488	488	503
softdsp	Codec convert mode	disable	disable	disable	disable	disable	disable	disable	disable	disable
	PAD setting	disable	disable	disable	disable	disable	disable	disable	disable	disable
	PAD reception (voice)	0	0	0	0	0	0	0	0	0
	PAD transmission (voice)	0	0	0	0	0	0	0	0	0
	PAD reception (FAX)	0	0	0	0	0	0	0	0	0
	PAD transmission (FAX)	0	0	0	0	0	0	0	0	0
update		disable	disable	enable	disable	disable	disable	disable	disable	disable

Note 1: When using MCU, the template pattern 8 setting is required by using “set config_template” command.

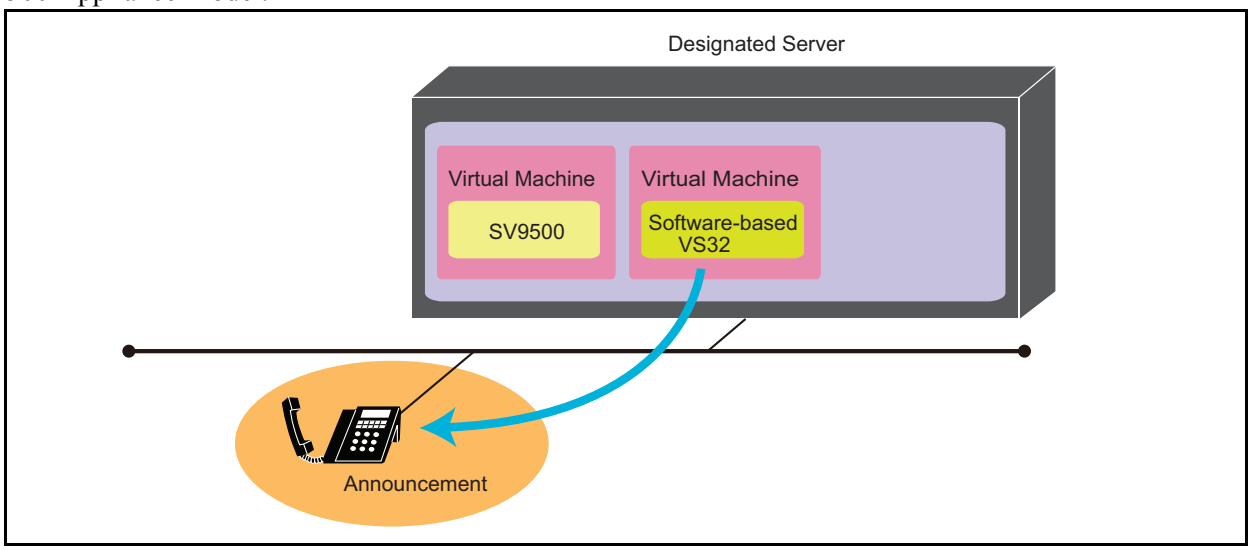
Note 2: This parameter is available for SP-4085 MGSIPVM PROG-E Issue 3.0 and later.

CHAPTER 3
SOFTWARE-BASED VS32

1. What is Software-based VS32?

Software-based VS32 is an application installed as a virtual machine in a server providing an announcement feature. With Software-based VS32, several types of announcements can be used.

Also, Software-based VS32 can be used as announcement equipment of SV9500 Prepackaged Server Model or SV9500 Appliance Model.

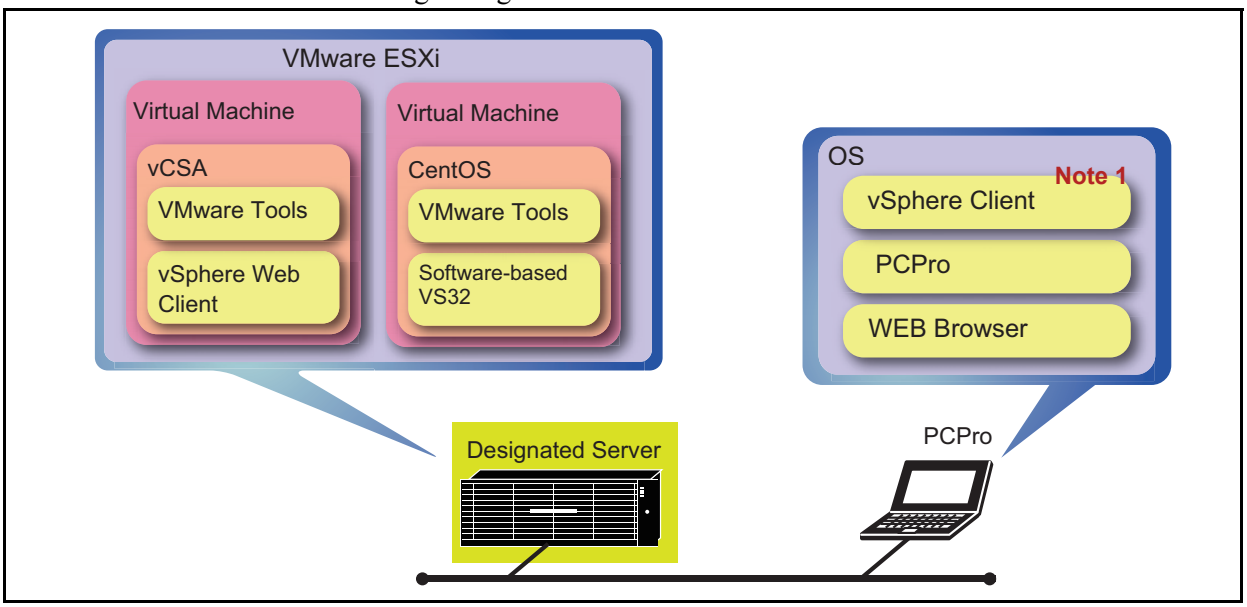


Note: Software-based VS32 is available from FP95-114 V4.

Note: Ask your dealer for the servers that can be used with Software-based VS32.

1.1 Software-based VS32 Configuration

Software-based VS32 uses the following configuration:



Note: In the given configuration vCSA and Software-based VS32 are in the same server but they can also be installed in different servers.

The configuration of the server is as follows:

Name	Description
VMware ESXi	It is the software that controls the virtual machines.
vCenter Server Appliance (vCSA)	It provides integrated management service for vSphere infrastructure (virtual machines, VMware ESXi, etc).
VMware Tools	It operates on the virtual machines and receives instructions from VMware ESXi. Executes shutdown control of the guest OS and time synchronization between VMware ESXi and the guest OS.
Software-based VS32	It is installed as a virtual machine in the server and provides announcement features.

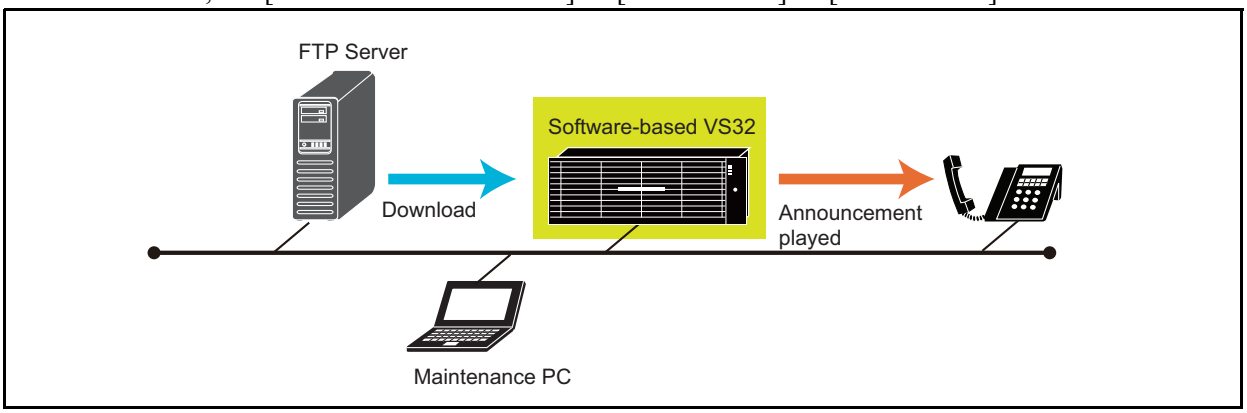
The configuration of the maintenance PC is as follows:

Name	Description
vSphere Client	It is an interface that can be used for managing vCenter Server and VMware ESXi. **Note 1**
PCPro	It is used for data settings of SV9500. (For more details, refer to PCPro Setup Manual.)
Web Browser	It is used for vSphere Web Client and Telephony Server Maintenance Menu. vSphere Web is a browser-based interface for configuring and managing virtual machines.

Note 1: In a virtual platform that uses VMware ESXi 6.0, when operating Software-based VS32, configure and manage the virtual machine with vSphere Client. Do not use vSphere Web Client.

1.2 Announcement Data

Announcement data uses WAVE files installed on the hard drive of the designated server.
The WAVE file is created on a local computer in the designated format, uploaded to the FTP server and then downloaded and saved to the designated server using the commands of the console.
For more information, see [Maintenance Commands] -> [Maintenance] -> [WAVEFILE].



2. Conditions

The conditions for Software-based VS32 usage are as follows:

Note: For conditions of use of the Software-based VS32, see [Data Programming Manual - Business] ->[VS32 Conference Server [V-26]] -> [Service Conditions] -> [4. Service Conditions for Announcement].

<Important Notices>

(1) The sound source for the announcement feature can only be the WAVE file installed on the hard disk of the virtual machine where the Software-based VS32 is installed.

(2) When Software-based VS32 data is assigned with the AIVSL command, the VS-ID parameter is the same as the virtual MAC address of the virtual machine operating the Software-based VS32.

(3) SIP mode is not supported.

<Interactions with Other Features>

(1) Software-based VS32 cannot use the following features of VS32 CONFERENCE SERVER [V-26]:

- Multiple-Party Conference
- Three-Way Calling
- External IP Music-On-Hold
- Music On Hold Per Line

(2) ACD and OAI features are not supported.

(3) VoIP ENCRYPTION [V-27] is not supported.

<Hardware/Software>

(1) Software-based VS32 can be used in a system that also uses MG-VS32VA, SCA-VS32VA-B/SCA-VS32VA.

<Interactions with Networks>

None

<Conditions Specific to This Feature>

(1) The maximum number of usable channels is 32.

(2) The supported payload type is only G.711.

(3) To check the status of Software-based VS32 with the IPAN command, select [Voice Server] in [Multi-function Server] of the [IP Terminal] tab.

(4) The following conditions apply to the Software-based VS32 client licenses.

(a) 32 client licenses are used for Software-based VS32 regardless of the office settings when VS32 is registered to the Telephony Server. For example, if only 15 channels use is set with the AIVSL command, 32 licenses are still needed.

(b) If less than 32 client licenses are equipped, registration to the Telephony Server is not possible.

(c) If Software-based VS32 is registered to SR-MGC, 32 client licenses are needed.

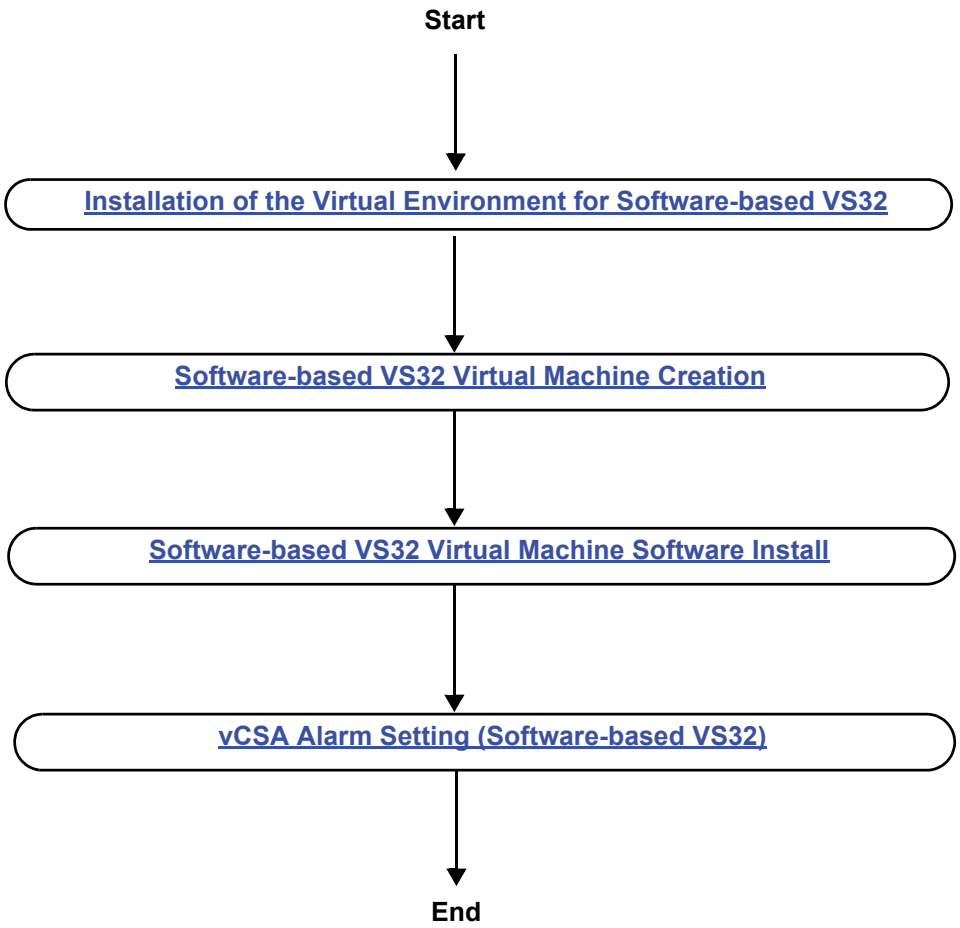
(d) The message 10-D (IP License Excess Notice) is sent if there are not enough licenses. The timing for sending the message is 00:00 hours of the following day after detecting the problem. Channel accommodation information of the terminals affected by the problem is also sent.

3. Software-based VS32 Installation

The following explanation is an example of installation of Software-based VS32. Before start the installation, see Software Model Installation Manual for the data used as example in such installation process.

3.1 Software-based VS32 Installation

The installation of the Software-based VS32 follows the flowchart below.



3.1.1 Installation of the Virtual Environment for Software-based VS32

Software-based VS32 needs to be installed in a server configured with the software mentioned in 1.1 Software-based VS32 Configuration.

Regarding VMware Tools, install it referring to the Virtual Machine Startup section of Software Model Installation Manual after performing the Telephony Server data settings and the Software-based VS32 setup settings.

The order of installation is as follows:

(1) Install and set up VMware ESXi. **Note 1**

(2) Install and set up vCSA. **Note 1**

(3) Create a datacenter and add VMware ESXi Server. **Note 1**

(4) Create the network settings as explained in the section VMware ESXi Network Settings of Software Model Installation Manual.

Note 1: For VMware software, consult the installation process in the VMware manuals.

3.1.2 Software-based VS32 Virtual Machine Creation

Create the virtual machine of Software-based VS32 using as model Virtual Machine Creation section of Software Model Installation Manual.

3.1.3 Software-based VS32 Virtual Machine Software Install

Install the data for the Software-based VS32 virtual machine using as model Virtual Machine Software Install section of Software Model Installation Manual.

3.1.4 vCSA Alarm Setting (Software-based VS32)

Set an alarm for the Software-based VS32 virtual machine using as model vCSA Alarm Setting section of Software Model Installation Manual.

3.2 Telephony Server Data Settings

3.2.1 Advance Preparation

- PCPro Preparation:
  Connect with PCPro using the account set for the IP address of SV9500 LAN2 connection. Use the set username and password to establish the connection.
  For an explanation about PCPro connection, see [PCPro Setup Manual] -> [Chapter 3 Setting Up PC-Pro] -> [Communication Link with the Telephony Server].

  Note: Login to PCPro requires a valid user name and password.

- License Preparation:
  If Software-based VS32 is used, a Software-based VS32 license needs to be merged to the Telephony Server. For an explanation, see [Operations and Maintenance Manual] -> [Operations of Telephony Server] -> [Adding/Updating License File].

3.2.2 Office Data Settings

Note: This explanation assumes that the basic settings have been done. For an explanation of the basic settings, see [Data Programming Manual - Business] -> [VS32 CONFERENCE SERVER [V-26]] -> [Programming] -> [3. Data Programming for Announcement] -> [1. VS32 Conference Server Basic Data (for VS32 operating in proprietary mode)].

STEP 1: **ASYDL** - Assign the following system data.
System Data 1
Index 800, Bit 7 (AAEDL command tenant data table development of Local Data Memory (LDM))
0=Separate
1=Common

STEP 2: **ASTD** - Assign state translation data allowing tandem connection with COT.
STM:0
STS:2
ST:1

STEP 3: **ARTD** - Assign route class data for announcement trunk (Software-based VS32).
OSGS (CDN1): 2 (Second Dial Tone)
ONSG (CDN2): 2 (PB, 60 milliseconds Interruption or CCIS or ISDN)
TF (CDN5): 1 (Outgoing Trunk (OGT))
TCL (CDN6): 4 (Tie Line/Announcement Trunk)
L/T (CDN7): 1 (Line/Trunk Identification: Trunk)
LSG (CDN15): 4 (Loop)
ANS (CDN28): 1 (Answer signal is given)

If Logical Number of Paging Trunk is set, perform the setting below. In that case, set also the NDM commands (AAEDN, ARRCN, ARSCN).
ALRTN - Register the Logical Number of Paging Trunk that has been set with the ARTD command.

Note: The following also apply:
- Use different routes for announcement trunk and DAT card.
- Software-based VS32 must be restarted when the data of existing route (RT) is changed.

STEP 4: **ARTI** - Assign trunk application data for Software-based VS32. **Note 1**
FTRKS (CDN79) Trunk Selection (VS32):
0=Trunk is selectable. (Software-based VS32 can be selected) **Note 2**
1=Voice quality is taken as top priority. (The Software-based VS32 in the same MA-ID of the terminal that receives the announcement is given priority) **Note 3, Note 5**
2=An area to which an operator belongs is given top priority. (The Software-based VS32 in the same MA-ID of the terminal that is put on hold is given priority) **Note 4, Note 5, Note 6**
3=Not used. (Same as 0)

Note 1: Software-based VS32 must be restarted when the data of existing route (RT) is changed.

Note 2: All the Software-based VS32 (ANNC) set in the system can be selected.

Note 3: The number of Voice packets sent to the network can be minimized.

Note 4: By suppressing the use of Software-based VS32 in another MA-ID, the use of Software-based VS32 in each network (MA-ID) can be controlled.

Note 5: If there is not an idle trunk, the Software-based VS32 set to MA-ID=0000 is selected. Because only the Software-based VS32 of the corresponding MA-ID and MA-ID=0000 can be selected, non matching Software-based VS32 in the system can not be used. Also, to implement this it is necessary to assign the MA-ID to all the terminals and trunks in the system.

Note 6: Only valid for the RT of an External IP Music-on-Hold trunk. If the RT of an announcement trunk is set to this option, operations are the same as those when “1” is set.

STEP 5: **AIVSL** - Assign announcement trunk (Software-based VS32) data. **Note 7**
VS-ID: Assign MAC address of Software-based VS32.
MAC address of Software-based VS32 can be checked with the command “Show Status” or by using vSphere Web Client (Click “Summary” tab -> “VM Hardware” -> “Network adapter”).
Use SIP data: Left unchecked.
<Basic Settings>:
VS-CH: Enter the channel number for Software-based VS32
KIND: Select [ANNC]
RT: Select Route Number
TK: Select Trunk Number

LENS: Select Line Equipment Numbers
TN: Select Tenant Number
Setting of announcement detail data:
ANP: Set the sound source (0~254) **Note 8**
0=WAVE file 000
1=WAVE file 001
...
254=WAVE file 254
REP: Set the repetition pattern (0~255)
0=One time played
1=The sound source selected with ANP is repeated
2=Four sound sources selected with ANP are repeated
3=Four sound sources selected with ANP are played in order and then the third and fourth sound sources are repeated in succession
4~255= unused

<Detail Settings>:
Setting of Payload size:
Set the payload type (only G.711 supported). For a detailed explanation see [Data Programming Manual - Business] -> [VS32 CONFERENCE SERVER [V-26]] -> [Pay Load Change] feature.

Note 7: For a Software-based VS32 being on line, a change in the data settings is reflected without performing a re-registration.
If the channel is being used, the settings are reflected when the channel becomes idle.

Note 8: The following also apply:
- ANP number corresponds to the WAVE file number. (For a detailed explanation, see Peripheral Equipment Description (IP Devices).)
- If the WAVE file set with the ANP number is not found in the Software-based VS32 test.wav (1kHz, 10 seconds long) is played.

STEP 6: **AAEDL** - Assign announcement equipment data. **Note 9**
Equipment Kind: Select VS.
TN: Assign Tenant Number
EQP: Assign equipment number
Duration of Connection: Select timing for disconnection
Do not Send RBT: Select the box if Ringback Tone is not to be sent
Send Answer Signal: Select the box if Answer Signal is to be sent
LGRT: Assign Logical Number (1~899) of Software-based VS32 announcement Trunk (ANNC)
ANP: Set the sound source (0~254) **Note 10**
0=WAVE file 000
1=WAVE file 001
...
254=WAVE file 254
REP: Set the repetition pattern (0~255)

0=One time played
1=The sound source selected with ANP is repeated
2=Four sound sources selected with ANP are repeated in succession
3=Four sound sources selected with ANP are played in order and then the third and fourth sound sources are repeated in succession
4~255= unused

Note 9: If ANP or REP is set with the AIVSL command, AIVSL settings have priority over AAEDL command settings.

Note 10: The following also apply:

- ANP number corresponds to the WAVE file number. (For a detailed explanation, see Peripheral Equipment Description (IP Devices).)
- If the WAVE file set with the ANP number is not found in the Software-based VS32 test.wav (1kHz, 10 seconds long) is played.

STEP 7: **MBTK** - Assign idle/busy status of trunks.
Make idle the announcement trunks (Software-based VS32).

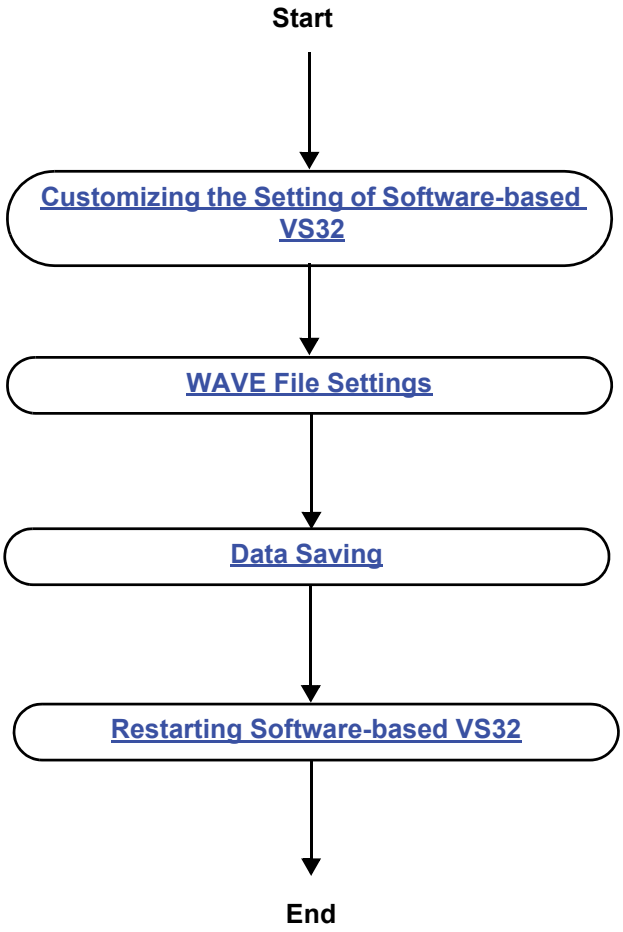
STEP 8: **ARRC** - Assign alternative route restrictions.
If an announcement trunk (Software-based VS32) uses tandem connection with other trunk, disable restrictions for tandem connection of such announcement trunk (Software-based VS32).

STEP 9: **ARSC** - Assign route restrictions.
Disable route restrictions for announcement trunk (Software-based VS32) connected with a trunk.

Note: If Least Cost Routing feature is used, see [Data Programming Manual - Business] -> [VS32 CONFERENCE SERVER [V-26]] -> [Service Conditions for Least Cost Routing Feature].

3.3 Software-based VS32 Setup

The setup of the Software-based VS32 follows the flowchart below.



3.3.1 Customizing the Setting of Software-based VS32

Follow the steps below to customize the settings of Software-based VS32 virtual machine.

1 From the web browser of the maintenance PC, enter the IP address of vCSA (https://192.168.1.2:9443/). (192.168.1.2 is the example vCSA IP address).

Note: If VMware ESXi 6.0 is used, log in with vSphere Client, click **Inventory**, and continue this procedure from STEP4.

2 Check that the Caps Lock and the Num Lock lamps are not lit. Log in to vSphere Web Client with the user name and password set when creating the vCSA.

3 In the displayed **Home** screen, click **Hosts and Clusters**.

4 Right-click the Software-based VS32 virtual machine from the menu on the left side of the screen. Choose **Open Console**.

Note: The Software-based VS32 machine needs to be on a power on state (the green triangle is displayed in the icon of the machine). If needed, right-click on the machine and choose Power -> Power On.

Note: In this manual, the virtual machine is named [DAT].

5 "VS-32 login:" appears on the console screen.

```
VS-32 login :
```

6 After starting the Software-based VS32 virtual machine, type "config" as login name and press Enter key.

```
VS-32 login : config
```

The prompt "VS-32 >" appears on the screen.

```
VS-32 login : config
VS-32 Maintenance Command
VS-32>
```

7 Execute the “setup tp“ command and set the necessary network data for starting the Software-based VS32. Depending on whether or not a DHCP server is used, the following is assigned (by default a DHCP server is used):

【If DHCP server is used】
If IP addresses are automatically assigned from a DHCP server, it is not necessary to set in Software-based VS32 the IP address and default gateway of Software-based VS32 and the IP address (ACT) of the Telephony Server. However, set the following IP addresses in the DHCP server: **Note 1**

- Default Gateway
- Telephony Server LAN1 IP Address (ACT) **Note 2**

Note1: Check that the number of IP addresses saved in DHCP server is sufficient so as to get IP address of Software-based VS32 anytime.

Note2: Assign the required DHCP options in Add Option Type dialog box as below. (Refer to [DHCP Server Setup] - [System Description] for more information on DHCP Server Optional Setting.)

Name	Not specified, but do not enter the same option name in duplicate
Data	IP Address
Array	Checked
Code	161

【If DHCP server is not used】
Set the following IP addresses with the Software-based VS32 console:

- Default Gateway
- Telephony Server LAN1 IP Address (ACT)
- Software-based VS32

(1) Current state of DHCP is displayed.
(2) For changing the displayed settings enter "y".
Y: Change
N: Do not Change (Proceed to STEP8)
Q: Finish the setting (Proceed to STEP12)
(3) Set to enable or disable the DHCP server.
E: Enable (default) (Proceed to STEP11)
D: Disable

```
DAT> SETUP TP
--- DHCP Interface set ---
Current DHCP Interface  : ENABLE
Change DHCP Interface?
[Y(change)/N(current)/Q(quit)]  : y
Input new DHCP Interface
[E(enable)/D(disable)]  : d
```

8

Set the Software-based VS32 IP address and the subnet mask
(1) Current IP address and subnet mask are displayed.
(2) For changing the displayed settings enter "y".
Y: Change
N: Do not Change (Proceed to STEP9)
Q: Finish the setting (Proceed to STEP12)
(3) Enter the Software-based VS32 IP address (ex. “192.168.1.14”) and the subnet mask

```
--- IP Address & Subnetmask set ---
Current IP Address  : 0.0.0.0
Current Subnetmask  : 0.0.0.0
Change IP Address and Subnetmask?
[Y(change)/N(current)/Q(quit)]  : y
Input new IP Address  : 192.168.1.14
Input new Subnet mask  : 255.255.255.0
```

9

Set the default gateway.
(1) Current default gateway is displayed.
(2) For changing the displayed settings enter "y".
Y: Change
N: Do not Change (Proceed to STEP10)
Q: Finish the setting (Proceed to STEP12)
(3) Enter the default gateway address.

```
--- Default Gateway IP Address set ---
Current Default Gateway  : 0.0.0.0
Change Default Gateway?
[Y(change)/N(current)/Q(quit)]  : y
Input new Default Gateway  : 192.168.1.254
```

10 Set the Telephony Server LAN1 (ACT) IP address.

(1) Current Telephony Server information (IP Address, port number) is displayed.

(2) For changing the displayed settings enter "y".
Y: Change
N: Do not Change (Proceed to STEP11)
Q: Finish the setting (Proceed to STEP12)

(3) Enter the unit of the Telephony Server.

(4) Enter the Telephony Server LAN1 (ACT) IP address (ex. “192.168.1.11”).

(5) Enter the port number of the Telephony Server (default 3456).

(6) For continuing the settings enter "y".
Y: Continue (Proceed to STEP11)
N: Do not Continue (Proceed to STEP12)

```
--- DRS IP Address set ---
Current DRS Server/IP Address/Port Number :
Primary DRS Address 0.0.0.0, Port3456
Secondary DRS Address 0.0.0.0, Port3456
Tertiary DRS Address 0.0.0.0, Port3456
Fourth DRS Address 0.0.0.0, Port3456
Change DRS Information ?
[Y(change)/N(current)/Q(quit)] : y
Input DRS unit
(1 : Primary/2 : Secondary/3 : Tertiary/4 :
Fourth) : 1
Input DRS IP Address : 192.168.1.11
Input DRS Port Number : 3456
Continue ? [Y(continue)/N(exit)] : n
```

11 Set the LAN speed and mode.

(1) Current LAN transmission mode is displayed.

(2) For changing the displayed settings enter "y".

Y: Change

N: Do not Change (Proceed to STEP12)

Q: Finish the setting (Proceed to STEP12)

(3) Enter “1” as the transmission speed.

1: Auto negotiation (default)

2: Fixed to 1000 Mbps (not used)

3: Fixed to 100 Mbps (not used)

4: Fixed to 10 Mbps (not used)

```
--- Ethernet Speed set ---
Current LAN Speed  : auto
Change LAN Speed? [Y(change)/N(current)/
Q(quit)]  : y
Input new Speed
[1(AUTO)/2(1000M)/3(100M)/4(10M)]  : 1
```

Note: Select Auto negotiation for speed. (virtual switches can only operate using auto negotiation.)

12 Save the settings.

(1) For saving the displayed settings enter "y".

Y: Save

N: Do not save

(2) Setup result is displayed.

```
** Don't power off in progress **
Do you save the configuration data? [Y/N]  : y
Configuration data has been saved.
Re-starting is required for making a setup
reflect!!
TP mode setting succeeded.
```

The settings of Software-based VS32 virtual machine have been completed.

3.3.2 WAVE File Settings

Set the WAVE files. For an explanation about the file, see [Maintenance] -> [Maintenance Commands] ->WAVE-FILE.

3.3.3 Data Saving

The following explains how to save the data settings of Software-based VS32 IP address, Telephony Server address and default gateway on the hard disk.

1 Save the system data.

(1) Execute the “save configdata” command.
(2) Enter "y".
(3) Results are displayed.

```
VS-32> SAVE CONFIGDATA
** Don't power off during save**
May I save ? [Y/N]  : y
Preservation of configuration data was successful.
Re-starting is required for making a setup
reflect!!
```

Note: If the set data is not saved, it is lost after performing a restart.

Data saving has been completed.

3.3.4 Restarting Software-based VS32

Proceed as follows for the restart.

1 Restart the Software-based VS32.
(1) Execute the “reboot” command.
(2) Enter "y".

```
VS-32>REBOOT
May I do reboot? [Y/N]  : y
```

2 After the Software-based VS32 is rebooted, the following message appears on the screen.

```
VS-32 login:
```

The restart of Software-based VS32 has been completed.

4. Maintenance

4.1 Connecting Software-based VS32 to Virtual Console

Follow the steps below to connect the virtual console to the Software-based VS32.

1 Launch the web browser from the maintenance PC and enter the IP address of vCSA (https://192.168.1.2:9443/). (192.168.1.2 is the example vCSA IP address).

Note: If VMware ESXi 6.0 is used, log in with vSphere Client, click **Inventory**, and continue this procedure from STEP4.

2 Check that the Caps Lock and the Num Lock lamps are not lit. Log in to vSphere Web Client with the user name and password set when creating the vCSA.

3 In the displayed **Home** screen, click **Hosts and Clusters**.

4 Right-click the Software-based VS32 virtual machine from the menu on the left side of the screen. Choose **Open Console**.

5 "VS-32 login:" appears on the console screen.

```
VS-32 login:
```

6 After starting the Software-based VS32 virtual machine, type "config" as login name and press Enter key.

```
VS-32 login : config
```

7 The prompt "VS-32>" appears on the screen.

```
VS-32 login : config
VS-32 Maintenance Command
VS-32>
```

Connecting Software-based VS32 to the virtual console has been completed.

4.2 Rebooting Software-based VS32

Basically, when rebooting the Software-based VS32, use virtual console. When virtual console cannot be used, reboot through the vSphere Web Client.

Note: When restarting the Software-based VS32 using vSphere Web Client, the configuration data will not be saved. When data saving is necessary, be sure to use virtual console to save the data.

Note: During the restart of the Software-based VS32, an alarm “Stop Guest OS” may be detected. In that case, after an elapse of one minute of the restarting, update the display of vSphere Web Client and confirm that the alarm disappears.

4.2.1 Rebooting Software-based VS32 with Virtual Console

1 Log in with config user.

2 Restart the Software-based VS32.
(1) Execute the “reboot” command.
(2) Enter "y".

```
VS-32>REBOOT
May I do reboot? [Y/N]  : y
```

3 After the Software-based VS32 is rebooted, the following message appears on the screen.

```
VS-32 login:
```

4 Enter “config” as login name and press the Enter key.

```
VS-32 login : config
```

Check that the prompt “VS-32 >” appears on the screen.

```
VS-32 login : config
VS-32 Maintenance Command
VS-32>
```

4.2.2 Rebooting Software-based VS32 with vSphere Web Client

1. Launch the web browser from the maintenance PC and enter the IP address of vCSA (https://192.168.1.2:9443/). (192.168.1.2 is the example vCSA IP address).

   Note: If VMware ESXi 6.0 is used, log in with vSphere Client, click **Inventory**, and continue this procedure from STEP4.

2. Check that the Caps Lock and the Num Lock lamps are not lit. Log in to vSphere Web Client with the user name and password set when creating the vCSA.

3. In the displayed **Home** screen, click **Hosts and Clusters**.

4. Right-click the Software-based VS32 virtual machine from the menu on the left side of the screen. Choose **Power** -> **Restart Guest OS**.

5. Transmit a Ping command from the maintenance console to IP address of Ether1 of the Software-based VS32. Confirm its response.

6. Right-click the Software-based VS32 virtual machine from the menu on the left side of the screen. Choose **Open Console**.

7. After the rebooting, the following prompt appears.

```
VS-32 login:
```

8. Enter “config” as login name and press the Enter key.

```
VS-32 login : config
```

   Check that the prompt “VS-32 >” appears on the screen.

```
VS-32 login : config
VS-32 Maintenance Command
VS-32>
```

4.3 Maintenance Commands

Maintenance commands are used to change the Software-based VS32 configuration setting. Default value is pre-assigned to the basic items. Therefore, execute the data change only when needed.

The “setup” command is provided to assign the basic data collectively. At least IP address and music source file settings are required to start up Software-based VS32. Use “setup tp” and “setup wavefile” respectively.

Use the “set” command to assign other data details. Specify any required parameter for each item. For example, DHCP setting has ENABLE as default. When static addressing is required, use the commands “DHCP”, “IP address”, and “defaultroute”.

The commands are executed from the virtual console of the Software-based VS32 using vSphere Web Client. For the connection of the virtual console see 4. Maintenance.

When the system is ready, the following prompt is shown on the screen.

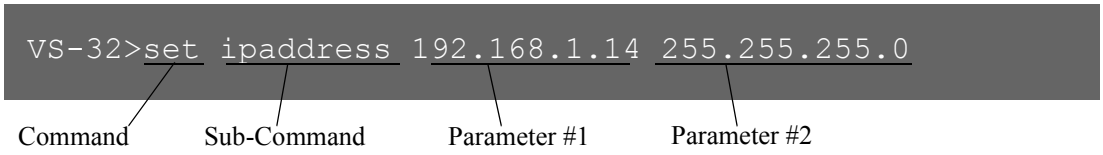
```
VS-32>_
```

Note: Please note the following:

- When “exit” is entered on OS prompt, setting screen may stop. In this case, press CTRL + C keys to return to prompt.
- Key operation of CTRL + C keys on maintenance console may stop setting screen. In this case, press CTRL + Q keys to return to prompt.

Maintenance Command consists of some components: Command, Sub-command, and Parameter. The values to be assigned for each Parameter depend on the Maintenance Command, some of the Maintenance Commands do not require any parameter. A space needs to be entered between Command, Sub-command, and Parameter.

An example screen setting IP address (192.168.1.14) and subnet mask (255.255.255.0) in the system data of VS32 is shown below.



[Command List]

The Maintenance Console uses the commands listed in the following tables.

SETUP

	Sub command	Feature
1	TP	Setting basic IP data.
2	WAVEFILE	Setting of WAVEFILE.

SET

	Sub command	Feature
1	DEFAULTROUTE	Setting Default Gateway.
2	DHCP	Setting DHCP.
3	DRSADDRESS	Setting IP address and port number of Telephony Server.
4	DRSTOS	Setting ToS value for Telephony Server session.
5	INTERFACE	Setting the communication speed of LAN interface.
6	IPADDRESS	Setting IP address and subnet mask of Software-based VS32.
7	PORTNUMBER	Setting port number of each application.
8	VLAN	Setting VLANs.

SHOW

	Sub command	Feature
1	CONFIGDATA	To show configuration data list.
2	COUNTRYCODE	To show Country Code.
3	DHCP	To show DHCP setting.
4	DRSADDRESS	To show IP address and port number of Telephony Server.
5	DRSTOS	To show ToS setting for Telephony Server session.
6	INTERFACE	To show the setting of LAN communication speed.
7	IPADDRESS	To show the setting of IP address, subnet mask, and Default Gateway on Software-based VS32.
8	PORTNUMBER	To show port number setting.
9	STATUS	To show the status of Software-based VS32.
10	VERSION	To show the firmware information.
11	VLAN	To show VLAN settings.

SAVE

	Sub command	Feature
1	CONFIGDATA	To save system data.

INIT

	Sub command	Feature
1	CONFIGDATA	To initialize configuration data to the factory default setting.

REBOOT

	Sub command	Feature
1	–	To reboot Software-based VS32.

PUT

	Sub command	Feature
1	CONFIGDATA	To upload the configuration data file to the specified TFTP server:

PING

	Sub command	Feature
1	–	To check the network conditions.

EXIT

	Sub command	Feature
1	–	To exit the maintenance command.

DOWNLOAD

	Sub command	Feature
1	–	To download a program.

Note: When two or more characters are input for specifying command or sub command entry, full name is automatically displayed complementing the rest of the characters. (e.g. When “IN” is input following the set command, “INTERFACE” setting line automatically appears.)

[Help]

When the maintenance command mode is activated, it provides a Help Function for referring to available commands and sub commands. After a prompt is shown, request to list up the Target Help by entering “?”, “command name + ?”, or “command name + sub command name + ?” after the prompt, and press the Enter key.

SETUP

Note: The following IP address and other data entered are an example. When entering the data, perform the settings according to your actual network environment.

1.TP

```
1.VS-32>SETUP TP
```

(1) Setting DHCP server enable/disable

```
--- DHCP Interface set---

Current DHCP Interface : ENABLE

Change DHCP Interface? [Y(change)/
N(current)/Q(quit)] : Y



Input new DHCP Interface [E(enable)/
D(disable)] : D
```

The current setting is displayed.

Asked whether to change the displayed setting.
Y=change
N=not change
Q=quit this setting

Specify whether to use DHCP server.
E=Use DHCP server (default)
D=Not use DHCP server

If DHCP is used, the data from (2) to (4) (Software-based VS32 IP address, subnet mask, default gateway and Telephony Server IP address) is not requested and the console proceeds to (5): setting communication speed of LAN interface.

(2) Setting IP Address and Subnet Mask of Software-based VS32

```
--- IP Address & Subnetmaskset---

Current IPAddress : 0.0.0.0
Current Subnetmask : 0.0.0.0

Change IP Address and Subnetmask?
[Y(change)/N(current)/Q(quit)] : Y



Input new IP Address : 192.168.1.14


Input new Subnet mask : 255.255.0.0
```

The current setting is displayed.

Asked whether to change the displayed setting.
Y=change
N=not change
Q=quit this setting

Enter new IP address of Software-based VS32 (e.g. 192.168.1.14).

Enter new Subnet Mask (e.g. 255.255.0.0).

Note: Do not assign network address and broadcast address for Software-based VS32 setting. See the examples below:
(Example 1) Network address cannot be assigned as IP address of Software-based VS32.
IP address: 192.168.1.0
Subnet mask: 255.255.255.0
(Example 2) Network address cannot be assigned as IP address of Software-based VS32.
IP address: 172.16.0.0
Subnet mask: 255.255.0.0
(Example 3) Broadcast address cannot be assigned as IP address of Software-based VS32.
IP address: 192.168.1.255
Subnet mask: 255.255.255.0
(Example 4) Broadcast address cannot be assigned as IP address of Software-based VS32.
IP address: 172.16.255.255
Subnet mask: 255.255.0.0

(3) Setting Default Gateway IP Address

```
--- Default Gateway IPAddress set---

Current Default Gateway : 0.0.0.0

Change Default Gateway? [Y(change)/
N(current)/Q(quit)] : Y



Input new Default Gateway : 192.168.1.254
```

The current setting is displayed.

Asked whether to change the displayed setting.
Y=change
N=not change
Q=quit this setting

Enter new IP address of Default Gateway (e.g. 192.168.1.254).

Note: Assign Default Gateway on the same network segment where Software-based VS32 belongs.

(4) Setting IP Address and Port Number of Telephony Server

```
--- DRS IP Address set--

Current DRS Server/IP Address/Port Number :

Primary     DRS Address   0.0.0.0   ,Port3456
Secondary   DRS Address   0.0.0.0   ,Port3456
Tertiary    DRS Address   0.0.0.0   ,Port3456
Fourth      DRS Address   0.0.0.0   ,Port3456
```

The current setting of Telephony Server information (IP address and port number) is displayed.

```
Change DRS Information? [Y(change)/
N(current)/Q(quit)] : Y



Input DRS unit(1 : Primary/2 : Secondary/3 :
Tertiary
/4 : Fourth) : 1

Input DRS IP Address : 192.168.1.11

Input DRS Port Number : 3456

Continue?[Y(continue)/N(exit)] : N
```

Asked whether to change the displayed setting.
Y=change
N=not change
Q=quit this setting

Enter new number for Telephony Server.

Enter the LAN1 (ACT) IP address of Telephony Server (e.g. 192.168.1.11).

Enter the port number address of Telephony Server (e.g. 3456).

Asked whether to continue the setting of other DRSs.
Y=Continue to register other DRSs
N=Exit this setting and move on to the next step

(5) Setting Communication Speed of LAN Interface

```
--- Ethernet Speed set---

Current LAN Speed : auto

Change LAN Speed? [Y(change)/N(current)/
Q(quit)] : Y



Input new Speed [1(AUTO)/2(1000M)/3(100M)/
4(10M)] : 1
```

The current setting is displayed.

Asked whether to change the displayed setting.
Y=change
N=not change
Q=quit this setting

Select the communication speed of LAN interface.
1=Auto negotiation (default)
2=1000Mbps fixed mode
3=100Mbps fixed mode
4=10Mbps fixed mode

Note: Select Auto negotiation for speed. (virtual switches can only operate using auto negotiation.)

```
** Don't power off in progress **
```

```
Do you save the configuration data? [Y/N] : Y



Configuration data has been saved.
Re-starting is required for making a setup
reflect!!
TP mode setting succeeded.
```

Asked whether to save the assigned data.
Y=Save
N=Discard

Result is displayed.

Note: If the settings are quit in the middle of data assignment, the already entered data is lost.

2.WAVEFILE

WAVE file is FTP downloaded and saved in the hard disk.

Before using this command, sound source file meeting the following specifications must be prepared:

- Sound Format

  Sampling Frequency: *8kHz*
  Quantifying Bit Number: *8 bit*
  Quantifying Format: *G711 A-law/μ-law*
  Channel: *Monaural*

The first three letters of sound file name must be specified in three digits (000xxxxx-249xxxxx), which are to be associated with Announcement Patterns (ANP) number of AAEDL/AAEDN command, and the identifier must be *wav* or *mdt*.
The number of files is up to 250, and its capacity adds up to approximately 8M byte (about 960 seconds); however, it includes management domain for file system so that the actual capacity is less than 8M byte.

Note: If there are wave files of Software-based VS32 with the same number, the system cannot find the file to play back. Make sure not to assign the same number to multiple files.

Note: When 250 is assigned to ANP, internal music-on-hold 250_minuetto.wav (Minuet) is played. Do not use reserved ANPs 251 to 254 of announcement pattern.

Note: Only the following ASCII characters can be used for file name:
!#$%&’()+,-.0123456789;=@ABCDEFGHIJKLMNOPQRSTUVWXYZ[]^_‘abcdefghijklmnopqrstuvwxyz{ }~

"Setup wavefile" is a command of dialog format and has sub menus 1~10. When using announcement feature, download in advance appropriate wave files and save them to hard drive with this command.

MENU	MEANING
1. Change remote working directory	Changes the FTP directory
2. List contents of remote directory	Displays the files in the current directory of the FTP server
3. Receive remote file	Downloads the WAVE file from the FTP server
4. List contents of local directory	Displays Software-based VS32 WAVE files
5. Send local file	Uploads Software-based VS32 WAVE files
6. Copy local file	Copies Software-based VS32 WAVE files
7. Rename local file	Renames Software-based VS32 WAVE files
8. Delete local file	Erases Software-based VS32 WAVE files
9. Check wave file for VS-32	Checks the Software-based VS32 WAVE files format
10. Terminate ftp session and exit	Terminates the FTP session and close the WAVE file settings menu

Note: Perform the WAVE settings for one file each time. Two or more files cannot be set at once.

The following is and example when downloading a WAVE file from an FTP server (IP address 192.168.1.19). Also, in the example the username used is "dat".

```
VS-32>SETUP WAVEFILE 192.168.1.19

ftp 192.168.1.19
User : dat
Password : *****

Please enter item number
  1. Change remote working directory
  2. List contents of remote directory
  3. Receive remote file
  4. List contents of local directory
  5. Send local file
  6. Copy local file
  7. Rename local file
  8. Delete local file
  9. Check wave file for VS-32
  10. Terminate ftp session and exit
```

Enter user name and password to log in to FTP server. (***** is displayed for password.)

Sub menus 1~10 are listed.

```
enter(1-10) : 2
.
..
000.wav
001.wav
002.wav
003.wav
004.wav
005.wav
006.wav

Please enter item number
  1. Change remote working directory
  2. List contents of remote directory
  3. Receive remote file
  4. List contents of local directory
  5. Send local file
  6. Copy local file
  7. Rename local file
  8. Delete local file
  9. Check wave file for VS-32
  10. Terminate ftp session and exit enter(1-10) : 3
Remote file : 006.wav
ftpDownload : User file FTP start.
ftpClient : 006.wav Download successful

Please enter item number
  1. Change remote working directory
  2. List contents of remote directory
  3. Receive remote file
  4. List contents of local directory
  5. Send local file
  6. Copy local file
  7. Rename local file
  8. Delete local file
  9. Check wave file for VS-32
  10. Terminate ftp session and exit

enter(1-10) : 10
  Wave file system is changed.
```

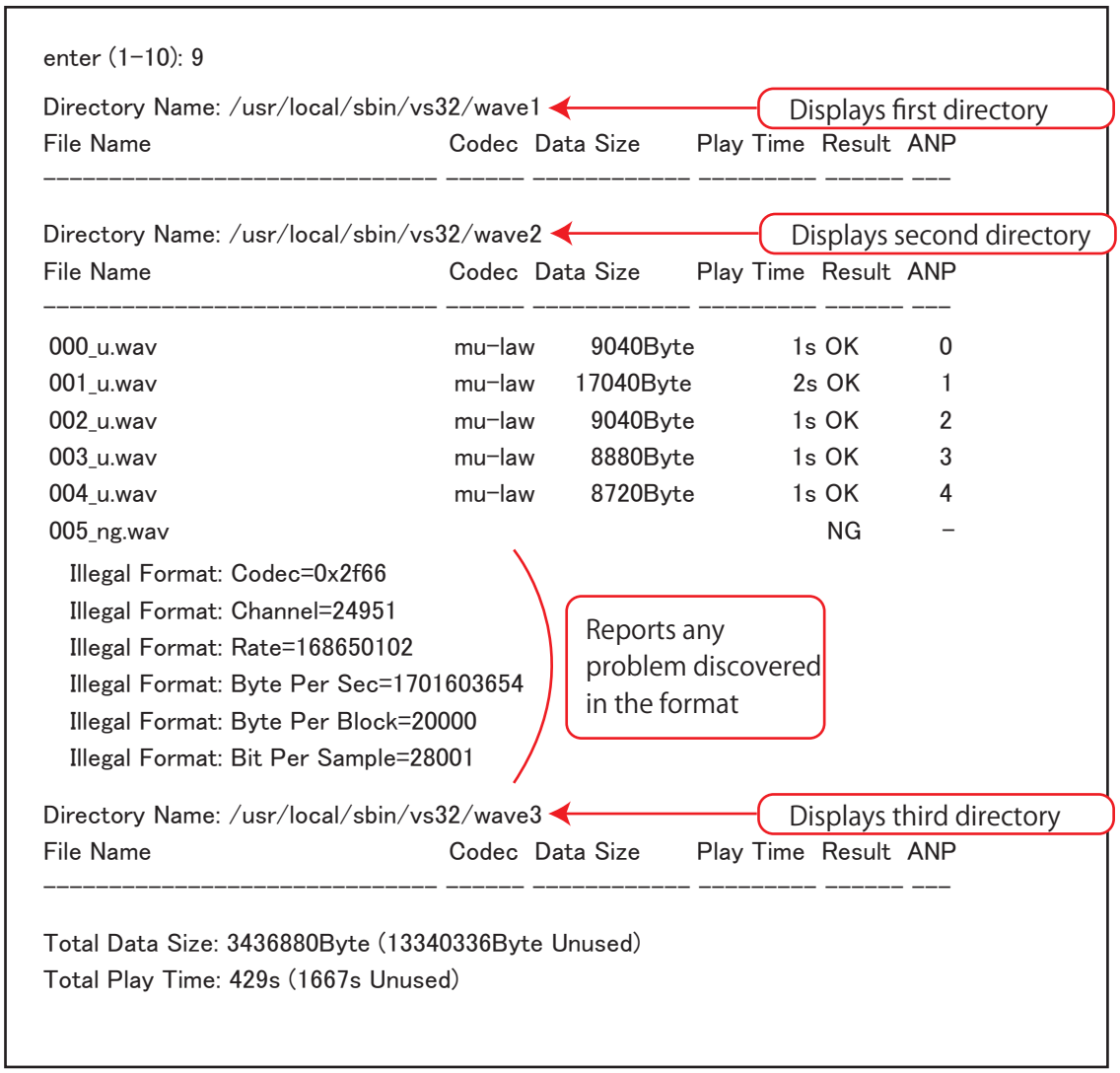
When parameter 2 is entered, wave files stored on FTP server are listed.

On the sub menu select line, enter the parameter 3 to specify the wave file name.

Enter the parameter 10 to adjust the wave file to the system. The wave file is saved.
The saved wave files turns available as the sound source of announcement.

WAVE Format File Checking Feature

It is possible to check whether the formats of the WAVE file of the internal Flash ROM and CF card are valid for using the file with VS32.



The type of error messages displayed when a file cannot be played are as follows:

Illegal Format	Normal Value	Measure
Codec	0x0006 (A-law) 0x0007 (μ-law)	Create wave file with μ-law or A-law of PCM codec.
Channel	1 (monaural)	Create wave file with monaural channel.
Rate	8000 (8kHz)	Create wave file with 8kHz of sampling period.
Byte Per Sec	8000	Create wave file with 8kHz and 8-bit of sampling.
Byte Per Block	1	Create wave file specifying 8-bit and monaural channel as quantization sample bit number.
Bit Per Sample	8	Create wave file specifying 8-bit as quantization sample bit number.

SET

(1) DEFAULTROUTE

This command is used to set the default gateway. Assign the IP address of Default Gateway in the same segment where Software-based VS32 belongs. This data can be set also in setup TP command.

```
VS-32> SET DEFAULTROUTE 192.168.1.254


The default gateway setting succeeded.
```

P1: Enter the IP address of Default Gateway. (e.g. 192.168.1.254)

Result is shown.

Note: To make this assignment effective, use the “save” command, and restart before exiting the maintenance command.

(2) DHCP

This command is used to set DHCP server use. Assign ENABLE when the network uses DHCP server to get IP address. Assign DISABLE when the network applies static addressing. This data can be set also in setup TP command.

```
VS-32> SET DHCP ENABLE



DHCP setting succeeded.
```

P1: Enter ENABLE or DISABLE.
ENABLE=DHCP is valid (default)
DISABLE=DHCP is invalid

Result is shown.

Note: To make this assignment effective, use the “save” command, and restart before exiting the maintenance command.

(3) DRSADDRESS

This command is used to set IP address and port number of Telephony Server. Usually use the default port number is 3456 when the setting is not changed in the Telephony Server side. IP address can be set in setup the TP command. Port number can be set in the set port number command.

```
VS-32> SET DRSADDRESS

Please enter DRS unit
(1 : Primary/2 : Secondary/3 : Tertiary/4 :
Fourth) : 1

DRS server address(ex. 111.22.3.4) :
192.168.1.11

DRS port number(ex. 3456) : 3456


DRS server address set complete.
```

Enter the unit of Telephony Server. (Usually 1: Primary is used.)

Enter the IP address of Telephony Server. (e.g. 192.168.1.11)

Enter the port number of Telephony Server. (default = 3456)

Result is shown.

Note: To make this assignment effective, use the “save” command, and restart before exiting the maintenance command.

(4) DRSTOS

This command is used to set quality of service data for Telephony Server. PRECEDENCE setting by specifying each bit or VALUE setting by entering the setting value directly can be selected. Select VALUE setting when specifying Codepoint of Diffserv. Usually use this command data in default setting.

```
VS-32> SET DRSTOS PRECEDENCE

PRECEDENCE(0-7) : 6
DELAY(0/1) : 0
THROUGHPUT(0/1) : 0

RELIABILITY(0/1) : 0

COST(0/1) : 0

DRS TOS setting succeeded.(0xC0)
```

Enter PRECEDENCE following the sub command.

Precedence: 0-7 (low-high) (default=6)

Delay: 0/1=Normal (default)/Low delay

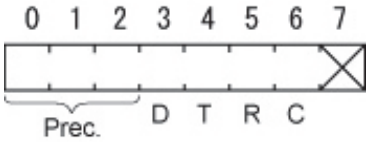
Throughput: 0/1=Normal (default)/High throughput ON

Reliability: 0/1=Normal (default)/High reliability ON

Cost: 0/1= Normal (default)/Cost precedence ON

Result is shown.

Note: Result of data setting is shown in a 1-byte (hexadecimal) format in accordance with the setting dialog followed by the prompt. The meaning of 1-byte data is shown below:



Prec.=PRECEDENCE (3 bits)
D=Delay
T=Throughput
R=Reliability
C=Cost

```
VS-32> SET DRSTOS VALUE

TOS(00-FF) : C0

DRS TOS setting succeeded.(0xC0)
```

Enter VALUE following the sub command.

Specify the value directly in the range of 00-FF (default=C0).

Result is shown.

Note: To make this assignment effective, use the “save” command, and restart before exiting the maintenance command.

(5) INTERFACE

This command is used to set the communication speed of LAN interface. Be sure to assign this data adjusting to the network devices (router, switch, or HUB, etc.). This data can be set also in setup TP command.

Note: Select Auto negotiation for speed. (virtual switches can only operate using auto negotiation.)

```
VS-32> SET INTERFACE eth0

SPEED(AUTO/1000M/100M/10M) : AUTO
```

P1: Enter interface name (*can be skipped).

Select the communication speed.
AUTO=Auto Negotiation (default)
1000M=1000 Mbps fixed mode
100M=100 Mbps fixed mode
10M=10 Mbps fixed mode

Note: DUPLEX setting does not appear when AUTO (Auto Negotiation) is selected in SPEED setting.

Note: To make this assignment effective, use the “save” command, and restart before exiting the maintenance command.

Note: When NEC Express 5800 FT server is used as host server, the values set with this command are not used. For an explanation, see [Software Model Installation Manual] - [SOFTWARE MODEL INSTALLATION AND SETUP] - [Before Installation].

(6) IPADDRESS

This command is used to set the IP address and subnet mask of Software-based VS32. Be sure to assign this data when static addressing is used in the network. This data can be set also in setup TP command.

```
VS-32> SET IPADDRESS 192.168.1.14
255.255.255.0

IP address set complete
```

P1: IP address/ *P2*: subnet mask.

Result is shown.

Note: To make this assignment effective, use the “save” command, and restart before exiting the maintenance command.

Note: The designated IP address cannot be applied when DHCP is set to ENABLE. Be sure to assign the DHCP setting to DISABLE before performing this IP address assignment.

(7) PORTNUMBER

This command assigns the communication port for Telephony Server communication (UDP), Internal PHE (UDP), Peer-to-Peer (UDP), H.245 start port (TCP), and RTP start port (UDP). Specify this data when any restriction is placed on available port number in the IP network where Software-based VS32 belongs.

The port of Telephony Server communication and the port PHE communication are the ports numbers used in the communication control with the Telephony Server.
Peer-to-Peer communication port is the port for communication control with the devices of a call partner.
H.245 start communication port is the port for communication control with the devices of a call partner. It allows to reserve 1024 ports starting with the selected port.
RTP start port is the port for voice data and the devices of a call partner. It allows to reserve 1024 ports starting with the selected port.
Pressing the return key moves across the parameters without entering data.
In normal operations leave the default values.

```
VS-32> SET PORTNUMBER

DRS Port Number(3456) : 3456


LPPM Port Number(60130) : 60130


Voice Path Control Port Number(62000) :
62000

H245 Start Port Number(60000) : 60000

RTP Start port Number : (1024) : 1024

Port Number setting succeeded.
```

Enter communication port of DRS. (default=3456)

Enter communication port of Internal PHE. (default=60130)

Enter P2P communication port. (default=62000)

Enter H.245 start port. (default=60000)

Enter RTP start port. (default=1024)

Result is shown.

Note: To make this assignment effective, use the “save” command, and restart before exiting the maintenance command.

Note: The value in ( ) shows the current setting. Press the Enter key to skip changing the displayed port number.

(8) VLAN

This command assigns VLAN ID and its COS value. When VLAN is enabled in Software-based VS32, Physical LAN becomes invalid. IP address, netmask, and Default Gateway settings in physical LAN are applied to VLAN.

When VLAN has not been set yet:

```
VS-32> SET VLAN

Please enter a parameter

VLAN set ENABLE or DISABLE : enable


VLAN ID(1-4094) : 5

COS(0-7) : 3

VLAN device setting complete.
```

ENABLE=VLAN is used.
DISABLE=VLAN is not used. (default)

Enter the VLAN_ID [1-4094].

Enter the Class of Service (COS) setting [0-7].

Result is shown.

Note: To make this assignment effective, use the “save” command, and restart before exiting the maintenance command.

When VLAN has already been set:

```
VS-32> SET VLAN

VLAN-ID and COS exist already.
Is it all right although overwritten?
[Y(write)/ N(current)/Q(quit)] : y

Please enter a parameter

VLAN set ENABLE or DISABLE : enable


VLAN ID(1-4094) : 5

COS(0-7) : 3

VLAN device setting complete.
```

Y=Overwrite the current setting
N=Not change
Q=Quit this command setting

ENABLE=VLAN is used.
DISABLE=VLAN is not used. (default)

Enter the VLAN_ID [1-4094].

Enter the Class of Service (COS) setting [0-7].

Result is shown.

Note: To make this assignment effective, use the “save” command, and restart before exiting the maintenance command.

SHOW

(1) CONFIGDATA

Configuration data list used in Software-based VS32 is displayed.

```
VS-32> SHOW CONFIGDATA

[SYSTEM]
REGISTER_MODE=TP
FTPS_USER=
FTPS_PASS=
TIMESYNC=ENABLE

[IP]
OWN_ADDR=xx.xx.xx.xx
:
```

Related data is displayed.

(2) COUNTRYCODE

Country code used in Software-based VS32 is displayed.

```
VS-32> SHOW COUNTRYCODE

Use country is JPN.(Japan code : 0x0001)
```

The current country code setting is shown.

(3) DHCP

DHCP setting used in Software-based VS32 is displayed.

```
VS-32> SHOW DHCP

DHCP is ENABLE
```

The current DHCP setting is shown.

(4) DRSADDRESS

Telephony Server IP address and port number setting used in Software-based VS32 are displayed. By entering the number associated to each of the Telephony Servers setting, such specific setting can be verified (1=Primary/ 2=Secondary/ 3=Tertiary/ 4=Fourth). If the number is not entered, all the settings are displayed.

```
VS-32> SHOW DRSADDRESS 1


Primary DRS Address 192.168.1.11, Port 3456
```

P1: Specify the Telephony Server (in the example 1: Primary).

Settings for the specified number are displayed.

```
VS-32> SHOW DRSADDRESS
```

P1: Entering is skipped.

```
Primary DRS Address 192.168.1.11, Port 3456

Secondary DRS Address 192.168.1.21, Port
3457
Tertiary DRS Address 192.168.1.22, Port
3457
Fourth DRS Address 192.168.1.23, Port 3457
```

The current setting for all the Telephony servers is shown.

Secondary or latter Telephony Servers are not displayed when not assigned.

(5) DRSTOS

ToS setting for Telephony Server session used in Software-based VS32 is displayed

```
VS-32> SHOW DRSTOS
DRS TOS is 0xC0.

PRECEDENCE=6
DELAY=0
THROUGHPUT=0
RELIABILITY=0
COST=0
```

Current TOS setting is shown.

(6) INTERFACE

LAN communication operating setting used in Software-based VS32 is displayed.

Note: When NEC Express 5800 FT server is used as host server, the values displayed with this command may be wrong. For an explanation, see [Software Model Installation Manual] - [SOFTWARE MODEL INSTALLATION AND SETUP] - [Before Installation].

```
VS-32> SHOW INTERFACE eth0
Setting : Auto-negotiation
Status : Speed is 1000Mbps, Full Duplex,
Link Up
```

P1: Enter the interface name (*can be skipped).
Actual operating state is shown.

(7) IPADDRESS

IP address, subnet mask, and Default Gateway setting used in Software-based VS32 are displayed.

```
VS-32> SHOW IPADDRESS eth0
```

P1: Enter the interface name (*can be skipped).

```
IP Address 192.168.1.14
Netmask 255.255.255.0
Default Gateway 192.168.1.254
```

Actual IP address, subnet mask, and Default Gateway are shown.

(8) PORTNUMBER

Port number setting used in Software-based VS32 is displayed.

```
VS-32> SHOW PORTNUMBER
DRS Port Number port is 3456
LPPM Port Number is 60130.
Voice Control Port Number 62000
H245 Start Port Number is 60000.
RTP Start port Number is 1024.
```

The current setting of communication port number for Telephony Server, Internal PHE, P2P, H.245 start port, and RTP start port is shown.

(9) STATUS

Status of Software-based VS32 is displayed.
When data setting cannot be executed normally and registration error occurs, use this command to check the operating state of Software-based VS32.
See the information on the screen below for the meaning of the messages outputted and the measures.

```
VS-32> SHOW STATUS
Register Mode            : TP
MAC Address              : xx : xx : xx : xx : xx : xx
Link State               : Up
Speed                    : 100Mbps
Duplex                   : Full
VLAN Mode                : Disable
DHCP Mode                : Disable
IP Address               : 192.168.1.14
Subnet Maskc             : 255.255.0.0
Default Gateway          : 192.168.1.254
Registered Drs Name      : Primary DRS
Registered Drs Address   : 192.168.1.11
Registration Status      : Online
```

The current operating state is shown.

Ether connection state is displayed:
Link: Up/Down
Speed: 1000M/100M/10M
Duplex: Full/Half

VLAN setting is displayed.

DHCP setting is displayed.

IP address of VS32 is displayed.

Subnet mask of VS32 is displayed.

Default gateway is displayed.

The name of the registration destination is displayed.

The IP address of the registration destination is displayed.

The state of the registration destination is displayed.

Note: The Registration status is shown as either online or offline. In the case of offline, the cause of registration error is to be displayed.

Note: When NEC Express 5800 FT server is used as host server, the values displayed with this command may be wrong. For an explanation, see [Software Model Installation Manual] - [SOFTWARE MODEL INSTALLATION AND SETUP] - [Before Installation].

SHOW STATUS MESSAGES AND MEASURES

Message	Status	Measure
Online.	Normal operation.	-
Registration is Started Now !	Software-based VS32 is trying registration.	Wait for a while and then check the operating state later. If the state is unchanged, there is a possibility that operation error has occurred. Try power OFF → ON.
DRS Message Send Error !	Software-based VS32 cannot send message to Telephony Server. Possible cause is: Default gateway of Software-based VS32 is not assigned (0.0.0.0).	Execute SHOW IPADDRESS command to check the default gateway setting. Reassign when 0.0.0.0 is set.
DRS Message is Unreceivable !	Registration message cannot be received from Telephony Server. Possible cause is: • Software-based VS32 sets incorrect IP address of Telephony Server. • Telephony Server is shut down. • Software-based VS32 has incorrect IP network setting. • Channel route between Software-based VS32 and Telephony Server is disconnected.	• Execute SHOW commands to check the Telephony Server's IP address setting is correct on Software-based VS32. • Check the Telephony Server is on operating state. • Execute ADTM command on PCPro to send Ping and check the response is normally received.
This VS32 is Unregistered !	Software-based VS32 is not programmed on Telephony Server.	Assign Software-based VS32 data on Telephony Server by PCPro.
PH is Unavailable on Server !	PH on Telephony Server does not work properly.	Confirm whether the PH works normally on Telephony Server.
Exceeded Capability !	Telephony Server has exceeded the registration capacity.	Registration number for IP terminal reaches capacity. Check the capacity of PH.

SHOW STATUS MESSAGES AND MEASURES

Message	Status	Measure
Parse Error !	Software-based VS32 sends incorrect message.	Wait for a while and then check the operating state later. When the state is unchanged, there is a possibility that operation error has occurred. Try power OFF → ON.
Receive Result is not Support !	Messages from Telephony Server include some data impossible to analyze.	Notification of unacceptable setting on Software-based VS32 firmware is sent from Telephony Server. • Verify that the Telephony Server operates normally. • Confirm the Software-based VS32's firmware version complies with system program.
Receive Registration Data Error !	Conference information from Telephony Server is incorrect.	Data setting on Software-based VS32 is illegal. Reassign the data referring to manual.
E1 Message Receive Time Out !	Part of initial setting command is not received from the Telephony Server.	• Collision may occur on the network. Check the state of network. • There is a possibility of Telephony Server shut down during registration. When this state continues, confirm that the Telephony Server operates normally.
Waiting Response from DHCP Now !	Software-based VS32 is trying to request IP address to DHCP server.	Software-based VS32 is applying for getting IP address with DHCP server. Wait for a while and then check the state again.
No Response from DHCP !	Response has not been received from DHCP server.	Software-based VS32 cannot receive response from DHCP server. Confirm that the DHCP server is normally operating on the network.
Registration is not Started yet !	Software-based VS32 has not started registration yet.	Wait for a while and then check the state again. When this state continues, try power OFF → ON.
VS32 Registration Error ! Unauthorized ! Double Assignment ! Illegal LEN ! Resource Unavailable !	There is a possibility that abnormal operation may occur on Software-based VS32.	Try power OFF → ON.

(10) VERSION

Version of Software-based VS32 is displayed.

```
VS-32> SHOW VERSION

Firmware : SP-XXXX XX.XX
```

Data is displayed.

(11) VLAN

VLAN setting used in Software-based VS32 is displayed.

```
VS-32> SHOW VLAN

DEVICE  ID  COS IPADDRESS   SUBNETMASK
VLAN5   5   3   192.168.1.14 255.255.255.0
```

Device name, VLAN ID, COS value, IP address, and subnet mask are shown when VLAN is assigned.

SAVE

(1) CONFIGDATA

This command saves the system data in the hard disk. Data not saved will be lost when the system is re-started.

When data is saved.

```
VS-32>SAVE CONFIGDATA

** Don't power off during save **
May I save ? [Y/N] : y

Preservation of configuration data was
successful.
Re-starting is required for making a setup
reflect!!
```

Enter “y” to save the assigned configuration data.

Result is shown.

When data is not saved.

```
VS-32>SAVE CONFIGDATA

** Don't power off during save **
May I save ? [Y/N] : n

Configuration data has not been saved.
```

Enter “n” to cancel.

Result is shown.

Other Commands

INIT

(1) CONFIGDATA

This commands reset the system data to default value. Use this command only when required to reset all the system data to default value.

```
VS-32>INIT CONFIGDATA

*** Warning !! ***
This command initializes the configuration
data.
This deletes the current setting.
Recommend to back up the setting.
Command execute or not ?[Y/N] : y

Command Complete.
You need to setup configuration data!!
```

Asked whether to execute initialization.
Y=Initialize
N=Not execute

Result is shown.

REBOOT

This command reboots Software-based VS32. Calls maintained are disconnected.

```
VS-32>REBOOT

May I do reboot? [Y/N] : Y
```

Asked whether to execute reboot.
Y=Reboot
N=Cancel

PUT

(1) CONFIGDATA

This command uploads the configuration data file to specified TFTP server.

```
VS-32>PUT CONFIGDATA xx.xx.xx.xx

The upload of configuration was succeesful.
```

Enter the IP address of TFTP server.

Result is shown.

The file is downloaded to the designed TFTP server.

PING

This commands check the network condition.

```
VS-32>PING 192.168.1.19
PING 192.168.1.12 (192.168.1.19) 56(84) bytes of
data.
64 bytes from 192.168.1.19: icmp_seq=1 ttl=128
time=1.52 ms
64 bytes from 192.168.1.19: icmp_seq=2 ttl=128
time=0.907 ms
64 bytes from 192.168.1.19: icmp_seq=3 ttl=128
time=0.797 ms
64 bytes from 192.168.1.19: icmp_seq=4 ttl=128
time=0.807 ms

--- 192.168.1.19 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss,
time 3003ms
rtt min/avg/max/mdev = 0.797/1.008/1.521/0.299 ms
```

Enter the IP address of the system to access.
The connection state with the accessed system is shown 4 times.

```
VS-32 > PING 192.168.1.19
PING 192.168.1.19 (192.168.1.19) 56(84) bytes of
data.
From 192.168.1.19 icmp_seq=2 Destination Host
Unreachable
From 192.168.1.19 icmp_seq=3 Destination Host
Unreachable
From 192.168.1.19 icmp_seq=4 Destination Host
Unreachable
--- 192.168.1.19 ping statistics ---
4 packets transmitted, 0 received, +3 errors, 100%
packet loss, time 12999ms
pipe 3
```

When the access is not possible, the message “Destination Host Unreachable” is displayed.

EXIT

This command exists from the maintenance commands.

```
VS-32>EXIT
Finished!
Exit configMode. Bye!
```

When no configuration data is changed.

```
VS-32>EXIT



Configuration data is changed.Does it save and end?

Y : It saves and ends.

N : It ends without saving.

C : Cancel

[Y/N/C] : Y

Configuration data has been changed!!
Finished!
Exit configMode. Bye!
```

When configuration data is changed and the setting has not been saved by “save” command yet.

Select Y, N, or C.

Y = Save settings and exit
N = Exit without saving
C = Cancel

Note: If any error occurs in saving the setting after “Y” is selected, the screen returns to the prompt of maintenance command.

DOWNLOAD

This command performs the downloading of program and configuration data.

Note: Usually, only the main program download operation as explained in (2) When only one programs is to be downloaded, perform as follows: is performed. Do not perform other operations.

```
VS-32>DOWNLOAD
Do you need download? [Y/N] : Y

IP configuration check.
Done.
-----------------------------------------------

VLAN Enable = No
DHCP Enable = No
IP set complete!

VS-32 IP address           : 192.168.1.14
VS-32 Subnet mask          : 255.255.0.0
VS-32 Default route        : 192.168.1.254
-----------------------------------------------

Input [S(Skip)] :192.168.1.19

VS-32 IP address           : 192.168.1.14
VS-32 Subnet mask          : 255.255.0.0
VS-32 Default route        : 192.168.1.254
TFTP Server IP address     : 192.168.1.19
-----------------------------------------------

VS-32 IP address            --- input :1
VS-32 Subnet mask           --- input :2
VS-32 Default route         --- input :3
TFTP Server IP address      --- input :4

Input [Y(Complete)/Q(Quit)] :Y
```

Select Y or N.
Y = Download
N = Do not download

Actual state is displayed.

Enter TFTP server IP address.
Actual state is displayed.

Confirm the input.
Y = Perform the change
N = Finish

(1) When all the programs are to be downloaded, perform as follows:

```
--- Download menu ---

Download of all programs. (default) --- input :1
Download of one program.            --- input :2
Quit                                --- [Q/q]

Input: 1

--- IP address information setting ---
Current setting             :1
New default                 :2
Quit                        :[Q/q]

Input:1

--- Other configuration setting ---

Modified new default    :1
Current setting         :2
New default             :3
Quit                    :[Q/q]

Input:2

--- Task execution mode ---

Waiting          :1
Immediate        :2
Quit             :[Q/q]

Input:2

>>> vs32mwlist.txt   download.

tftpDownload : User file TFTP start.
Received.
TFTPlistDload end!
```

Select the download menu.
1 = All programs
2 = Only one program
Q = Quit

IP address is asked.
1 = Use current setting
2 = Set new default
Q = Quit

Other than IP address is asked.
1 = Modify new default
2 = Use current setting
3 = Use new default
Q = Quit

Task execution mode is asked.
1 = Execute after waiting
2 = Execute immediately
Q = Quit

List file is downloaded and the files in the list are downloaded.

```
--- Program download mode ---
Download start.....
>>> Main program     download.
<< Download program file. >>
tftpDownload : User file TFTP start.
Received.
Checksum matched!

>>> System data      download.
<< Download program file. >>
tftpDownload : User file TFTP start.
Received.
Checksum matched!
Other configuration setting OK!
IP address information setting OK!
BackUP Systemdata Saved
Systemdata Saved
Download OK!
Please reboot to reflect the download setting.
VS-32 >
```

The download result is displayed.

(2) When only one programs is to be downloaded, perform as follows:

```
--- Download menu ---

Download of all programs. (default) --- input :1
Download of one program.            --- input :2
Quit                                --- [Q/q]

Input: 2

--- Program download ---

Main program     :0
System data      :1
Quit             :[Q/q]

Input:0

--- Task execution mode ---

Waiting          :1
Immediate        :2
Quit             :[Q/q]

Input:2

>>> vs32mwlist.txt   download.

tftpDownload : User file TFTP start.
Received.
TFTPlistDload end!

>>> Main program     download.

<< Download program file. >>

tftpDownload : User file TFTP start.
Received.
Checksum matched!

--- Program download ---

Main program     :0
System data      :1
Quit             :[Q/q]

Input:
```

Select the download menu.
1 = All programs
2 = Only one program
Q = Quit

Program type is asked.
1 = Main program
2 = System data
Q = Quit

Task execution mode is asked.
1 = Execute after waiting
2 = Execute immediately
Q = Quit

The selected program is downloaded.

The result of downloading is displayed.
Download program selection.
0 = Main program download
1 = System data download
Q = Quit

Error Messages

When any error occurs in using the maintenance commands, error message is displayed to urge data entry again. The error messages listed below will help you to find solutions.

Message	Cause Solution
Command not completed.	The command did not end normally. Check the normality of environment and enter the correct command.
Command not found.	A command other than the supported command is entered. Enter the supported command.
Enter sub command.	Required sub command has not been entered. Enter the required sub command.
Invalid address.	The form of the entered address is different. Enter with the correct address format.
Invalid character.	Any illegal character is entered. Confirm there is no illegal character and a space for password and enter again.
Invalid parameter.	Any illegal parameter is entered. Enter the parameter of correct value.
Invalid password.	The password is incorrect. Enter correct password.
No parameter?	Required parameter has not been entered. Enter the required parameter.
Out of data range.	Data is entered exceeding the available range. Specify the data in the correct data range.
Out of memory range.	Data is entered exceeding the memory range. Specify the correct memory area.
Section name and Key name already exist.	Specified section name and key name are already used. Enter new section name and key name.
Sub command not found.	The entered sub command is not supported. Enter supported sub command.
System data file (sysdata) corrupted. Initialize system data with “INIT CONFIGDATA” command.	The system data file is corrupted. Initialize the system data using the INIT CONFIG command.
Too many parameters.	Unnecessary parameter is entered. Confirm if the entered parameter is required.
VLAN ID is already registered.	Specified VLAN ID is already used. Enter new VLAN ID.

Message	Cause Solution
VLAN ID is not registered.	Specified VLAN ID is not registered. Register the VLAN ID.

UNIVERGE SV9500
Software Model Peripheral Equipment Description

GVT-016673-001

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